UNIVERSIDADE D
COIMBRA

Beatriz Rosa Lopes Cancela

# How CSR is challenging organizations: from the driving role of green strategic alliances to green innovation and sustainability performance

**Doctoral Thesis in Business Management, supervised by Doctor Professor Arnaldo Coelho and Doctor Professor Maria Elisabete Neves, presented to Faculty of Economics, University of Coimbra**

August 2022

Faculty of Economics of Coimbra University

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# INSCRIPTION

Tinhas o abraço apertado
O sorriso rasgado
Eras o colo mais forte
Davas-me o Norte

Pescador de balde cheio
Moreno de alma serena
Amigo do devaneio
Livre como uma pena

Tu eras farra, folia…
Pai de sorriso pronto
A minha metade
Minha mais-valia

Mantenho as lembranças
Esqueço a nostalgia
Só posso ser feliz
Por ser tua cria

Ao meu pai, Augusto Carlos Cancela Francisco.

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*"à vida peço apenas amor e paz, porque o resto eu corro atrás"*

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Por último, quero deixar registado um momento da minha história… lembro como se fosse hoje, as últimas palavras do meu pai: pediu-me que fosse feliz, e disse-me que sabia que eu ia ser o que quisesse…. Nunca lhe disse o curso que escolhi… sempre acreditou que seria advogada, pelo meu sentido de justiça e reivindicativo. No seu último dia disse-lhe ao ouvido que seria doutora, e ele, já sem falar, sorriu. Sei que sempre acreditou em mim e este grau também é dele. Foi ele que em todos os tropeções e quedas esteve sempre cá, a amparar-me e a dar-me forças para ser cada dia melhor. Agradeço-lhe todos os dias os valores que me transmitiu, mas especialmente, a resiliência e alegria.

*Pai, hoje sou o que sempre quis!*

# ABSTRACT

**Purpose:** Our main objective is to explain how corporate social responsibility is challenging companies, exploring the leading role of green strategic alliances in green innovation and sustainable performance. Four works were developed: 1) to provide an overview and synthesis of the existing body of knowledge on leadership and corporate social responsibility, identifying the most relevant research, recognizing gaps and future research opportunities; 2) to identify the effects of ambidexterity (exploration and exploitation) on social responsibility and green product innovation as well as the moderating role of consumer's pressure; 3) to investigate the relationship between green strategic alliances and sustainable innovation and new green product success; 4) to investigate how green strategic alliances influence green organizational identity and sustainability performance through the effect of green shared vision and value.

**Methodology:** A bibliometric analysis and a literature review were performed on 1116 documents obtained from the Web of Science database (1990-2021), using the VOSviewer software program. The three empirical studies used primary data, based on cross sectional data, using three questionnaires (a-c). a) a 23-item questionnaire was developed to explore the proposed relationships, applied in two moments, and answered by two critical respondents from each company. b) and c) 60-item questionnaires were developed and applied in Portugal and China. We proposed three theoretical models that were tested using structural equation modelling (SEM).

**Findings:** The bibliometric study showed that the future research topics should on green strategy of organizations; cultural and contextual issues; and capabilities development. Secondly, a positive influence of ambidexterity on sustainability was shown, and ultimately on new product success and green product innovation. Green product innovation increases the success of new products due to the growing demand for sustainable products due to higher customer pressure. Green strategic alliances improved corporate social responsibility practices, promoting green products and processes, while also contributing to increase green and social shared vision as well as sustainability and green organizational identity.

**Implications/Originality:** This innovative study provided several suggestions for future research and needed changes in companies' management, which are briefly highlighted: companies may use hierarchical dynamic capabilities and balance exploration and exploitation, resulting in successful ambidextrous companies taking advantage of sustainability programmes and green strategies; mixing value creation and organizational learning theories to explain how green

strategic alliances and the importance of leaders in sustainable partnerships influence companies' sustainable behaviour; leaders learned how to change corporate operations, to improve innovative and green-oriented approaches; strategic alliances between companies play a role to promote green identity and sustainable performance through ecological and social shared vision and value towards corporate sustainability.

Limitations: This work has some inherent limitations that should be addressed in future research. Our investigation is based cross-sectional data that inhibits the comparison with other periods and the establishment of a clear causality, while the convenience sampling limits the generalization of our results. The role of managers and leaders needs further investigation.

Keywords: Corporate Social Responsibility; Green Strategic Alliances; Green Innovation; Ambidexterity; Green Organizational Identity

# RESUMO

**Objetivo:** O objetivo principal do presente trabalho é explicar como é que responsabilidade social corporativa desafia as empresas, investigando o papel da liderança, através das alianças estratégicas verdes, e o seu impacto na inovação verde e no desempenho sustentável. Para colmatar o objetivo desenvolveram-se quatro estudos: 1) facilita uma visão geral e integrada das investigações existente sobre liderança e responsabilidade social corporativa, identificando as pesquisas mais relevantes, reconhecendo lacunas e futuras oportunidades de pesquisa; 2) identifica os efeitos da ambidestria (*exploration* e *exploitation*) na responsabilidade social e inovação de produtos verdes, bem como o papel moderador da pressão do consumidor; 3) investiga a relação entre alianças estratégicas verdes e inovação sustentável e sucesso de novos produtos verdes; 4) investiga como as alianças estratégicas verdes influenciam a identidade organizacional verde e o desempenho da sustentabilidade através do efeito da visão e valor partilhado verde.

**Metodologia:** Realizou-se uma análise bibliométrica e uma revisão de literatura de 1116 artigos obtidos na base de dados Web of Science (1990-2021), utilizando o software VOSviewer. Os três estudos empíricos utilizaram dados primários, baseados em dados transversais, utilizando três questionários (a-c). a) foi desenvolvido um questionário de 23 itens para investigar as relações propostas, aplicado em dois momentos, e respondido por dois respondentes críticos de cada empresa. b) e c) foram desenvolvidos e aplicados questionários de 60 itens em Portugal e na China. Propusemos três modelos teóricos que foram testados usando modelagem de equações estruturais.

**Resultados:** O estudo bibliométrico mostrou que os futuros tópicos de pesquisa devem ser sobre estratégia verde; questões culturais e contextuais; e desenvolvimento de capacidades. Os estudos empíricos apresentaram evidências de uma influência positiva da ambidestria na sustentabilidade e, finalmente, no sucesso de novos produtos e na inovação de produtos verdes. A inovação de produtos verdes aumenta o sucesso de novos produtos devido à crescente demanda por produtos sustentáveis devido à maior pressão do cliente. As alianças estratégicas verdes melhoraram as práticas de responsabilidade social corporativa, promovendo produtos e processos verdes, além de contribuir para aumentar a visão compartilhada verde e social, bem como a sustentabilidade e a identidade organizacional verde.

**Implicações/Originalidades:** Este estudo inovador forneceu várias sugestões para pesquisas futuras e enaltece mudanças necessárias na gestão das empresas: as empresas podem usar

capacidades dinâmicas hierárquicas e equilibrar o *exploration* e *exploitation*, resultando em empresas ambidestras bem-sucedidas aproveitando programas de sustentabilidade e estratégias verdes; mesclar as teorias de criação de valor e aprendizagem organizacional para explicar como as alianças estratégicas verdes e a importância dos líderes em parcerias sustentáveis influenciam o comportamento sustentável das empresas; os líderes podem reconhecer como mudar as operações corporativas, para melhorar as abordagens inovadoras orientadas para um mundo mais verde; alianças estratégicas entre empresas desempenham um papel crucial que promove a identidade verde e o desempenho sustentável por meio de uma visão e valor mais ecológicos e sociais que favorece a sustentabilidade corporativa.

Limitações: Este trabalho tem limitações inerentes que devem ser abordadas em pesquisas futuras. A investigação é baseada em dados transversais que inibem a comparação com outros períodos e o estabelecimento de uma causalidade clara, enquanto a amostragem de conveniência limita a generalização de nossos resultados. O papel dos gestores e líderes precisa de mais investigação.

Palavras-chave: Responsabilidade Social Corporativa; Alianças Estratégicas Verdes, Inovação Verde; Ambidestria; Identidade Organizacional Verde

# LIST OF ABBREVIATIONS

| | |
|---|---|
| CEO | Chief Executive Officer |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative Fit Index |
| CP | Consumer Pressure |
| CR | Composite reliability |
| CS | Corporate sustainability |
| CSR | Corporate Social Responsibility |
| DC | Dynamic Capabilities |
| DEA | Data envelopment analysis |
| GDP | Gross Domestic Product |
| GOI | Green Organizational Identity |
| GPI | Green Product Innovation |
| GSA | Green Strategic Alliances |
| GSSV | Green and Social Shared Vision |
| GSV | Green Shared Value |
| IFI | Incremental Fit Index |
| INE | National Institute of Statistics |
| NGPS | New Green Product Success |
| NPS | New Product Success |
| PCA | Principal Components Analysis |
| RMSEA | Root Mean Squared Error of Approximation |
| S | Sustainability |
| SEM | Structural Equation Modelling |
| SME | Small and Medium-sized Enterprises |
| TLI | Tucker-Lewis fit Index |
| TMT | Top Management Teams |
| WCED | World Commission on Environment and Development |
| WOS | Web of Science |

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# CHAPTER 1

## HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

GENERAL INTRODUCTION

# CHAPTER 1 – GENERAL INTRODUCTION

## 1.1. RESEARCH CONTEXT

Since the 70s, acceleration of the industrialization process and economic and social development have increased the demand and role of the social and environmental sector (Hussain, Rigoni, & Orij, 2018). With this macro background, human beings began to review and reflect on the traditional concept of development, exploring new models, such as corporate social responsibility (Kong & Zhang, 2018; Zhang & Zhu, 2019).

The path of corporate social responsibility reflects the evolution of the economic system, social change, and even changes in the environment. Initially, corporate social responsibility was recognized as social responsibility that involves a public attitude towards the economy and society's resources, going beyond the interests of private companies (Frederick, 1960). Another important milestone in the evolution of social responsibility was the emergence of the concept introduced by Elkington, which aims to enhance the three important dimensions of social responsibility: economy, society, and environment (Elkington, 1998). Currently, corporate social responsibility is recognized by the European Commission as companies' voluntary integration of social and environmental concerns in their operations and their interaction with other stakeholders (European Commission, 2022). Given the growing importance of corporate social responsibility (CSR) in the companies' management and performance and its impact on society, CSR has become an important research topic in both the management and accounting literature (Yuan et al., 2020). The debate on corporate social responsibility suggests the need to consider social goals along with profit maximization (Hussain, Rigoni, & Cavezzali, 2018). Socially responsible practices are considered a proactive strategy by companies that lead to a greater social reputation, better skills, and increased competitive advantages, based on a greater ability to generate innovation (Bhupendra & Sangle, 2015; Christmann, 2000; Voegtlin & Scherer, 2017). Corporate social responsibility is understood as the set of actions and policies that companies develop to evolve economically, respecting the environment and the progress of society (Engert & Baumgartner, 2016), while sustainability is understood as long-term performance and growth. Indeed, corporate social responsibility strategically embrace social and environmental activities, including internal capabilities (resources and capacities) to promote sustainable performance (Bakos et al., 2017; Muñoz-Torres et al., 2018; Wu et al., 2017).

Several theories can help explain companies' engagement with CSR, and research in this area began in the 1990s with rapid growth in the 21st century (White et al., 2017). The existing

literature reveals that stakeholders' theory (Freeman, 1984) is the dominant perspective used to study the evolution of social responsibility or sustainability performance. However, agency theory is probably the first theory used to support the initial developments in the field and other management theories gave additional support to the advancements in CSR, such as resource-based view and value creation.

Corporate social responsibility is seen as a cultural dimension of the business world, and a significant factor in the companies' continuity, through the development of cohesive and stable strategies that respond to stakeholders' interests (Lloret, 2016; López-González et al., 2019). The stakeholders' theory claims that companies and their managers should act on behalf of any group or individual who can affect or is affected by a company's operations in achieving its objectives (Freeman, 1984, p. 46). Socially responsible companies are those that can create value for all interested parties and are prepared to influence the three basic dimensions of sustainability: economy, social, and environment (Claro & Claro, 2014). There is an interdependent relationship between a company and its stakeholders, which means that strategic business initiatives will affect the company's stakeholders and, thus, should be aligned with them to ensure optimal integration and maximum performance of the company´s CSR (Freeman, 1984; Hussain, Rigoni, & Orij, 2018).

Since this is a current and emerging theme, numerous studies have already been carried out. However, there are still gaps in the literature that need to be filled. Many studies deal with the relationship between management and social responsibility. However, bibliometric studies are needed to increase systematic knowledge of the role of management and leaders regarding social responsibility (de Ruiter et al., 2018), given the different results achieved and the lack of consensus on the different approaches used. Additionally, this work provides new research opportunities on the relationship between leadership and CSR development. This first chapter aligns all the empirical work to be carried out throughout the thesis since it highlights interesting gaps in the literature that will allow us to study specifically new cultural perspectives, different countries, and distinct determinants of corporate social responsibility (De Roeck & Farooq, 2018; Niesten & Jolink, 2020; Tong et al., 2018; Yuan et al., 2020).

Recent studies have already considered several drivers of social responsibility, namely mechanisms of corporate governance (Cancela et al., 2020; Hussain, Rigoni, & Orij, 2018), leadership (Afsar et al., 2018; Fu et al., 2020; Liao & Zhang, 2020), and organizational learning (Osagie et al., 2020), among others. However, studies are still lacking in these areas, especially considering the effects of dynamic capabilities (DC) (Koryak et al., 2018; Maletič et al., 2016; Xing et al., 2019a) and partnerships (Niesten & Jolink, 2020; Shi et al., 2020; Thorne et al., 2017) on corporate social responsibility, and sustainability performance. Stakeholder theory emphasizes

that companies must align with all stakeholders (Freeman, 1984). Even so, the literature reveals a lack of studies on some stakeholders, namely partners (Yuan & Cao, 2022).

One of the main stakeholders of CSR strategies are business partners. Competitors, suppliers and other business partners may develop new values, cultures and knowledge, which can be brought and disseminated across the different companies (Shi et al., 2020; Keys et al., 2013). The creation of relationships between companies to promote sustainable improvements is called green strategic alliances. Companies create strategic green alliances to share information, resources, capabilities, skills, experiences, and technologies (Niesten & Jolink, 2020; Pooe & Munyanyi, 2019; Shakeri & Radfar, 2017). In addition to capturing new knowledge and capabilities between partners, companies need to be able to transfer them within each company, using different learning approaches (Yang & Yan, 2020). It has been established that companies must be more socially responsible by developing strategic alliances with other companies through partnerships, even if the links remain to be investigated (Shi et al., 2020), because it is necessary to clarify the role of green strategic alliances in sustainability developments (Tower et al., 2021). Only a few studies address the role of strategic alliances in the development of new products (Tower et al., 2021), innovation (Dang et al., 2019; Nguyen & Johnson, 2020) and on the development of new capabilities (Huang & Chen, 2022).

To fill the gaps found in the literature, specifically based on the suggestions raised by the review article, three distinct empirical studies were designed.

## 1.2. RESEARCH PROBLEM

Business integration and transition concerning social responsibility are considered a necessary condition for organizations' survival, thus being a current topic that needs further research (Boons & Lüdeke-Freund, 2013; Dibrell et al., 2015; Smith, 2012; Bacinello et al., 2019). Currently, the role of managers is not only to meet shareholders' demands, but also to consider and balance all stakeholders' expectations, to achieve the best corporate interests in the long term, namely in responsible practices and sustainable performance (Groves & LaRocca, 2011).

The role of leaders and managers in the field of sustainability is clearly crucial (Zhao et al.,2022), mainly because of the limited implementation of CSR strategies (Baumgartner & Rauter, 2017; López-González et al., 2019). More investigation in this area is needed, because despite the studies already made, it continues to raise many doubts among managers, employees, potential investors, researchers, and society in general. Consequently, our main objective is to explain how corporate social responsibility is challenging companies, exploring the leading role of green strategic alliances in green innovation and sustainable performance. This investigation aimed to contribute to the literature on corporate social responsibility in several ways. Firstly, it established the framework for general social responsibility developments, identifying the main areas and current dynamics. Secondly, it studied how companies' resources and capabilities are used internally, or when acquired externally, based on alliance partnerships. Specifically, the investigation studied the creation of green partnerships and the development of dynamic capabilities in companies, to promote higher sustainability performance.

Empirical work investigated the impact of dynamic capabilities on social responsibility and, consequently, on sustainable innovation. The fourth and fifth chapters studied the role of green strategic alliances in promoting new ideologies and new cultures, as well as in the innovation and success of new products in the market.

Accordingly, the aim is to extend the current research on corporate social responsibility to a broader range of partnerships by addressing the following research questions:

1. What are the leading trends in academic research on corporate social responsibility considering the role of leadership, and what are the future research opportunities in this field?
2. How does ambidexterity affect corporate social responsibility, and through them, green product innovation and new green product success? Do consumers have an important role in companies' social responsibility?

3. What is the role of external culture and knowledge and how can we capture it based on green strategic alliances to improve sustainable innovation and market success, considering the effects of corporate social responsibility?
4. Do green strategic alliances influence green organizational identity and sustainability performance through the effects of green shared vision and green shared value?

## 1.3. STRUCTURE OF THE THESIS

The document starts with the present introduction and literature review to give an overview of the topic to be investigated. Then, it presents the methodology and investigation strategy.
This is followed by a bibliometric analysis and the three research models, which resulted in four different investigations, compiled in the following chapters:

1. Bibliometric analysis of leadership and social responsibility: status, development, and future research directions, was submitted to the Review of Managerial Science.
2. Greening the business: how ambidextrous companies succeed in green innovation through sustainability, was submitted to publish in the Business Strategy and the Environment.
3. Green strategic alliances and corporate social responsibility: impact on sustainable innovation for different countries, was submitted to the Journal of Product Innovation Management.
4. Green organizational identity and sustainable performance: the role of green strategic alliances and their impact on sustainable shared values and vision.

# CHAPTER 2

## HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

LITERATURE REVIEW

# CHAPTER 2 - LITERATURE REVIEW

## 2.1. CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY

The study of corporate social responsibility started recently, but the first references to this topic occurred in the 20th century. The concept focusing on the three dimensions of sustainability in the business context (economy, environment, and society) emerged only at the end of that century (Elkington, 1998; Hussain, Rigoni, & Orij, 2018).

Since the UN Conference on the Human Environment, held in Stockholm in 1972, followed by the great impact of the *Brundtland* report in 1987, corporate social responsibility has progressively increased in the ranking of social priorities, fostering its growth in the management field (Hussain, Rigoni, & Orij, 2018).

The business world and society in general are constantly changing and transitioning, which resulted in the emergence of several definitions of CSR (Jankalova, 2016). The first reference to the topic was made by Frederick in 1960, who detailed that social responsibility involves a public stance with respect to the economy, society, and resources, as well as the willingness to see that these resources are used for other social purposes, going beyond the interests of private entities and companies (Frederick, 1960).

Social responsibility is based on Elkington's triple bottom line concept, i.e., the argument that being sustainable implies economic, social, and environmental issues (Büyüközkan & Karabulut, 2018; Gallego-Álvarez et al., 2011; Garcia et al., 2016; Muñoz-Torres et al., 2018; Svensson et al., 2018; Wu et al., 2017). Social responsibility involves adopting business behaviour at a level that is congruent with societal norms, values, and expectations (Carroll, 1999), as well as the notion that companies have obligations towards the various interest groups in society end beyond what is stated by law (Jones, 1980). Claro and Claro (2014) concluded that the concept of social responsibility has no single definition, stressing that the key is the right balance between environmental protection and social and economic development.

Currently, the European Commission states that social responsibility integrates environmental issues and social solidarity, human rights, consumer issues, and ethics, setting common values and principles that must regulate organizations' conduct (European Commission, 2022). Although the concept of corporate social responsibility has no strict definition, the most common one is that of the World Commission on Environment and Development (WCED): "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WCED, 1987, p. 24).

The evolution of the business world, namely facing pressure from stakeholders, forces companies to be aware of, and include social responsibility in their current practices (Hussain, Rigoni, and Orij 2018). Companies currently face the constant challenge of designing business strategies that are as sustainable as possible, which involves creating economic value, but also mitigating the different environmental and social problems created in their daily activities. Therefore, the three dimensions of sustainability must be included in companies' vision, reflecting their commitment to social responsibility (Bonn & Fisher, 2011).

At the beginning of the 21th century, addressing CSR issues was the same as dealing with sustainable development or corporate sustainability (CS). Subsequently, corporate sustainability was considered a derivation of the concept of sustainable development, which in turn represents a parallel approach toward CSR (Montiel, 2008; Shrivastava & Addas, 2014). At present, social responsibility is rather related to culture, values and practices, while sustainability is related to results and performance, considering all the sustainability pillars (Padilla-Lozano & Collazzo, 2022). Christofi, Christofi and Sisaye (2012) emphasized that the concept of sustainability arises from concerns about social and corporate responsibility, environmental regulation, and sustainable development, based on stakeholder theory (Mahmood et al., 2018), since it focused on the performance and execution of socially responsible practices.

According to the International Federation of Accountants (IFAC, 2018), the three dimensions of sustainability can be defined as:

• Economic – broadly deals with organizations' impact on the economy, considering their financial performance. It emphasizes that profit, growth, and job creation are equally fundamental as compensation and benefits for families, as well as in generating taxes for governments.

• Environmental – recognizes the importance of the environmental impact of organizations' operations, as well as the consumption of natural resources in designing products and providing services.

• Social – represents the impact that organizations have on people in terms of health, skills and motivations, human relationships, and ethical conduct in business.

Currently, social responsibility is seen as a cultural dimension of the business world, and a significant factor in companies' continuity through developing cohesive and stable strategies (Lloret, 2016; López et al., 2007). In this context, Bonn and Fisher (2011) alluding to Benn and Dunphy (2014), mentioned that now, an organization is socially responsible if, in addition to focusing on economic performance, it supports the ecological viability of the planet and species, adopting equitable and democratic practices, and cooperating towards social justice. Thus, social

responsibility can be understood as a strategic approach, focusing not only on efficiency and effectiveness, but also on the company's productivity and long-term value creation, as it follows the three dimensions (Kocmanová et al., 2011; Perrini & Tencati, 2006). Other authors argued that a proactive, sustainable strategy is based on the efficient use of resources, increasing competitive advantages, reducing waste, promoting social reputation, better preferences, and the ability to generate innovation (Banerjee, 2001; Bhupendra & Sangle, 2015; Christmann, 2000). Baumgartner and Rauter (2017) also emphasized that the economic, environmental, and social impacts resulting from companies' sustainable performance have effects on society. However, these effects always depend on external stakeholders' perception and the existing socio-economic and cultural situation.

Table 1 - Definitions of Corporate Social Responsibility

| Definition | Author (year) |
|---|---|
| Business-people's obligations to pursue the policies, make decisions, or follow lines of action which are desirable in terms of society's objectives and values. | Bowen (1953) |
| Involves a public stance regarding society's economy and resources as well as a willingness to see that these resources are used for other social purposes, beyond the interests of private companies | Frederick (1960) |
| Corporate social responsibility is the notion that corporations have an obligation to constituent groups in society other than stockholders and beyond that prescribed by law and union contract. | Jones (1980) |
| "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" | WCED (1987, p.24) |
| Encourages businesses to take a broader approach to business performance. It suggests that there are three key areas of performance: profit, planet, and people | Elkington (1998) |
| Corporate social responsibility encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time. | Carroll (1999) |
| Three domains of corporate responsibilities: economic, legal, and ethical. | Schwartz and Carroll (2003) |
| A process to integrate social, environmental, ethical, human rights and consumer concerns into business operations and core strategy in close corporation with the stakeholders. | European Commission (2011) |
| CSR represents the way in which companies contribute to meeting stakeholders' demands and requirements and especially, the role they play in ensuring long-term sustainability. | Fernández-Guadaño and Sarria-Pedroza (2018) |

## 2.2. ORGANIZATIONAL THEORIES

The first underlying theories studied regarding social responsibility were agency and stakeholder theories. Primarily, social responsibility was used to protect shareholders, based on agency theory. However, due to the evolution of the market, the focus recentred on companies' sustainable continuity. Sustainable companies are those that can create value for all internal and external stakeholders. Given this evolution, studies started to be based on stakeholder theory.

Jensen and Meckling (1976) specified that agency theory explains the conflicting relationship between managers and stakeholders, assuming the presence of asymmetric information, opportunistic behaviour of agents, and conflicts of interests between the principal (shareholder) and agents (manager). On the other hand, in stakeholder theory (Freeman, 1984) companies should be concerned about the interests of other relevant stakeholders, such as their suppliers, consumers, employees, and communities. Stakeholder theory is considered a theory of society (Freeman, 1984; Tricker, 2009). This is based on the network of formal and informal relationships, establishing how control is practiced in companies and how risks and results are shared with stakeholders (Hussain, Rigoni, & Orij, 2018; Ortas et al., 2017). Currently, stakeholder theory is one of the most commonly used theories in social responsibility studies.

Jamali (2006) stated that organizations' current challenges are the need to change their priorities towards more holistic models of performance evaluation, at various levels, including measures related to multiple stakeholders. Companies with improved vision and awareness of stakeholders' needs will potentially tend to focus on social responsibility (Hussain, Rigoni, & Orij, 2018). However, with the evolution of markets, it becomes relevant to study the various business contexts and deepen new supporting theories (Kowalski & Matusiak, 2019). The resource-based view emerged to support a new vision of the corporate social responsibility, as a key resource for balanced performance and competitiveness. This theory is an organizational assessment model that considers resources as the key to higher organizational performance (Branco & Rodrigues, 2006; Macedo et al., 2017; Verona, 1999). Resources can enable the organization to have, gain and maintain a competitive advantage through corporate social responsibility (Barney, 1991). Corporate social responsibility can be seen as an important asset that may improve trust (Cheng et al., 2008) reputation (Tasleem et al., 2017), innovation (Fu et al., 2020) and competitiveness (Chang & Hung, 2021).

Similarly, dynamic capabilities theory focuses on companies' resources and capabilities. This theory is used to achieve strategic development based on the dynamic capabilities to produce radical discontinuous changes while maintaining minimum standards of capabilities to ensure competitive survival (Teece, 2007). Li et al. (2021) state that corporate social responsibility

performance depends on how firms apply their resources and capabilities to implement CSR. A firm's ability to integrate, build, and reconfigure internal and external competencies to respond to environmental changes is its dynamic capability.

Nowadays, social responsibility is becoming more important. Value creation theory provides an additional explanation for this rapid growth of interest in CSR (Gómez-Bezares et al., 2017). Companies must integrate their stakeholders in value creation processes, to face existing environmental challenges and respond to stakeholders' needs and expectations, quickly and competitively. Valuable knowledge exists not only within the limits of the organisation, but also outside the firm. As such, firms' ability to explore, acquire, retain, integrate, and exploit knowledge, is central to firm value creation (De Silva et al., 2018).In this context, companies can use CSR as a resource and strategic capability to reduce the effect of their operations on the environment in which they operate and create value for stakeholders (Kowalski & Matusiak, 2019).

Finally, it is necessary to understand not only how companies act in terms of capturing resources and capabilities, but also in transmitting and introducing them into their organizational activities and decisions. In this area, studies have used organizational learning theory to explain sustainable developments. According to Benn et al. (2013), several studies demonstrate that the problem of implementing sustainability in organizations is partly due to organizational learning barriers. Thus, the theory of organizational learning is currently used to dissect the dissemination and evolution of knowledge and the use of capacities learned internally in companies. Organizational learning theory may explain how companies resist changing their paradigms without organizational learning processes (Levinthal, 1991). Learning is necessary to adjust corporate operations, fight inertia, learn new behaviours, and interpret phenomena with innovative lines of thought (Dixon et al., 2007; Zhang & Zhu, 2019).

Table 2 – Theories that supported Corporate Social Responsibility

| Theories and authors | Definition |
|---|---|
| **Stakeholders**<br>Freeman (1984) | Stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities, and others who have a stake in the organization. The theory argues that a firm should create value for all stakeholders, not just shareholders. |
| **Agency**<br>Jensen & Meckling (1976) | Explores the relationship between a principal and their agent. Throughout the relationship, there are a few decisions that are made by the agent on behalf of the principal. |
| **Organization learning**<br>Levinthal (1991) | Explain how companies are prepared to learn and undergo education with the intention of continuous improvement. |
| **Value creation**<br>Porter (1991) | The value creation process is at the heart of integrated thinking and value creation. Strategically, the business model is a central cog in the value creation process which turns valuable resources and relationships (inputs) into results (outputs) that create value for stakeholders and society (outcomes and impacts). |
| **Resource-based view**<br>Barney (1991) | Articulates the link with firm resources, capabilities and competitive advantages and proposes that organizations should look inside the company to find the sources of competitive advantage rather than searching outside in the competitive environment. |

## 2.3. DETERMINANTS OF SOCIAL RESPONSIBILITY

Numerous studies have been carried out in the field of corporate social responsibility, and the role of intra-organizational culture and company values is considered decisive in implementing socially responsible practices and companies' sustainable performance (Afsar et al., 2020; Bowen, 1953; Zhao et al., 2018). The essence of the ability to manage, integrate and learn from strategic alliances has long been a central topic in business (Al-Gharrawi, 2018). Companies, through the managers and leaders, must integrate their suppliers and consumers into value creation processes, to face the existing environmental challenges and adequately respond to the stakeholders' needs and expectations.

The main challenge is to find external sources of sustainability knowledge and forms of internalizing it, transforming it into a new culture, new values, into new knowledge and new capabilities, to make the company more socially engaged, greener, more innovative, and more competitive.

It is fundamental to combine external resources and internal capabilities to redesign values and knowledge to promote entry into new areas of activity. Strategic alliances and, more recently, strategic green alliances are being used as sources of external knowledge that can then be learned and disseminated internally. The increasing uncertainty and complexity of the global business environment have led to the rapid proliferation of strategic alliances (Ferreira et al., 2021b; Lin & Darnall, 2010). A strategic alliance is a voluntary agreement of cooperation between companies to execute specific projects and achieve the best performance (Duong et al., 2021; Lin, 2012). Companies that create strategic alliances share information, resources, capabilities, skills, experiences, and technology, therefore promoting each other's strengths, reducing costs and operational risks, taking advantage of economies of scale, and redesigning new strategies (Niesten & Jolink, 2020; Pooe & Munyanyi, 2019; Shakeri & Radfar, 2017).

The concept of a green strategic alliance (GSA) corresponds to formal or informal collaboration agreements between two or more companies that aim to develop joint solutions to overcome environmental problems and become environmentally and socially responsible (Crane, 1998; Shah, 2011). Therefore, acquiring knowledge and capabilities through partners is an important driver of CSR, but it is also relevant to understand if companies integrate knowledge and manage to propagate it internally (Cezarino et al., 2019; Jakhar et al., 2020). According to Cezarino et al. (2019), companies achieve success because of their ability to constantly change and adjust their resources.

Internal resources and capabilities are the elements that make it possible to take advantage of this new knowledge. Ambidexterity can be an integral concept to denote corporate dual

orientation of integrating external and internal knowledge or capabilities (O'Reilly & Tushman, 2008). The ability to achieve ambidexterity is at the heart of a company's dynamic capabilities (Raisch & Birkinshaw, 2008). The proactive search to become an ambidextrous organization is regarded as imperative, and continuous adaptation and innovation are required to respond to the changes imposed by phenomena related to climate change and resource scarcity (Brix, 2020; Funk et al., 2019; Pardo-García et al., 2019; Rodríguez-Rivero et al., 2020).

## 2.4. IMPACTS OF SOCIAL RESPONSIBILITY

Socially responsible practices are considered a proactive strategy by companies that lead to a greater social reputation, better skills, and increased competitive advantages, based on a greater ability to generate innovation (Bhupendra & Sangle, 2015; Christmann, 2000; Voegtlin & Scherer, 2017). Additionally, social responsibility is considered a driver of the use of new social and environmental ideologies that stimulate the creation of new behaviours at work, new products, or new processes (Gallego-Álvarez et al., 2011).

Husted and Allen (2007) stated that social responsibility can have several advantages for companies, namely in innovation. Sustainable innovation is considered a transition process, in which considerations for sustainability or social responsibility are integrated (Bacinello et al., 2019). Boons et al. (2013) and Bacinello et al. (2019) considered that sustainable innovation is a process in which sustainability considerations (economic, social, and environmental) are integrated into the company's systems. According to Adams et al. (2016), there is a great need to develop and propagate sustainable innovations in the business context, thus favouring social and environmental responsiveness, while boosting economic growth.

Business integration and transition concerning sustainable innovation are considered necessary conditions for organizations' survival, this being a current topic in need of further studies (Boons et al., 2013; Dibrell et al., 2015; Smith, 2012). Sustainable innovation is commonly defined as 'the development of new products, processes, services and technologies that contribute to the development and well-being of human needs and institutions, respecting natural resources and regenerative capacities' (Tello & Yoon, 2008, p. 165). We sought to understand not only the evolution of innovation but also the creation and improvement of transitions from conditions to future conditions, through new and current variables. Song and Yu (2018) showed that companies with present sustainable values are more able to change their behaviour towards adopting more sustainable activities and are more prone to sustainable development. These new social responsibility practices may improve reputation, competitiveness, and the adoption of a greener orientation and a greener identity (Afsar et al., 2018).

# CHAPTER 3

## HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

METHODOLOGY

# CHAPTER 3 - METHODOLOGY

## 3.1. INTRODUCTION

The procedures and steps taken to achieve the proposed goals of this thesis are described in this chapter. This investigation started by analysing the existing body of knowledge on corporate social responsibility, based on leadership interactions, which raised the ideas for three empirical investigations. The research models proposed consisted of 3 quantitative cross-sectional studies, based on three different samples. The data obtained from 2 structured questionnaires (one of them used in China and Portugal), were tested using structural equation modelling (SEM) techniques. Three partial models and a bibliometric analysis led to four distinct papers which were submitted for publication in indexed scientific journals.

This chapter is organized as follows:

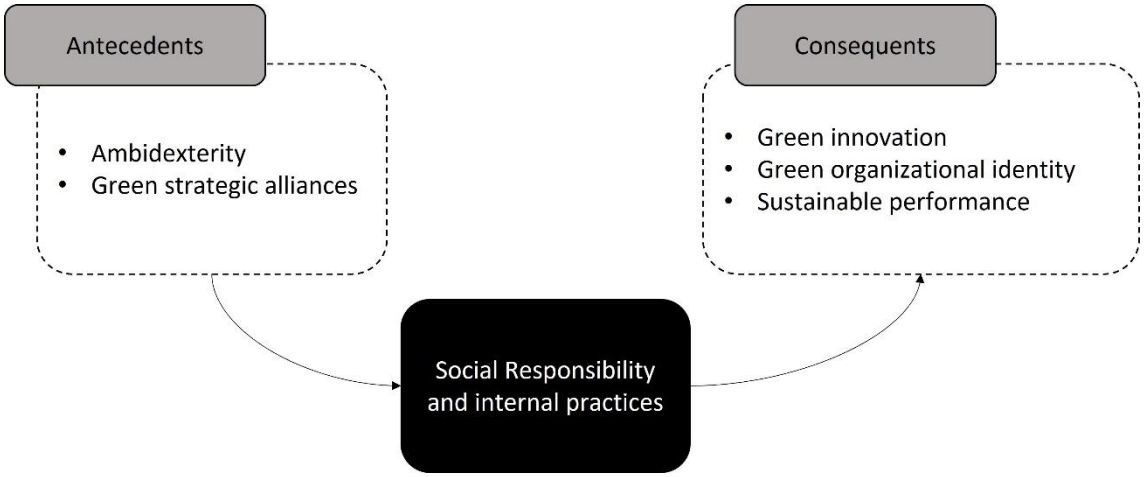
1. Introduction
2. Bibliometric analysis
3. Empirical studies: Operationalization of investigation; Metrics; Samples; Data analysis methods
4. The investigation strategy

## 3.2. BIBLIOMETRIC ANALYSIS

The first article used a bibliometric approach. Through a systematic literature review, it was possible to synthesize the current state of the literature on corporate social responsibility and its interconnections with leadership issues, identify gaps and provide future research directions. To do so, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol was employed. Articles published until 2021 and available on the Web of Science (WOS) database, were used to identify the most influential journals, most cited authors, articles, most prolific countries, and institutions. Current research trends were also analysed with keyword mapping provided by VosViewer software. A detailed analysis of the most recent articles (2018-2021) identified topics that have been little discussed and opportunities for future research in the field of corporate social responsibility.

Based on the bibliometric analysis, the basic idea for this thesis is summarized in Figure 1. It studies the external sources of green knowledge and the internal mechanisms of strengthening the social responsibility culture and practices, in order to reinforce innovation and sustainability performance, to make the company become greener.

Figure 1 - Graphical abstract



## 3.3. EMPIRICAL STUDIES

The empirical investigations are based on a quantitative research design, since the approach to the problem requires the use of statistical resources and techniques explained in the section referring to data analysis methods.

A quantitative methodology was used because it captures the variability, and establishes the association between variables, allowing inferences. This methodology avoids bias, controls the possibility of alternative explanations, and enhances the generalization and replication of results (Saunders et al., 2009). The scientific method is hypothetical-deductive since hypotheses were formulated based on, and supported by theory and the literature review, from which consequences were deduced and duly tested. Finally, the data analysis is rather quantitative, as it uses the statistical method to achieve the proposed results (Saunders et al., 2009).

### 3.3.1. Operationalization of investigation

The investigation was operationalized through primary data, producing research of and analytical nature and examining relationships between variables, specifically cause-effect relationships (Saunders et al., 2009). This began with construction of the questionnaires to be used.

All questionnaires were structured in three distinct parts. The first part included a brief presentation to clarify the purpose and objectives of the investigation. Considering that in one case, data was obtained from a single source of information, the 2 questionnaires adopted a set of recommendations proposed by (Podsakoff et al., 2003) to minimize the common bias of the method:

- Ensure that respondents' responses are anonymous;
- Assure respondents that there are no right or wrong answers and that they must answer questions as honestly as possible;
- Inform that their participation is crucial for the investigation;
- Keep questions simple, specific, and concise;
- Respondents are unaware of the research models;

In addition to the questions aiming to answer the constructs, the questionnaires contained demographic questions, such as the sector of activity, company maturity, and number of workers, among others. Two different questionnaires were designed. The first was used in the first empirical investigation, while the other was used in the last two investigations, using data from Portuguese and Chinese companies. Considering that the instruments were applied in Portuguese and Chinese companies, and the selected scales were originally in English, the process began with translation and adaptation of the scales.

The measures to be used aim to assess perception, using a Likert-style rating scale, where respondents will be asked to rate the intensity with which they agree or disagree with the statements (Saunders et al., 2016). A 7-point Likert scale was used in constructing of the questionnaire, where 1 represents totally disagree and 7 represents totally agree (2 – Disagree, 3 – Slightly disagree, 4 – Neither agree nor disagree, 5 – Agree slightly, 6 - Agree).

After constructing the questionnaires, a pilot test was carried out, to improve it. This test evaluated the absence of data recording problems, intelligibility, and unambiguity of the questions, as well as indicating suggestions or corrections to apply in the final version (Saunders et al., 2016). After this, the questionnaire was administered to a subsample to perform the pre-test. At this stage, Cronbach's alpha (α) was calculated for each factor to assess its internal reliability, which must be above 0.7 (Chen et al., 2015; Hair et al., 1998; Zhang & Zhu, 2019). If there was no Cronbach's alpha result (α) above the proposed one, the items should be reviewed, and a new pre-test performed. However, since pre-validated constructs were used in the literature, the result of this test was above the proposed one.

A Chinese student helped in translation and data collection in China.

### 3.3.2. Metrics

The data used in the investigations, were obtained through a questionnaire. This data collection method makes it possible to gather and quantify a multitude of data and to proceed to numerous correlational analysis (Saunders et al., 2009). Construct measurement was based on past literature, on tested scales in previous investigations. Table 3, 4, and 5 shows the variables present in the investigations and the sources used to obtain the items of the constructs that will be used in the questionnaires.

Table 3 - Variables, sources, and models in which they will be used (Model 1)

| Variable | Source |
|---|---|
| **Exploration** | Atuahene-Gima (2005) |
| **Exploitation** | Atuahene-Gima (2005) |
| **Sustainability** | Brown and Dacin (1997) |
| **Consumer Pressure** | Huang et al. (2016) |
| **New green product success** | Chang and Chen (2013) |
| **Green product innovation** | Chen et al. (2006); Silva et al. (2019) |

Table 4 - Variables, sources, and models in which they will be used (Model 2)

| Variable | Source |
|---|---|
| New green product success | Chen and Chang (2013); Chang and Chen (2013) |
| Corporate social responsibility | Bacinello et al. (2019) |
| Sustainable product innovation | Chen et al. (2006); Silva et al. (2019) |
| Sustainable process innovation | Silva et al. (2019) |
| Green strategic alliances | Ferreira et al. (2021b); Schilke and Cook (2013) |

Table 5 - Variables, sources, and models in which they will be used (Model 3)

| Variable | Source |
|---|---|
| Green strategic alliances | Ferreira et al. (2021b); Schilke and Cook (2013) |
| Sustainability | Bacinello et al. (2019); Brown and Dacin (1997) |
| Green organizational identity | Chang (2020); Chen (2011) |
| Green shared value | Fontoura and Coelho (2020b) |
| Green and social shared vision | Chen et al. (2015) |

The scales' items are presented in the investigation to which they belong.

### 3.3.3. Sampling

The samples will be formed of a statistically representative subset of population mentioned. It must have characteristics of the population, admitting the inference and use of a quantitative approach to test theories and hypotheses explaining the population.

The sampling method chosen for the investigation is non-probabilistic and of convenience. This type of sample is chosen because it is based on a continuous selection process, which ends when the required sample size is reached. This is widely used, including in the area of social responsibility and sustainability (El-Kassar et al., 2017; Kalyar et al., 2019; Saunders et al., 2009; Shahzad et al., 2020).

The first study focuses on Portugal, specifically on the industrial sector, while the last two studies focus on China and Portugal. The choice of these populations is related to the fact that they are two developing countries in terms of sustainable innovation and have been little studied. In fact, the literature states that different countries should be studied to understand whether marked differences in geographical, economic and market development, can impact the promotion of sustainable values and practices (Duong et al., 2021). Developed countries are usually more

sustainable and more innovative. However, many of today´s environmental problems have resulted from this economic development, which may eventually result in damage to ecological sustainability (Chang & Hung, 2021).

For the first empirical study, the sample was collected through two key respondents, in two different moments a month apart. The questionnaires were delivered by hand. Companies in each industrial district were systematically visited, and a questionnaire was left to be answered by someone from the commercial or operations department. Two weeks later, we collected the questionnaires and left another to be answered by someone from the financial department, related to the performance items.

The second and third samples were collected through internet-mediated questionnaires, specifically through Google Forms. This search management application was launched by Google, where users can search and collect information, as well as formulate questionnaires and registration forms. These questionnaires are considered self-administered, as they are filled out electronically by respondents who register their responses in Google Forms.

This data collection method allows larger and geographically dispersed sample, the administration and response are fast, and data collection is automated (Saunders et al., 2009).

Regarding the sample size required for the study, the authors' ideologies are vast, as shown below. Bentler and Chou (1987) state that the ratio must be at least 5:1 to obtain consistent parameter estimates, and the ratio must be even greater (at least 10:1) to obtain appropriate tests of statistical significance (Bentler & Chou, 1987). Thus, as proposed by the authors and to obtain statistical significance, models 1, 2, and 3 must have a minimum sample size of 70, 80, and 90, respectively. On the other hand, authors such as Kline (2011) state that the sample should consist of 200 to 250 valid cases, while Jr et al. (2009) recommend samples between 150 and 400 observations, for the use of Structural Equation Modelling. Taking a conservative stance, it is intended to follow the value proposed by Jr. et al. (2009), for whom a minimum of 200 cases is ideal, as they form a consistent basis for estimation using Structural Equation Modelling.

### 3.3.4. Data analysis methods

To meet the purposes of this investigation and test the proposed models it was necessary to use a statistical approach. Computer programs IBM SPSS Statistics (version 28) and IBM SPSS AMOS (version 28) were used to treat the data statistically.

Data were obtained through questionnaires, so nonresponse bias and common method variance should be assessed. The analysis of potential bias resulting from non-response will be evaluated by comparing the characteristics of respondents and potential non-respondents. For Armstrong

and Overton (1977), respondents who respond less promptly, or later, are like non-respondents. Thus, to assess the non-response bias, a t-test will be performed on the response means, verifying the absence of non-response bias, if there is no statistically significant difference between the means obtained in the responses of the first and last respondents (Armstrong & Overton, 1977; Hult et al., 2000).

The presence of common method bias was tested in studies 3 and 4, using the Harman test, one of the most commonly used tests (Fuller et al., 2016; Reio, 2010). To this end, exploratory factor analysis was carried out to assess whether a single factor emerges, or whether a general factor will explain most of the covariance between the measures, as performed in several studies in the area using questionnaires (Ferreira et al., 2020; Song et al., 2018).

A preliminary analysis was carried out including verification of the multivariate normality assumption (Tabachnick & Fidel, 2007) and check for the presence of outliers. Distribution was compared with the normal and the skewness and kurtosis were verified, which proved to be non-significant, as the critical ratios ranged between -1,96 and 1,96 and multivariate kurtosis was lower than 5. Even if there were small and occasional violations of normality, the maximum likelihood procedure, presented in AMOS, still generates consistent parameter estimates (Yuan & Bentler, 2007). This method is less impacted by the effects of non-normality because it functionally introduces data-based corrections to the statistical test and standard errors to counterbalance the bias presented in non-normal distributions.

### Reliability and validity

After exploratory factor analysis and confirmation of non-bias, the set of items will be submitted to confirmatory factor analysis (CFA), using a structural equation model, to verify the one-dimensionality. CFA is used when the researcher has an a priori idea, based on the literature, of the set of variables that form a factor. Confirmatory factor analysis will then be used to assess the psychometric properties of the scales and the quality of adjustment of the theoretical measurement model to the correlational structure between the observable variables (Ferreira et al., 2020; Marôco, 2014).

The reliability of the constructs guarantees that they are consistent and reproducible (Marôco, 2014). This will be measured by Cronbach's α, which varies between 0 and 1, with the internal reliability of the construct being the greater the closer the result is to 1 (Gliem & Gliem, 2003).

An analysis of factor validity will be carried out, which is evaluated by standardized factor weights - construct reliability (CR). It is considered that there is measurement reliability of each latent

variable when the relevant indicator has a value equal to or greater than 0.7 (Fornell & Larcker, 1981; Hair et al., 1998).

Additionally, we intend to verify convergent validity through the average variance extracted (AVE), as proposed by Fornell and Larcker (1981). This analysis shows whether the items of a construct present a positive correlation with each other and are valid measures for the same concept. The reference value for this indicator is equal to or greater than 0.5 so that the items in the factor converge (Hair et al., 1998; Marôco, 2014). Finally, discriminant validity will be analysed, evaluating the extent to which the indicators related to measuring different latent variables are correlated with each other, and consequently, the extent to which the independent latent variable is correlated. According to Fornell and Larcker (1981), to assure discriminant validity, the average variances extracted from the pairs of factors must be equal to or greater than the square of the correlation between these same factors.

Table 6 - Reliability and validity (model 1)

| Variable | Cronbach's α | Mean | Standard deviation | Variance | CR | AVE |
|---|---|---|---|---|---|---|
| Ambidexterity | 0.965 | 50.27 | 14.122 | 199.444 | 0.98 | 0.81 |
| Sustainability | 0.943 | 117.90 | 22.021 | 484.906 | 0.94 | 0.81 |
| New green product success | 0.967 | 19.35 | 8.482 | 71.948 | 0.97 | 0.85 |
| Green product innovation | 0.955 | 18.64 | 6.196 | 38.393 | 0.95 | 0.83 |

Table 7 - Reliability and validity of Portuguese sample (model 2)

| Variable | Cronbach's α | Mean | Standard deviation | Variance | CR | AVE |
|---|---|---|---|---|---|---|
| Corporate social responsibility | 0.984 | 101.12 | 27.551 | 759.061 | 0.99 | 0.79 |
| Green process innovation | 0.927 | 12.70 | 5.683 | 32.293 | 0.94 | 0.83 |
| Green strategic alliances | 0.968 | 70.96 | 19.996 | 399.842 | 0.99 | 0.88 |
| Green product innovation | 0.934 | 13.53 | 5.355 | 28.672 | 0.93 | 0.81 |
| New green product success | 0.968 | 24.08 | 8.174 | 66.818 | 0.97 | 0.85 |

Table 8 - Reliability and validity for Chinese sample (model 2)

| Variable | Cronbach's α | Mean | Standard deviation | Variance | CR | AVE |
|---|---|---|---|---|---|---|
| Corporate social responsibility | 0.973 | 109.59 | 18.664 | 348.355 | 0.98 | 0.73 |
| Green process innovation | 0.942 | 15.92 | 3.043 | 9.261 | 0.96 | 0.88 |
| Green strategic alliances | 0.968 | 104.17 | 16.004 | 256.125 | 0.98 | 0.77 |
| Green product innovation | 0.955 | 16.79 | 3.240 | 10.496 | 0.94 | 0.85 |
| New green product success | 0.924 | 27.50 | 4.833 | 23.357 | 0.93 | 0.71 |

Table 9 - Reliability and validity of Portuguese sample (model 3)

| Variable | Cronbach's α | Mean | Standard deviation | Variance | CR | AVE |
|---|---|---|---|---|---|---|
| Green strategic alliances | 0.968 | 70.96 | 19.996 | 399.842 | 0.99 | 0.88 |
| Sustainability | 0.964 | 101.12 | 27.551 | 759.061 | 0.99 | 0.79 |
| Green organizational identity | 0.969 | 28.60 | 9.908 | 98.162 | 0.97 | 0.84 |
| Green Shared value | 0.961 | 54.71 | 15.069 | 227.081 | 0.91 | 0.73 |
| Green and social shared vision | 0.798 | 20.03 | 6.626 | 43.899 | 0.98 | 0.82 |

Table 10 - Reliability and validity for Chinese sample (model 3)

| Variable | Cronbach's α | Mean | Standard deviation | Variance | CR | AVE |
|---|---|---|---|---|---|---|
| Green strategic alliances | 0.968 | 104.17 | 16.004 | 256.125 | 0.98 | 0.77 |
| Sustainability | 0.973 | 109.59 | 18.664 | 348.335 | 0.98 | 0.73 |
| Green organizational identity | 0.947 | 32.24 | 6.495 | 42.185 | 0.95 | 0.75 |
| Green Shared value | 0.951 | 57.28 | 11.486 | 131.938 | 0.95 | 0.83 |
| Green and social shared vision | 0.951 | 21.55 | 4.570 | 20.884 | 0.95 | 0.64 |

## Analysis of Structural Equations

Structural equation analysis is a generalized modelling technique used to test the validity of theoretical models defining hypothetical relationships between variables (Marôco, 2014). The main advantage of this technique is that it can test the validity of research models that are composed of variables that are not directly observable (Marôco, 2014). Another benefit of using structural equation analysis is that it allows simultaneous assessment of the fit of measurement models and structural models (Landis et al., 2000). Therefore, through the theory and guaranteeing the necessary conditions of model specification and identification, we will go on to estimate them.

The estimation of research models aims to find estimates for the parameters through an iterative process, which starts with an initial estimate for the parameters. Four estimation methods are widely used in the literature, namely, unweighted least squares method, generalized least squares method, maximum likelihood method, and weighted least squares method.

In this work, the maximum likelihood method was used, one of the most commonly used methods in the literature (Marôco, 2014). After estimating the models, the assessment of the goodness of fit to the data begins. In the first phase, it must be ensured that there are no "infringing" estimates. To do so, it was verified that there were no negative error variances, standardized coefficients exceeding unity, and a very high standard deviation associated with any estimated coefficient. Confirming there are no infringing estimates, the models' quality of fit to the data is assessed. This must be carried out regarding the model as a whole and the measurement and structural models.

To ensure global adjustment of the model, it is recommended to analyse measures from the three existing classes: absolute and adjustment measures, incremental adjustment measures, and parsimony adjustment measures. Regarding absolute and adjustment measures, the Root Mean Squared Error of Approximation (RMSEA) will be analysed, where a result of 0 means a perfect adjustment. Thus, the smaller this index, the better the model fits the data. According to Hair et al. (1998), the model has an acceptable fit when it presents an RMSEA between 0.04 and 0.08

Regarding the incremental adjustment measures, the Comparative Fit Index (CFI) is analysed, where a result of 0 means unadjusted and 1 means a perfect fit. Considering the range of values, some authors claim that a good fit is above 0.95 The Incremental Fit Index (IFI) and Tucker-Lewis fit Index (TLI) were also used to examine model fit. Values for TLI and CFI greater than 0.90 are accepted as valid.

Then, the quality of the measurement and structural model was observed. The first will be analysed through the measurement reliability of each observable variable, measurement reliability of each latent variable, discriminant validity, and estimated parameters. The measurement reliability of each observable variable is assessed through analysis of the coefficient of determination ($R^2$). This can vary between zero and one, considering that the model fits the data better, the closer it is to one (Marôco, 2014).

After evaluating the quality of the measurement model, the structural model was evaluated. Bearing in mind the objective, this was to evaluate the feasibility of the estimated parameter and statistical significance of each of the estimated parameters, to conclude on the consistency of the theoretical model (Ferreira et al., 2012).

Additionally, still evaluating of the structural model, the convenience of the standard deviation of each estimated parameters is evaluated (Ferreira et al., 2012). According to Ferreira et al. (2012)

if the model is considered acceptable according to all the above-mentioned analyses, we can proceed to analysis of the results.

Table 11 - Validity and reliability of the investigations (Models 1, 2 and 3)

| Empirical investigation | RMSEA | CFI | IFI | TLI |
|---|---|---|---|---|
| 1 | 0.060 | 0.924 | 0.925 | 0.923 |
| 2 (PT/CH) | 0.067/0.029 | 0.932/0.981 | 0.932/0.950 | 0.928/0.946 |
| 3 (PT/CH) | 0.055/0.034 | 0.949/0.967 | 0.949/0.967 | 0.947/0.965 |

Note: PT - Portugal; CH – China

## 3.4. THE INVESTIGATION STRATEGY

To pursue the aims of this investigation, a systematic literature review and bibliometric analysis and three research models were developed, in a complementary approach, comprising 4 articles already submitted to indexed scientific journals. Article 1 is a theoretical study, while articles 2,3, and 4 are empirical studies. This doctoral thesis aims to: provide an overview and synthesis of the relevant research on links between corporate social responsibility and leadership, identifying gaps and future research opportunities (1); investigate ambidexterity effects on green product innovation (GPI) and new green product success, considering corporate social responsibility and the moderator role of consumer pressure (2); investigate the relationship between green strategic alliances and sustainable innovation or new green product success, considering the corporate social responsibility (3); and, investigate how green strategic alliances influence green organizational identity (GOI) and sustainability performance, considering the green shared vision and green shared value (4).

In studies 2, 3, and 4 the variables used in the research hypotheses were adapted from previously tested scales, translated into Portuguese and Chinese, using back translation procedures, and measured through a seven-point Likert scale. A pre-test was conducted. Descriptive statistics, correlations, and EFA were performed using IBM SPSS Statistics (version 28). In turn, CFA and SEM were obtained through IBM SPSS AMOS (version 28).

### Investigation I

"Bibliometric analysis of leadership and social responsibility: status, development, and future research directions" was submitted to the Review of Managerial Science and is currently waiting peer evaluation. It was presented, in a previous version, at the XXXI Jornadas Hispano-Lusas de Gestión Científica de Toledo, which took place in Toledo, Spain, between February 2 and 5, 2022. This article aims to provide a comprehensive overview of trends and the current position of the academic studies on the relationship between corporate social responsibility and leadership, focusing on identifying research gaps and providing future research directions.

The data used in this investigation were derived from the Web of Science (WoS) database, through the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach. The search occurred in January 2021. Later, records were subject to analysis in VOSviewer (version 1.6.16), giving a clear insight into the topic through bibliometric mapping. The final step is an overview of the latest published articles (2018-2021), to identify gaps and future research directions.

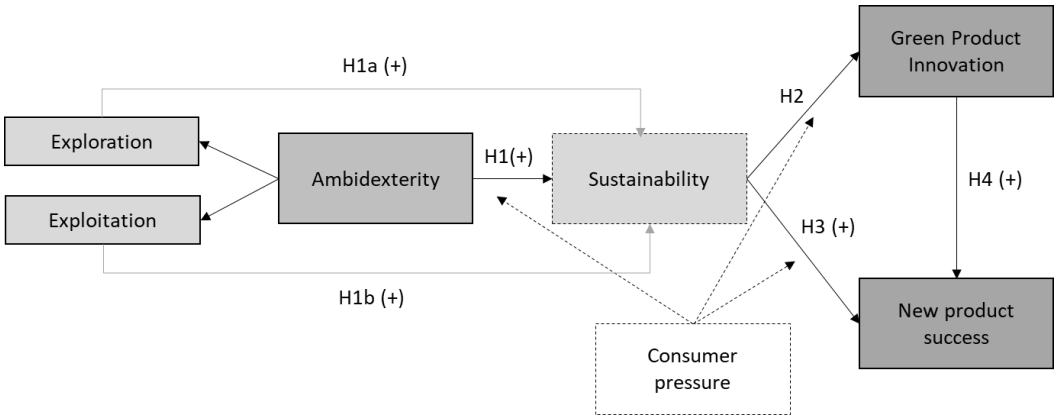
Aiming to capture the true dimension of the literature referring to greenwashing, the keyword applied in the search was “social respons*” and “leader*”. With the use of “*” it was possible to obtain several keywords related to the topic. To narrow the research and focus on the true objectives, additional filters were incorporated into WoS database. Documents were excluded considering the document type, citation databases, data rage, language, and categories. This procedure resulted in 1116 publications that were downloaded and later submitted to VOSviewer software, with the “full counting” method. To obtain the most recent gaps identified and opportunities for future research, the final step consisted of adding additional exclusion criteria: a manual review of all keywords, titles, and abstracts of the articles and excluding the ones that were not relevant to the subject of investigation, consider only articles published between 2018 and 2021, and those cited at least once. This final procedure resulted in 20 articles that were used to identify future research opportunities.

This investigation documents, firstly the evolution, relevance, and novelty of corporate social responsibility and leadership studies. Secondly, it shows the leading journals in these areas, the countries, authors, and articles contributing the most literature and knowledge dissemination. In addition, the network of keyword co-occurrences revealed hotspots that are crucial to understand advances in the field of corporate social responsibility. Finally, analysis of the latest research, identified gaps that can be used in future investigations.

### Investigation II

“Greening the business: how ambidextrous companies succeed in green innovation through sustainability” was submitted to Business Strategy and the Environment and is currently awaiting peer evaluation. It was also translated into Portuguese and adapted for presentation at the X Congreso Internacional de Emprendimiento e Innovación AFIDE´22. Additionally, this investigation was presented at the World Finance Conference, which took place in Turin, Italy, on August 1 - 3, 2022, in a previous version. This paper stresses the need to actively manage exploration and exploitation investments to enhance ambidexterity, especially when sustainability and green innovation are the expected outcomes.

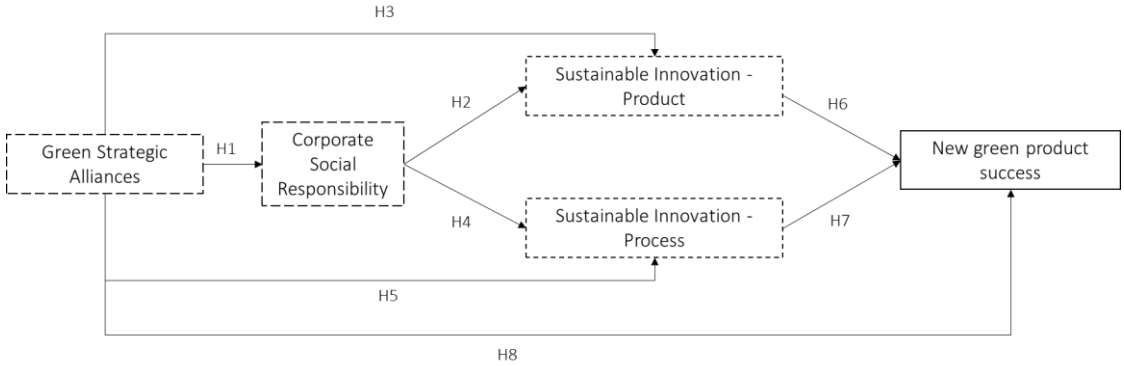
Figure 2 - Conceptual model 1




## Investigation III

"Green strategic alliances and corporate social responsibility: impact on sustainable innovation for different countries" was submitted to the Journal of Product Innovation Management and is currently awaiting peer evaluation. This article was presented at the International Conference in Accounting and Finance Innovation 2022, between June 30 and July 1, 2022, in a previous version. This article was awarded the prize for best paper in the field of finance. The main goal of this work is to analyze the effect of green strategic alliances on the green process and product innovation through corporate social responsibility.

Figure 3 - Conceptual model 2

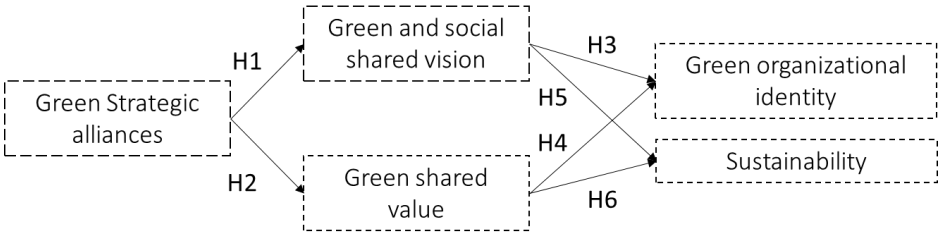



## Investigation IV

"Green organizational identity and sustainable performance: the role of green strategic alliances and their impact on sustainable shared values and vision" was submitted to Business Strategy and the Environment and is currently awaiting peer evaluation. It was also presented orally at World Finance & Banking Symposium, December 16 -17, 2022, in Miami, in a previous version. This study

aims to understand the role of green strategic alliances in the green and social shared vision and green shared value, and how this impacts a green organizational identity and sustainable performance. It focuses on two different macroeconomic environments, geographically distant but with a common foundation, Portugal, and China; both countries are in a transition phase looking for a new identity for the business market focused on sustainability.

Figure 4 - Conceptual model 3



CHAPTER 4

# HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

## A BIBLIOMETRIC ANALYSIS OF LEADERSHIP AND SOCIAL RESPONSIBILITY: STATUS, DEVELOPMENT, AND FUTURE RESEARCH DIRECTIONS

# CHAPTER 4 - A BIBLIOMETRIC ANALYSIS OF LEADERSHIP AND SOCIAL RESPONSIBILITY: STATUS, DEVELOPMENT, AND FUTURE RESEARCH DIRECTIONS


## ABSTRACT

The main objective of this research is to identify, select, synthesize, and analyze all high-quality research on Corporate Social Responsibility giving the impact of leadership while highlighting the most important topics for future research. A systematic literature review was performed based on a bibliometric analysis using the research published from 1990 to 2021 in the Web of Science (Wos). A sample of 1116 articles was examined and graphically illustrated using the VOSviewer software. The study analyzed the simultaneous occurrence of publications by year, categories, and journals, trends in keywords, bibliographic coupling, and countries and institutions.

The most important journal is the Journal of Business Ethics, and the United States of America is the leading country on these topics. The subjects should be further developed in future research, including women's leadership styles, the value chain, and cultural features in leadership and social responsibility, to predict the socially responsible behavior of employees, green entrepreneurs, and organizations.

This paper contributes to different results and perspectives, namely helping academics, managers, and society, to understand the past literature and sheds light of the future directions of the investigation in leadership and corporate social responsibility. It highlights important topics in leadership that must be studied to promote socially responsible and sustainable practices. Promotes the understanding of leadership styles and their components, and subsequent effects on social responsibility practices in companies.



**Keywords**: Corporate Social Responsibility; Leadership; Bibliometric Analysis; Narrative Review; Future Research; Sustainability

## 4.1. INTRODUCTION

The debate about corporate social responsibility or corporate sustainability began at the end of the 20th century and increased dramatically in recent years (Cancela et al., 2020; Carroll, 1999; Elkington, 1998; Hussain, Rigoni, & Orij, 2018; Javed et al., 2020). According to Montiel (2008) and Shrivastava and Addas (2014), the focus on sustainable development is analogous to addressing corporate sustainability, which represents a parallel with social responsibility. Society is increasingly concerned about the socially responsible behaviour of companies, which are nowadays considered global and emerging problems (Zhang & Zhu, 2019).

Leadership is playing an important role in the development of companies' social engagement (Hambrick, 1989; Jansen et al., 2009). Organizational managers are focused on the responsibility of executives for an organization (Jansen et al., 2009). According to Jansen et al. (2009), the style of leadership in companies is often used to explain the behaviour of executives and to address variables at the organizational level, such as structure, culture, learning, innovation, and social responsibility. Fu et al. (2020) stated that the awareness of leaders tends to encourage organizations to develop and implement actions in several strategic areas, namely CSR. Mayer et al. (2012) referred that the leadership and ethical attitudes of leaders promote different values, including integrity, responsibility, justice, and ethical behaviour in the organization and in the community. This behaviour is often associated with the attention that leaders dedicated to socially responsible matters, namely involving the attention-based view and the theory of the stakeholders (Gorski, 2017; Zhao et al., 2016).

The first leadership studies on corporate social responsibility focused on transformational leadership. Groves and LaRocca (2011) reinforced that the explanation for the predicted relationship between transformational leadership and the degree to which followers value CSR is based on social learning theory. This theory believes that social learning builds a bridge between the knowledge that is acquired and a change in behaviour. In this sense, the transformational leader, who is generally more attentive to the environment, will tend to follow and implement social responsibility, if the companies' stakeholders pressure and encourage leaders to acquire knowledge in these areas (Bandura, 1977). Subsequently, given the differences between transactional and transformational leadership styles, the studies concentrated on the research into the role of transactional leadership in CSR (Bass, 1985; Groves & LaRocca, 2011). Recent investigation has studied other styles, namely, ethical leadership (De Hoogh & Den Hartog, 2008) despotic leadership (Aronson, 2001; De Hoogh & Den Hartog, 2008), and servant leadership (Mallén Broch et al., 2020; van Dierendonck, 2011), among others.

Developments in social responsibility and stakeholder pressure, namely customers and employees, forced leaders to change old leadership practices and evolve into new styles. Thus, the relationship between leadership and CSR was studied by several authors because the attention and behaviour of leaders is an important antecedent of CSR and may explain the evolution and development of sustainability among organizations (Pasricha et al., 2018). Accordingly, Fu et al. (2020) find that leaders play an important role in social responsibility development, because leaders design, implement and supervise the corporate sustainability practices and performance.

Although many studies have produced different results and studied a range of leadership styles (De Hoogh & Den Hartog, 2008; Waldman et al., 2006b), bibliometric studies are needed to increase systematic knowledge of leadership styles regarding social responsibility, to better understand how specific leadership styles are linked to social responsibility development in organizations (De Ruiter et al., 2018; Pasricha et al., 2018). The work developed by Zhao et al. (2022) allows for increasing systematic knowledge in leadership. However, it does not dissect leadership, addressing concepts such as Top Management Teams ("TMT"), "leader" and "CEO (Chief Executive Officer)". Our study allows us to focus on leadership, components of leaders, and leadership styles and understand the advancement of this theme thus allowing us to understand what is being studied and some gaps little or no explored at all. In this sense, the primary research goal is to develop the framework for the hypothesized relationships between leadership and social responsibility, identifying the principal areas and current dynamics of leadership in social responsibility. The second objective of this research is to offer new research opportunities for future research on the relationship between leadership and CSR development. The current paper is structured into the introduction, the literature review section, the methodological procedures adopted, and the presentation of the main results and discussion. The last section provides some concluding remarks and suggests a discussion about several studies related to leadership and social responsibility.

## 4.2. LITERATURE REVIEW

The literature review of leadership and corporate social responsibility was written using the database obtained in WOS, following the criteria laid out in the methodology section.

### 4.2.1. Evolution of CSR

Despite the significant importance of social responsibility in history, this topic was formally largely a product of the 20th century, especially in the last 50 years (Carroll, 1999). Several studies are addressing the non-consensual concept of corporate social responsibility (Javed et al., 2020). Orlitzky et al. (2011) and Chin et al. (2013) reinforce that such inconsistencies have hampered the progress of science in this area. However, numerous debates held have led to greater conceptual harmonization and have impacted organizations (Chin et al., 2013; McWilliams et al., 2006; Orlitzky et al., 2011).

The first definition was postulated by Bowen: 'the obligations of business to pursue those policies, to make those decisions or to follow those lines of action which are desirable in terms of the objective and values of our society' (Bowen, 1953). Another common definition is 'status and activities concerning to it are perceived societal or, at least, stakeholder obligations' (Brown & Dacin, 1997). One of the definitions found in the literature for corporate social responsibility is 'actions that appear to further some social good, beyond the interests of the firm and that which is required by law' (McWilliams & Siegel, 2011, p. 117). Despite the several definitions, the most used is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987, p. 24).

The literature reveals that studying corporate social responsibility or sustainability is the same, given the fact that corporate social responsibility represents a parallel with sustainability (Montiel, 2008; Shrivastava & Addas, 2014). Currently, CSR is understood as an interconnected and balanced evolution of three dimensions: economic, environmental, and social (economic prosperity, environmental protection, and social equity (Bakos et al., 2017; Muñoz-Torres et al., 2018; Wu et al., 2017). This ideology of responsibility or sustainable three-dimensional evolution is based on the triple bottom line concept introduced by Elkington (1998).

The studies about CSR have been growing since 1990. Initially, studies about sustainability used agency theory, because it explains the measures that companies take to protect shareholders' interests, which was the main interest of organizations (Jensen & Meckling, 1976; Jo & Harjoto, 2011; Michelon & Parbonetti, 2012). Under the agency theory, management can promote CSR for their own benefit (Wright & Snell, 1998), which follows from agency theory, or enhances corporate profitability from a resource-based view (Russo & Fouts, 1997) or a theory of the company/strategic perspective (McWilliams & Siegel, 2011).

The main theory used is the stakeholder theory, which is focused on the contracts (relationships) between the company and its stakeholders, and it is considered a theory of society (Freeman, 1984; Hussain, Rigoni, & Orij, 2018; Jones, 1995; Ortas et al., 2017; Tricker, 2009). This theory supports studies about disclosure, corporate governance, and company performance regarding social responsibility. At present, companies that consider themselves proactive at a sustainable level and are recognized as such, are those that can create value for all interested parties and are prepared to influence the three dimensions of sustainability, through management, with and for stakeholders (Adel et al., 2019; Claro & Claro, 2014; Dias et al., 2017; Fu et al., 2020; Gnanaweera & Kunori, 2018; Gray et al., 1995; Jones, 1995; Michelon & Parbonetti, 2012).

In addition to the stakeholder theory or agency theory, other theories support CSR, such as the resource-based view, theory of the company/strategic perspective, legitimacy theory, upper echelons theory, or competitive advantage-based view. Following Michelon and Parbonetti (2012), referring to Brown and Deegan (1998) and Dowling and Pfeffer (1975), organizations seek to establish congruence between the social values associated or implied by their activities and the norms of acceptable behavior in the larger social system. If these two value systems are consistent, they foster organizational legitimacy. The legitimacy theory states that companies are operating in a constantly changing external environment, trying to ensure that they behave within the bounds and norms of society (Brown & Deegan, 1998; Santoro, 2019). So, organizational legitimacy can be considered a resource on which a company relies for survival (Branco & Rodrigues, 2008; Miska et al., 2018).

The theory of competitive advantage-based view was addressed by Jose and Lee (2007), underlying the principle that stakeholders expect companies to be environmentally responsible and hence there is a market premium for this improved environmental performance. Companies with proactive environmental programs have a competitive advantage because their improved reputation resonates favorably with stakeholder groups such as customers, employees, and the public in general (Lloret, 2016; Russo & Fouts, 1997; Tasleem et al., 2017).

### 4.2.1. CSR and leadership

Nowadays, given the growing interest in these matters, corporate leaders and employees have begun to recognize the relationships and inter-dependences of the economic, environmental, and social dimensions for satisfying the needs of today's societies, without compromising the societies of tomorrow (Lozano, 2012; WCED, 1987). Mayer et al. (2012) point out that leadership and ethical behaviors of leaders promote different values, such as integrity, responsibility, justice, and ethical behavior in the organization and the community. This behavior is often associated with the attention paid by leaders to socially responsible issues, having underlain the view based

on the attention and theory of the stakeholders (Zhao et al., 2016). In this sense, leaders' focus on sustainable issues can influence corporate social responsibility.

The strategic use of CSR begs the question of the role of the leaders in determining the potential of companies to engage in these activities. Leaders are charged with the responsibility of developing a corporate strategy and are often deeply involved in promoting the image of their respective companies through social responsibility (Waldman et al., 2006b). Moreover, despite the compelling arguments in favor of the instrumental use of CSR, corporate executives may also be inclined to adopt CSR practices for moral or ethical reasons that characterize effective leaders. Waldman et al. (2006b) referred that Jones (1995) claimed that stakeholder theory encompasses an ethical/normative dimension, implying that managers may engage in CSR because their moral or ethical values compel them to do so (De Ruiter et al., 2018; Jones, 1995; Waldman et al., 2006a).

There is a wide array of investigations exploring the importance of leadership in social responsibility, as well as the development of social responsibility through the different leadership styles. Chin et al. (2013) believe that executives' values might indeed influence corporate action, to the extent that CEOs' values configure a broad tendency to prefer certain states of affairs over others (Chin et al., 2013). Adopting the logic of upper echelons theory, the authors anticipate that differences in CEOs' political ideologies, which are manifestations of underlying values, will be concretely reflected in their companies' CSR initiatives. According to Waldman et al. (2006a) the leadership vision and leadership integrity influence the three components of CSR and predict the values that managers apply to their decision-making (Waldman et al., 2006b). Waldman et al. (2006b) investigated the relationship between components of CEO, transformational leadership, and corporate social responsibility values that managers apply to their decision-making. They suggest that components of transformational leadership apply to the larger community beyond a leader's organization, thus implying a potential connection to CSR, while the CEO's charismatic leadership did not influence CSR. The investigation regarding the involvement of leaders with CSR and the way they influence the CSR strategies adopted was also followed by Hoogh et al. (2008), who analyzed the relationship between a leader's social responsibility (moral–legal standard of conduct, internal obligation, concern for others, concern about consequences, and self-judgment) and ethical leadership behavior (in terms of morality and fairness, role clarification, and power-sharing), and their despotic leadership behavior. Additionally, Jenkins (2006) studied the influence of managerial values, the nature of Small and Medium-Sized enterprises (SME) CSR activities, and the motivation for and benefits of engaging in CSR. Both authors found that there is a positive relationship between corporate social responsibility and leadership behaviors. Thus, Hoogh (2008) showed that a leader's social responsibility was positively related to the combined

scale for ethical leadership and the underlying components of ethical leadership, namely morality and fairness, and role clarification. Nonetheless, Jenkins (2006) points out that stakeholder theory may provide a framework in which SMEs and CSR may be explored. SMEs prefer to learn through networking and from their peers, so this is a possible avenue for enhanced SME engagement in CSR. The author concluded that this would require strong leadership from individuals such as highly motivated owner-managers and exemplary companies.

In accordance to Bhattacharya et al. (2008), for CSR to be an effective internal marketing lever, it must assume four pillars: companies must maintain close contact with employees, clearly communicate the extent and details of their CSR efforts; must consider the needs of employees in CSR programs; they must fully understand the psychological mechanisms that link their CSR programs to the positive returns that are expected of their employees; and must take a decidedly top-down approach to the formulation, execution, and maintenance of its CSR programs.

## 4.3. METHODOLOGY

### 4.3.1. Research methodology

The present paper uses a two-step methodological approach to advance an in-depth understanding of the context and multilevel linkages between Leadership and Social Responsibility. Therefore, in step 1, a bibliometric analysis was performed, and in step 2, a literature review.

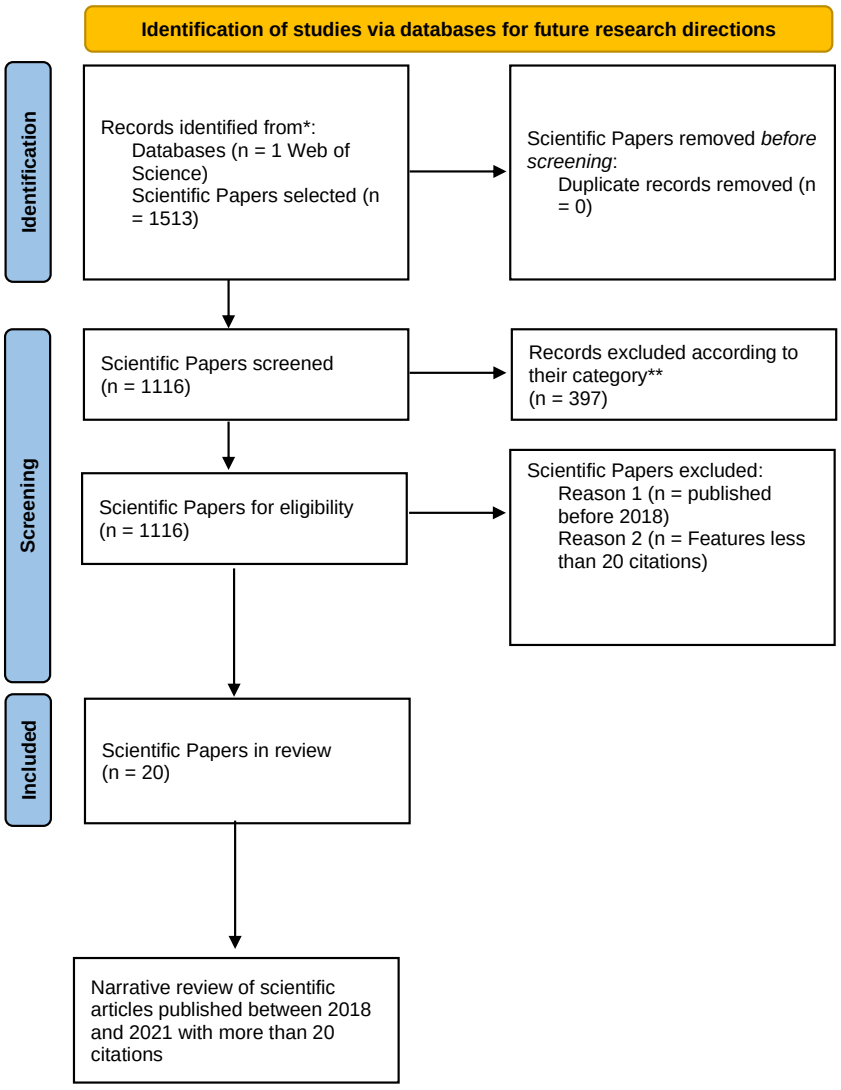
According to Vallaster et al. (2019), the bibliometric analyses indicate the evolution path of the research field, while the literature review provides an overview of the current state of the literature. The bibliometric analysis is a quantitative approach applied to capture the context of two topics: leadership and social responsibility. Besides, the literature review provided a rigorous assessment that confirmed the outcome of the bibliometric approach, ensuring that the identified patterns, including the contextual similarities or differences of Leadership and Social Responsibility found in step 1 are under the main tenets described in the literature. Additionally, the literature review has as its goal the identification of relevant possible future research, through the study of the most cited articles on the Web of Science, in the period between 2017-2021. Having initially studied the Scopus database and WOS, we choose to explore the WOS as it provided a greater amount of data for analysis. Additionally, following Archambault et al. (2009) scientific production and citations are stable and largely independent of the database used (WOS or SCOPUS) (Archambault et al., 2009).

### 4.3.2. Data collection

Following the objective of the project, we searched for papers on the Web of Science to obtain a published study map. In this sense, figure 5 through the PRISMA 2020 flow diagram demonstrated the methodology applied to searches of databases and registers.

It was possible to analyze the maps by constructing and visualizing bibliometric networks on VOSviewer 1.6.23_exe. This software was considered a powerful network analysis software tool that helps to visualize the dynamics and structures of science (Vallaster et al., 2019). Compared to other tools, VOSviewer provides maps of publications, authors, or journals, based on a co-citation network, or constructs maps of keywords based on a co-occurrence network.

Figure 5 - PRISMA 2020 flow diagram for the systematic review of Corporate Social Responsibility and Leadership




* The research began with articles on leadership and social responsibility in English, published between 1990 and 2021, presented in Science Citation Index Expanded (SCI-EXPANDED), Social Sciences Citation Index (SSCI), and Emerging Sources Citation Index (ESCI). In order to capture all of the important articles on the topics, we chose to use keywords with truncation symbols and Boolean operators. Thus, the keywords used in the database search were: “leader*” and “social responsib*”, with the Boolean operator “AND”.

**Considering the publications category on the WOS of Business, Management, Ethics, Environmental Studies, Green Sustainable Science Technology, Environmental Sciences, Economics, Education Educational Research, and Applied Psychology, insofar as these categories comprises 50 or more articles.

### 4.3.3. Initial search results

Initially, we analyzed the results of all articles (1116). The data from the WOS database studied the evolution of publications between 1990-2021.

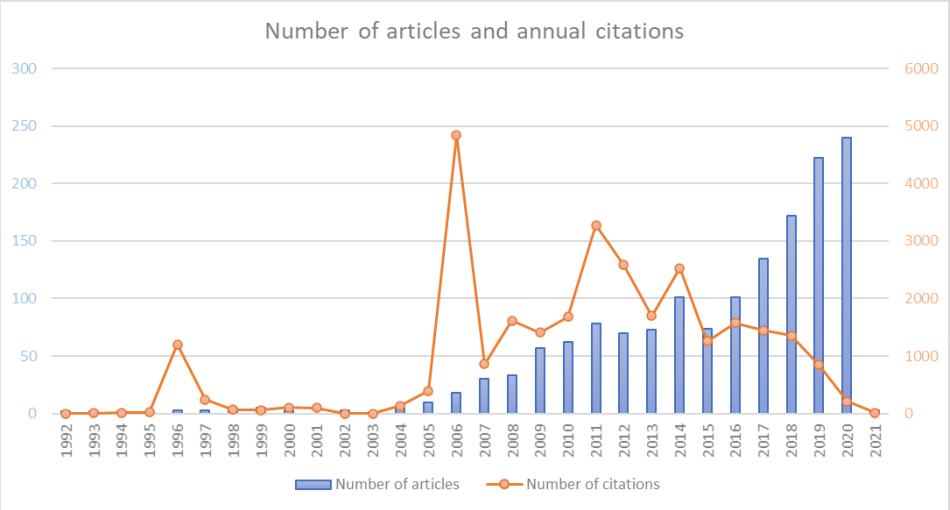
Accordingly, in the first phase, many articles were downloaded from de the WOS database, which contained references cited, authors, journals, and title denominations. In a second moment, VOSviewer software was used, to identify the area with a wide density of the most relevant areas of study concerning leadership and social responsibility.

Also, looking for relevant criteria, specifically, the most cited articles limited to the period mentioned, we carried out a systematic literature review of the 20 most cited papers in the database.

## 4.4. RESULTS AND DISCUSSION

### 4.4.1. Publications and citations by year

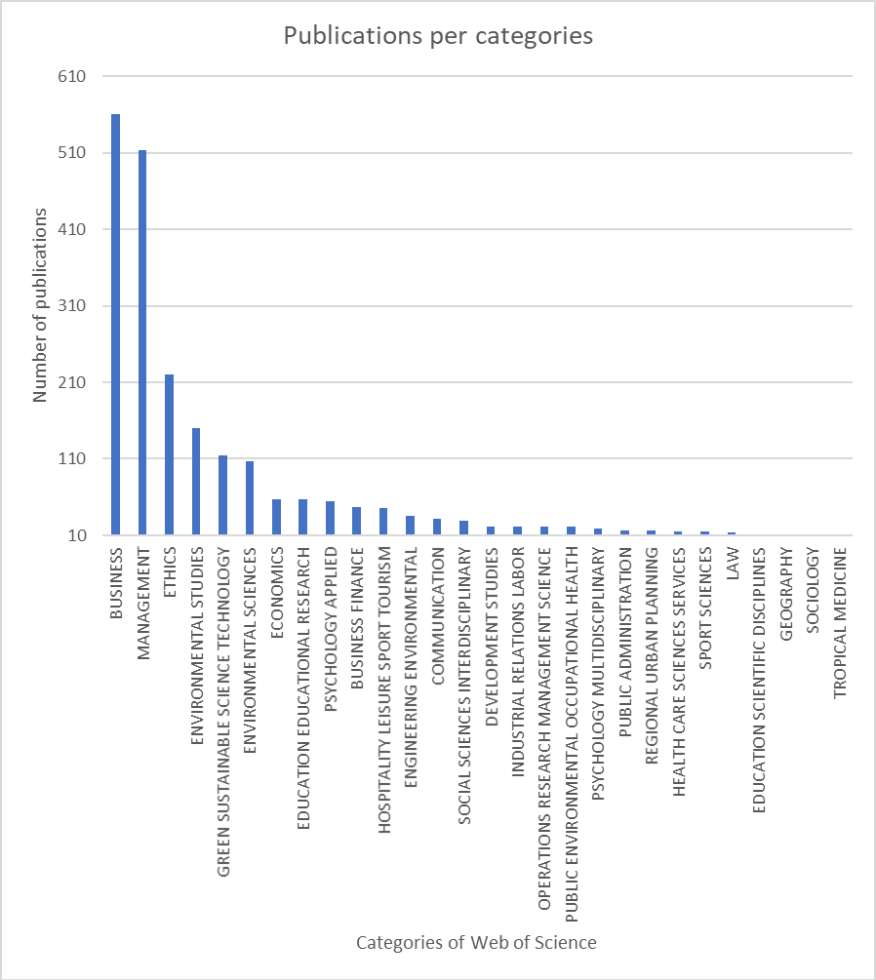
Figure 6 - Number of papers and annual citations on leadership and Social Responsibility




The analysis of the results is from 1992 to 2021, and the data was extracted on January 20, 2021. The analysis below is focused on all articles exported - a total of 1166. Figure 6 groups the annual number of publications and citations distributed across Leadership and Social Responsibility. The first publications appeared in 1992. In 2009 the number of publications peaked, and more than fifty articles were published. This event may be due to the recent importance awarded to the part that leadership plays in social responsibility, which emerged during the 20th century (Metcalf & Benn, 2013). In fact, in the last 10 years, the number of publications increased drastically, namely driven by the growing importance of sustainability and leadership themes, which were considered global and emergent problems for society and the company context. Figure 6 highlights that the field has accumulated a substantial body of knowledge over the last three decades, showing a peak of citations in 2006, when the problem of CSR emerged, and Sustainability Reporting Guidelines are published.

### 4.4.2. Publication by category of WoS

Figure 7 - Publications by Web of Science Categories on Leadership and Social Responsibility




The chart above (Figure 7) represents the categories of Web of Science with the highest number of publications. This figure presents only categories with 10 or more publications.

In this sense, the most important five categories, with 50 publications or more are Business, Management, Ethics, Environmental Studies, Green Sustainable Science Technology, Environmental Sciences, Economics, Education Research, and Psychology Applied. So, this result means that the area of studies of administration leads to increased interest in leadership and social responsibility as expected.

### 4.4.3. Publications by journals

Figure 8 - Number of publications by journals

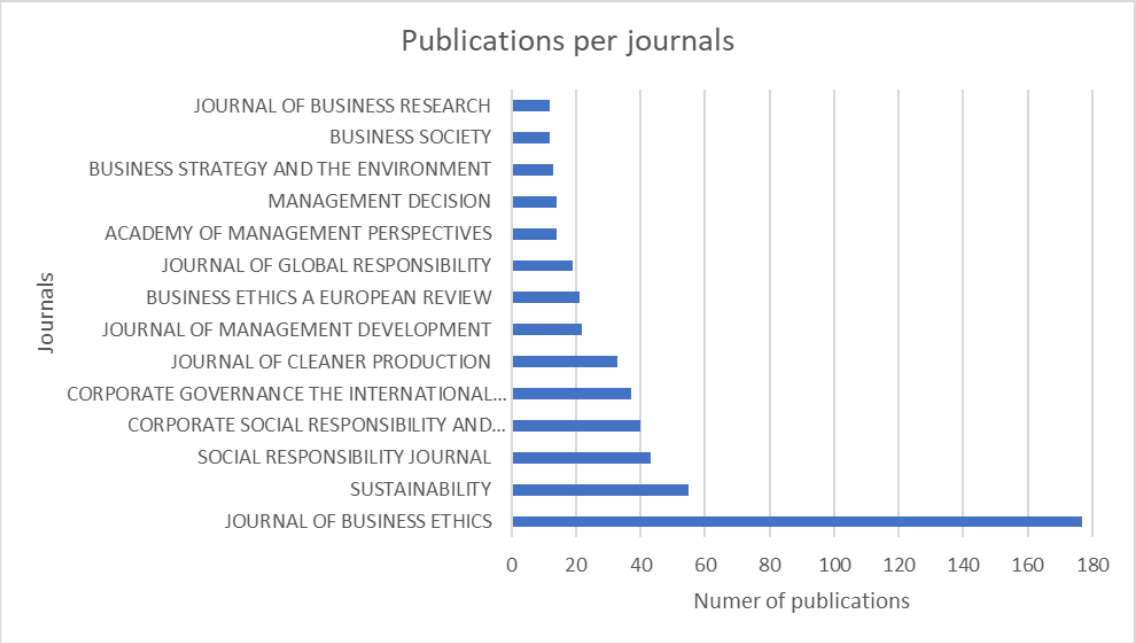



Figure 8 comprises the number of publications by journal. This figure only contains the journals with 10 or more publications in leadership and social responsibility.

The journal that has the highest number of publications is the Journal of Business Ethics. On the other hand, the journal with the lowest is the Journal of Business Research. Regarding the most popular journal, it is important to emphasize that it aims to publish articles on a wide range of topics in ethics, focusing on the last year's social responsibility.

The 26 journals under analysis, which contained 1116 papers, were listed in table 12.

Table 12 - Summary of journal productivity (1990-2021)

| Production Volume by Journal | Journals |
|---|---|
| Between 10 and 20 Published Articles | 6 |
| Between 20 and 40 Published Articles | 4 |
| Between 40 and 60 Published Articles | 3 |
| 60 or more Published Articles | 1 |

Notes: This table reports the synthesis of journals' productivity between 1990 and 2021. The source was Web of Science, and the data obtained on 20 January 2021.

### 4.4.4. The 20 most cited articles (2018 – 2021)

Table 13 presents the most cited scientific articles covering Leadership and Social Responsibility, considering the fields of Business, Management, Ethics, Environmental Studies, Green Sustainable Science Technology, Environmental Sciences, Economics, Education Educational Research, and Psychology Applied, for the period between 1990-2021.

The articles selected for the literature review are from different journals, authors, and years. This fact allows for a heterogeneous and enriching literature review to identify the main directions of past investigation and to better understand future trends and research opportunities.

Table 13 - Top 20 most cited scientific articles on leadership and social responsibility

| Title | Authors | Journal | Year | Citations |
|---|---|---|---|---|
| Strategy and society: The Link Between Competitive Advantage and CSR | Porter, Michael E.; Kramer, Mark R. | Harvard Business Review | 2006 | 3205 |
| The impact of environmental management on firm performance | Klassen, RD; McLaughlin, CP | Management Science | 1996 | 1171 |
| Small business champions for corporate social responsibility | Jenkins, Heledd | Journal of Business Ethics | 2006 | 438 |
| CSR in the mining industry: Exploring trends in social and environmental disclosure | Jenkins, H; Yakovleva, N | Journal of Cleaner Production | 2006 | 415 |
| Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility | Jo, Hoje; Harjoto, Maretno A. | Journal of Business Ethics | 2011 | 391 |
| Ethical and despotic leadership, relationships with leader's social responsibility, top management team effectiveness and subordinates' optimism: A multi-method study | De Hoogh, Annebel; Den Hartog, Deanne N. | Leadership Quarterly | 2008 | 347 |
| Cultural and leadership predictors of corporate social responsibility values of top management: a GLOBE study of 15 countries | Waldman, David A.; de Luque, Mary Sully; Washburn, Nathan; House, Robert J.; et. al. | Journal of International Business Studies | 2006 | 339 |
| At What Level (and in Whom) We Trust: Trust Across Multiple Organizational Levels | Fulmer, C. Ashley; Gelfand, Michele J. | Journal of Management | 2012 | 319 |
| Creating and Capturing Value: Strategic Corporate Social Responsibility, Resource-Based Theory, and Sustainable Competitive Advantage | McWilliams, Abagail; Siegel, Donald S. | Journal of Management | 2011 | 318 |
| Using corporate social responsibility to win the war for talent | Bhattacharya, C.; Sen, Sankar; Korschun, Daniel | Mit Sloan Management Review | 2008 | 314 |
| Components of CEO transformational leadership and corporate social responsibility | Waldman, David; Siegel, Donald; Javidan, Mansour | Journal of Management Studies | 2006 | 309 |
| Strategic Corporate Social Responsibility and Environmental Sustainability | Orlitzky, M.; Siegel, D.; Waldman, D. | Business & Society | 2011 | 293 |
| Political Ideologies of CEOs: The Influence of Executives' Values on Corporate Social Responsibility | Chin, M. K.; Hambrick, Donald C.; Trevino, Linda K. | Administrative Science Quarterly | 2013 | 292 |
| The Effects of Corporate Social Responsibility on Brand Performance: The Mediating Effect of Industrial Brand Equity and Corporate Reputation | Lai, Chi-Shiun; Chiu, Chih-Jen; Yang, Chin-Fang; Pai, Da-Chang | Journal of Business Ethics | 2010 | 263 |
| Towards better embedding sustainability into companies' systems: an analysis of voluntary corporate initiatives | Lozano, Rodrigo | Journal of Cleaner Production | 2012 | 244 |
| The effect of corporate governance on sustainability disclosure | Michelon, Giovanna; Parbonetti, Antonio | Journal of Management & Governance | 2012 | 238 |
| An urban grants economy revisited: Corporate charitable contributions in the twin cities, 1979-81, 1987-89 | Galaskiewicz, J | Administrative Science Quarterly | 1997 | 226 |
| Environmental reporting of global corporations: A content analysis based on website disclosures | Jose, Anita; Lee, Shang-Mei | Journal of Business Ethics | 2007 | 211 |
| Sustainable procurement in the United Kingdom public sector | Walker, Helen; Brammer, Stephen | Supply Chain Management | 2009 | 210 |
| The Influence of Personality Traits and Demographic Factors on Social Entrepreneurship Start-Up Intentions | Nga, Joyce Koe Hwee; Shamuganathan, Gomathi | Journal of Business Ethics | 2010 | 203 |

### 4.4.5. Keyword analyses

Figure 9 - Map of relations around "Leadership" and "Social Responsibility"

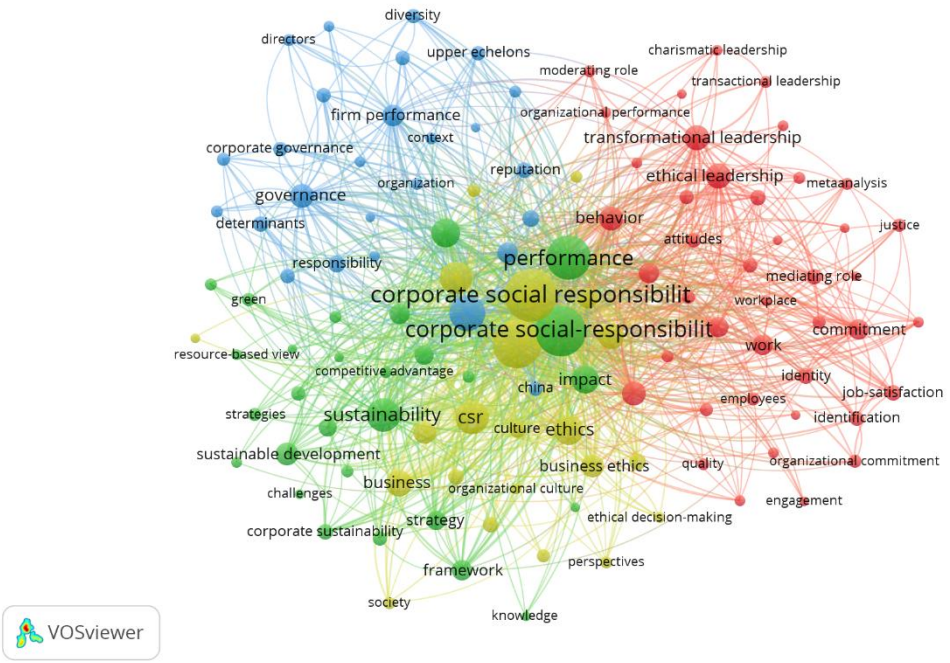



Figure 9 represents the co-occurrence grid of all keywords. Based on Web of Science registers about Leadership and Social Responsibility, the selection method was based on keywords. We imported the databases into VOSviewer software, we analyzed them using the "full counting" method, and the threshold minimum number of occurrences of keywords was 15 events, which identified 118 terms with relevance. Figure 9 shows 4 clusters, whose definition is based on the items that complement them, as shown in Table 14.

Cluster 1 (Red) is related to characteristics of leaders because it is including terms such as authentic leadership, charismatic leadership, attitudes, behavior, ethical leadership, servant leadership, transactional leadership, and transformational leadership.

Cluster 2 (Green) is called corporate performance and is composed of terms such as competitive advantage, corporate reputation, corporate sustainability, financial performance, innovation, sustainable development, and strategies. All these terms are related to the company's progress at various levels, including sustainability, innovation, and competitive advantages, among others.

Regarding cluster 3 (Blue), the main terms are directors, diversity, gender, and ownership. These terms are related to the corporate governance mechanism, which is why this cluster is called corporate governance determinants.

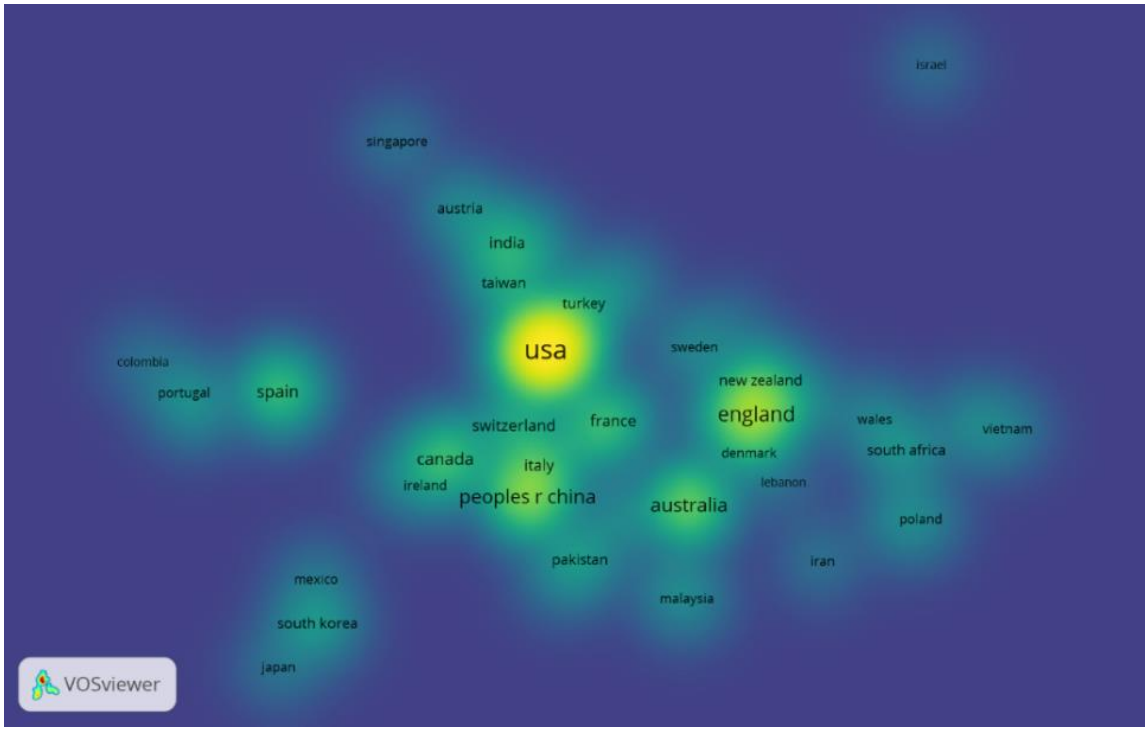
Finally, cluster 4 (Yellow) is composed of a range of concepts. However, we consider using the terms culture, education, ethics, organizational culture, society, stakeholders, and values. Thus, this cluster is composed of terms describing the corporate context and reinforces that the corporate context is an important determinant of the relationship of leadership with CSR.

Table 14 - Most relevant terms for Leadership and Social Responsibility

| Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 |
|---|---|---|---|
| Antecedents/perceptions | Challenges | China | Business |
| Attitudes/behavior/ engagement | Companies | Context | Business ethics |
| Authentic leadership | Competitive advantage | Corporate governance | Communication |
| Charismatic leadership | Corporate reputation | CSR | CSR |
| Organizational citizenship | CSR/sustainability | Determinants | Culture |
| Climate/ Ethical climate | Entrepreneurship | Directors | Education |
| Organizational commitment | Environment | Disclosure | Ethical decision-making |
| Consequences/outcomes | Financial performance | Diversity | Ethics |
| Employees | Firm | Environmental performance | Globalization |
| Ethical leadership | Framework | Firm performance | Leadership |
| Human resource management | Green | Gender | Managers |
| Identification | Impact | Legitimacy | Organizational culture |
| Job-satisfaction | Implementation | Management | Organizations |
| Leader-member Exchange | Industry | Organization | Perspectives |
| Mediating/moderating roles | Innovation | Ownership | Responsible leadership |
| Meta-analysis | Knowledge | Perspective | Social responsibility |
| Motivation | Orientation | Philanthropy | Society |
| Organizational identification | Performance | Power | Stakeholder |
| Organizational justice | Resource-based view | Reputation | Stakeholders |
| Organizational performance | Stakeholder management | Responsibility | Values |
| Personality | Stakeholder theory | United States | |
| Quality | Strategies | Upper echelons | |
| Servant leadership | Supply chain management | Women | |
| Transactional/transformational leadership | | | |
| Trust | | | |
| Work and workplace | | | |

### 4.4.6. Biographic analyses - authors

Figure 10 - Co-authored by countries




The figure above shows that the authors with the most publications are from the United States of America and England. This image also highlights the poor performance of Europe, mainly in Portugal, Spain, and Poland, in leadership and social responsibility studies. In fact, that the United States of America and England publish more studies is to be expected, since these are more developed countries in terms of social responsibility.

Figure 11 - Publications by authors

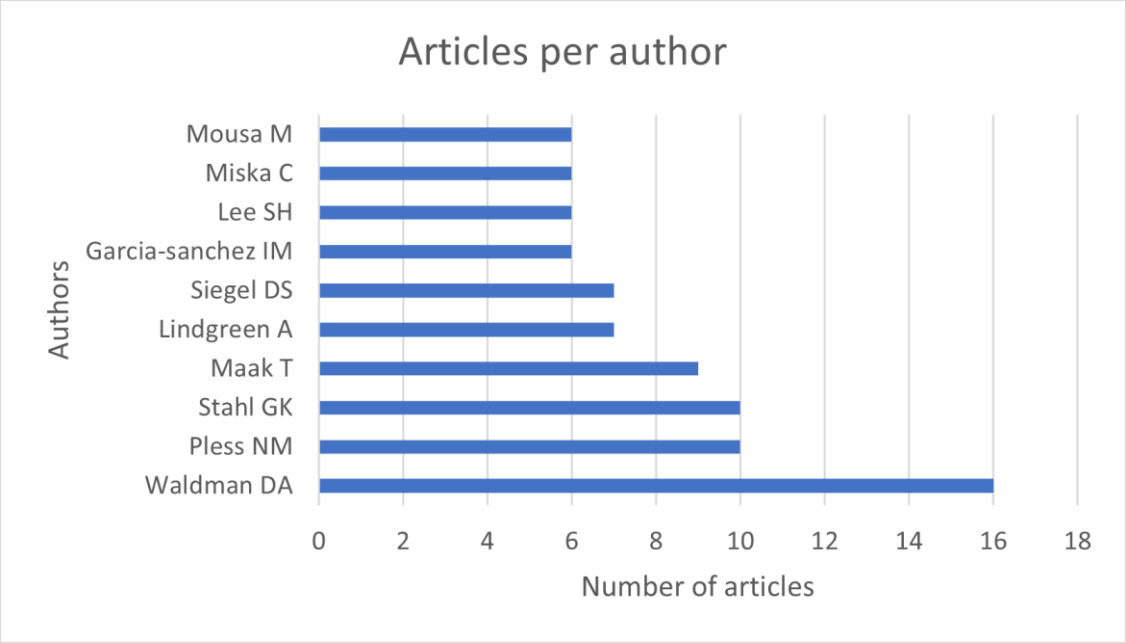



Figure 11 lists the most prolific authors. Thus, the authors with the highest number of publications in our database are Waldman DA (affiliated with Arizona State University, United States of America), followed by Pless NM (University of South Australia, Australia) and Stahl GK (Vienna University of Economics & Business, Austria). Professor Waldman has 16 publications and Pless and Stahl have 10 publications each. These results are in line with the other analysis, which demonstrated that most of the universities with the highest number of publications are in the United States of America, being this result in line with co-authorship by country and publications by the organization.

### 4.4.7. Publications analyzed by organizations

Figure 12 - Publications of organizations

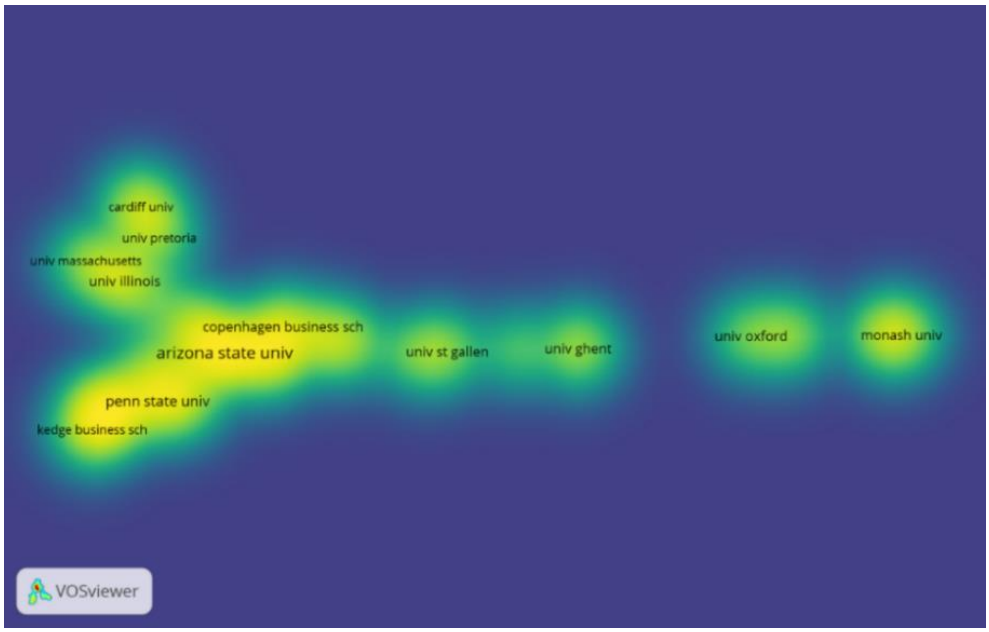
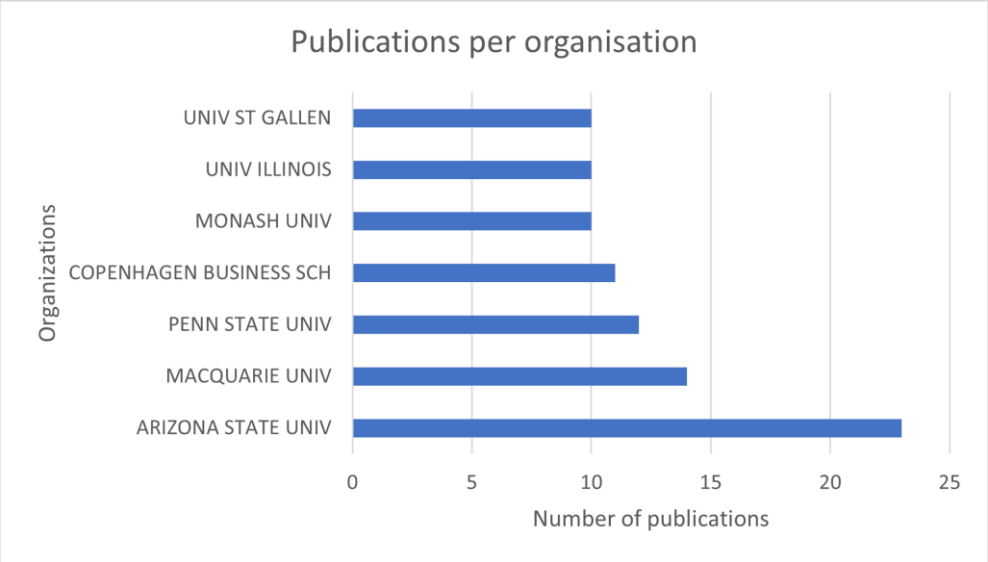



Figure 13 - Publications of organizations (1)




Figures 12 and 13 show that Arizona State University, Macquarie University, and Penn State University are the organizations that publish the most. Most of the universities with the highest number of publications are in the United States of America, being these results in line with the co-authorship by country.

## 4.5. DISCUSSION

The relationship between leadership and corporate social responsibility provides interesting research perspectives. This is especially reflected in the literature that addresses changes in society that arise from the emergence of sustainability problems (Groves & LaRocca, 2011). There are several determinants of the development of social responsibility based on leadership styles or other factors. The present research further advances the understanding of the state of the art of research in the areas of social responsibility and leadership. It also helps to identify the countries and institutions that publish most, including in journals specializing in social responsibility, especially related to leadership, and the trends in the subjects covered based on keywords. Accordingly, it is essential to identify research gaps and probable future investigation trends in this area of knowledge.

This study also contributes to different results and perspectives. Firstly, the analysis of the leading journals, authors, institutions, and keywords, demonstrates that the literature on leadership in social responsibility is growing significantly. This remarkable increase occurs after 2006, due to the debate about corporate social responsibility which began at the end of the 20th century. Secondly, the United States of America is the leading country in terms of documents and citations on this topic. On the other hand, European countries, specifically, Portugal, Spain, and Poland need to increase the number of studies. Besides, the analyses of clusters demonstrated that the main topics studied around social responsibility include the characteristics of leaders, performance, and corporate governance structure or board composition.

The narrative review of the scientific articles published between 2018 and 2021 shows that the leadership on social responsibility studies began developing in the 21st century, under the study of the effects of transformational leadership on social responsibility. Later, several authors investigated the transactional leadership style in social responsibility and transformational versus transactional leadership effects. Recently, there were several studies on despotic, ethical, or servant leadership. Given the fact that different approaches are used in these studies, namely regarding the different components of leadership or leadership styles, the results may differ or even be controversial. Therefore, this study promotes a comprehensive examination of leadership styles and their effects on social responsibility, fostering a deep understanding of the different organizational theories in place.

Understanding the past literature sheds the light on the future directions of the investigation in this field. Table 15 is the result of the content analysis of the articles most cited and published between 2018 and 2021. Content analysis of the last three years highlights existing gaps in the literature and uncovers future research opportunities. Table 15 presents the results of this content analysis and summarizes the main research questions and gaps identified in the most recent literature on the topic and the consequent research opportunities:

Table 15 - Most cited scientific articles on leadership and social responsibility (2018-2021)

| Article | Citations | Research question/Gap | Suggestions for future investigation |
|---|---|---|---|
| **Aguinis and Glavas (2019)** | 75 | - Bridge the gap between micro and macro levels of analysis in management research.<br>- Study of CSR, specifically the variability of CSR in the creation of the employee's motivation and the importance that the employees give to CSR. | - Focus on positive but also negative experiences of employees in relation to social responsibility.<br>- Study the conditions in which social responsibility can create value for the business and the well-being of employees. |
| **Hoobler et al. (2018)** | 66 | - Study multiple operationalizations of women's representation in leadership (CEOs, on top management teams, and on boards of directors) on firm performance. | - Explore the issues related to women's leadership in organizations from macro and micro perspectives carried out based on the theory of intersectionality. |
| **Raj et al. (2018)** | 58 | - Study economic, environmental, and social aspects through a common analytical model to develop an ideal solution mechanism for a sustainable supply chain. | - Study of the non-linear relationship between the retail price, environmentalism, and the levels of CSR<br>- Analysis of sustainable supply chains and supply contracts in a multi-tier environment. |
| **Galbreath (2018)** | 46 | - Study how women's consideration for stakeholder interests may influence their companies' prosocial actions (CSR). | - Explore other countries and other mediating variables, such as board processes, board tasks, or group cohesiveness.<br>- Longitudinal panel data, which would permit a closer examination of the relationship between changes in the number of women on boards, CSR, and financial performance over time. |
| **Tang et al. (2018)** | 45 | - Explore how the mechanisms underlying narcissistic vs. hubristic CEOs affect their corporate social responsibility practices in firms. | - Potential role that social information plays in influencing executive bias<br>- Effect of information from other sources, such as peer companies in the same sector, companies with comparable remuneration practices, or peer companies covered by the same group of analysts. |
| **Miska et al. (2018)** | 44 | - Drawing on institutional theory and project GLOBE, which lay down cultural practice dimensions that consistently predict sustainability practices. | - Applying alternative comparative culture structures.<br>- Examine the complex interaction between culture and formal institutional arrangements. |
| **De Roeck and Farooq (2018)** | 34 | - Study the micro-CSR to rely on a bi-factor model of CSR.<br>- Based on organizational identification and cue consistency theories, to test an integrated moderated mediation framework in which employee perception of ethical leadership moderates the mediating mechanism between their perceptions of CSR, organizational identification, and green and societal behavior. | - Longitudinal studies and experimental investigations to better ascertain the micro-level impacts of CSR.<br>- Study other mediators of the relationship between the perceptions of CSR and socially responsible behavior of employees.<br>- Include other variable moderators to better understand the relationship between CSR and the socially responsible behavior of employees. |
| **Tuan (2018)** | 30 | - Evaluation of the predictive role of corporate social responsibility on the environmental behavior of tourists.<br>- Study the effect of CSR on employee organizational citizenship behavior concerning the environment. | - Study industries considered to be less environmentally friendly (industries, manufacturing, and chemical manufacturing).<br>- Assessing social responsibility through reports on the implementation of the organization's strategy and the organizational citizenship behavior of employees towards the environment. |
| **Hur et al. (2018)** | 29 | - Examines the relationship between employee perceptions of CSR and their creativity, mediated by compassion at work and intrinsic motivation. | - Use longitudinal designs so that it provides more robust evidence.<br>- Employ a multilevel model to avoid methodological confusion.<br>- Study organizational characteristics to provide a better understanding of boundary conditions. |

Table 15 - Most cited scientific articles on leadership and social responsibility (2018-2021) (cont.)

| Article | Citations | Research question/Gap | Suggestions for future investigation |
|---|---|---|---|
| **Tong et al. (2018)** | 28 | - RQ1: What is the nature of the heterogeneity of corporate social responsibility based on the different components of corporate social responsibility in emerging countries?<br>- RQ2: What are the roles of adaptation costs and government policies to influence buyers of multinational companies to extend corporate social responsibility to suppliers in dynamic environments? | - Understand the unique distribution and the levels of implementation of social responsibility among suppliers from emerging countries.<br>- The bargaining power between buyers and suppliers can influence a buyer's CSR extension behavior towards suppliers.<br>- How governments may manage tactics in a complementary way to better promote a leader-oriented market for social responsibility management. |
| **Zhou et al. (2018)** | 28 | - Tests a new theory: after surpassing an upper limit, employee-perceived corporate social responsibility exponentially stimulates their organizational pride. | - Replicate in other contexts, sectors, regions, and cultures with different references, and explore the CSR background and possible cultural differences.<br>- Investigate the dark side of the Matthew Effect on CSR. |
| **Afsar et al. (2018)** | 27 | - The effect of CSR on employee pro-environmental behavior and the mediating effect of organizational identification and the moderating role of environmentally specific servant leadership. | - Longitudinal design and should include new variables, such as green entrepreneurship, and green HR management as drivers of green pro-environmental behavior of employees.<br>- Examine the impact of CSR on employees or customers, both on organizational identity and on pro-environmental behavior. |
| **Jacobs and Wright (2018)** | 27 | - A variety of learning theories have been integrated to propose a conceptual framework for the transfer of life skills in the development of youth based on exports. | - Use qualitative methodologies, such as interviews and case studies.<br>- Use quantitative studies to examine how experiences in the program affect young people's perceptions of their ability to make use of material outside the classroom. |
| **Stonkute et al. (2018)** | 25 | - Studied the gap in the Master of Business Administration programs in North America, Europe, Asia, and Australia and offers guidance on the challenge of integrating corporate social responsibility into management. | - Other MBA programs and other countries should be addressed.<br>- Study the extended content of the programs and not only the titles of the MBA courses and short descriptions. |
| **Serrano Archimi et al. (2018)** | 24 | - The study aimed to fill three gaps: the relationship between perceived corporate social responsibility and the cynicism of employees; trust in the company's leaders is regarded as a mediator in the relationship between corporate social responsibility and employee cynicism; disaggregated the measure of social and corporate responsibility and explored the links between that and the cynicism of employees. | - Study whether employee cynicism can be reduced by a stronger belief in corporate reliability through CSR efforts using an experimental design that better captures the actual behavior of respondents.<br>- Measure the overall attitude of cynicism, which would broaden our understanding of how perceived CSR affects the reactions of employees at work. |
| **Ong et al. (2018)** | 24 | - Developing a CSR sensitivity framework that explains how task significance, a micro-level job characteristic, may sensitize employees about their organization's macro-level CSR efforts, thereby strengthening the association between CSR and OCB. | - Develop a more reliable measure of signaling and greenwashing consistency so that we can make fairer comparisons between competing theories.<br>- Use a laboratory experiment to manipulate the CSR and the significance of the task independently to ensure that the constructions are empirically distinct.<br>- Explore more antecedents of sensitivity to CSR. |
| **Carollo and Guerci (2018)** | 23 | - Study the identity work of those managers who hold sustainability-dedicated roles in organizations and observe paradoxes of corporate sustainability at the individual level. | - Focus on the identification of various tensions and paradoxes.<br>- Study different conceptual structures or conversational identity work to analyze the influence of the social context in the construction of identity.<br>- Adopt a longitudinal study.<br>- Consider other organizational actors or focus on specific organizational configurations to determine whether sustainability causes tensions in identity work according to the context. |

Table 15 - Most cited scientific articles on leadership and social responsibility (2018-2021) (cont.)

| Article | Citations | Research question/Gap | Suggestions for future investigation |
|---|---|---|---|
| **Sharma and Jaiswal (2018)** | 23 | - The need to explore the cognitive frames of individuals at different levels in organizational interaction and what these interactions imply for managing sustainability tensions, such as in Bottom of the Pyramid (BOP) projects. | - Test these authors' models, not taking organizational leaders as a homogenous category and investigate the boundary conditions of our conceptual model in other kinds of sustainability projects.<br>- Study other contexts or industries with a strong focus on profit, and at the same time easy opportunity to create social value. |
| **Nie et al. (2018)** | 23 | - Examine the effects of socially responsible human resource management practices on female employees' turnover intentions and the moderating effect of supervisor gender on this relationship. | - Explore other societal contexts, namely generalizing the findings of this study and exploring behavior-based outcomes rated by several sources and comparing them.<br>- Use longitudinal study. |
| **Duanmu et al. (2018)** | 21 | - Study the company's pursuit of strong environmental performance as a differentiation strategy and analyze the general relationship between companies' competitive strategy and their response to heightened market competition. | - Investigate how corporations adjust their social performance when market competition loosens rather than toughens. |
| **García-Sánchez et al. (2019)** | 19 | - Examine characteristics of women that influence the quality of CSR information, since female leadership lacks studies. | - Use of different gender diversity proxies, could strengthen the question addressed: the different experiences, values, equality perceptions, and contributions of female directors.<br>- Examine the quality of assurance as a more refined measure of the reliability of CSR information and consider other possible variables that may affect the relationship between board diversity and the quality of sustainability reporting. |
| **Luu (2019)** | 18 | - Investigates the mechanisms behind employee OCBE in the hospitality industry, to respond to shifts in the research on green behavior. | - Explore organizational support for green behavior under the implementation of the green strategy reports of the organization.<br>- Investigate multiple mediation mechanisms at the individual and team or organizational level.<br>- Study the interaction between leadership practices and human resources, and green human resource management on the effects of environmentally specific servant leadership. |
| **Frederiksen (2019)** | 18 | - The paper studied a 'political settlements' approach to examining the political effects of corporate social responsibility (CSR) in developing countries. | - Political settlement literature offers a rich seam of future research in the extractive sector, specifically searching the politics and governance of natural resource extraction. |
| **Javed et al. (2020)** | 15 | - The effects of CSR on corporate reputation and financial performance: the moderating role of responsible leadership. | - Focus on the services sector (a vibrant and leading sector in Pakistan that contributes to the economy) and conduct a cross-cultural study.<br>- Use the contingency perspective on the CSR–performance relationship. |
| **Yuan et al. (2020)** | 11 | - The relation between a company's business strategy and corporate social responsibility (CSR) performance. | - Company's choice of business strategy could be a starting point for identifying opportunities to create relevant, strategic CSR that aligns with a company's competitive stance.<br>- Study the relationship between business strategy and CSR performance in other countries. |

The first investigation opportunity is the study of the leadership approaches to CSR of women. Women appear to be highly sensitive to organizational practices, namely corporate social responsibility, and environmental politics (Galbreath, 2018; García-Sánchez et al., 2019; Hoobler et al., 2018; Mallin & Michelon, 2011), but these are issues that should be further investigated.

The second opportunity is related to CSR research on the employee's side. This group of stakeholders has an important role in organizations, as it pushes for behavioral changes in companies, namely in innovation (Afsar et al., 2020; Aguinis & Glavas, 2019; De Roeck & Farooq, 2018). According to organizational learning theory, changes in companies are achieved through the creation, retention, and transfer of knowledge within an organization (Dixon et al., 2007; Kane et al., 2016). In line with this viewpoint, several authors considered that it is important to study the positive and negative experiences of employees concerning social responsibility to better understand the implementation and development of social responsibility activities in companies. Additionally, Afsar et al. (2018) suggest the study of variables such as green entrepreneurship and green human resource management as drivers of employees' green environmentally friendly behavior. Serranoarchimi et al. (2018) proposed looking into whether employee cynicism may be reduced by a greater belief in the reliability of companies developing CSR efforts. Regarding employees, De Roeck and Farooq (2018) state that it is important to study the internal mechanism of CSR practices improvement, namely, the investigation of multiple mediation mechanisms at the individual and team or organizational level.

The third opportunity is suggested by Luu (2019) reinforcing that the mechanisms behind employee organizational citizenship behavior for the environment (OCBE) in the hospitality industry are important to foster research into the shift towards green behavior. Thus, future research may explore organizational support for green behavior through the green strategy of organizations.

Lastly, since responsible leadership has emerged as a contemporary style that considers the need for multiple inputs, further studies are needed (Muzhar et al., 2020). Cultural and contextual issues determine the behavior of leaders and social responsibility development. Several studies highlighted, therefore, that it is important to replicate the study thereof in different cultural contexts (Muzhar et al., 2020; Nie et al., 2018; Tuan, 2018; Yuan et al., 2020). Those authors believe that it is important to explore the CSR and organizational performance relationship by using other important contingencies, like the personality traits of a responsible leader. According to De Roeck et al. (2018), Miska et al. (2018), and Sharma and Jaiswal (2018) future research should focus on cultural and context features, because these characteristics may influence the progress in the relationship of leaders with social responsibility (Baumgartner et al., 2017; Waldman et al., 2006b).

In sum, future research should explore several different matters:

1. Generally, as can be seen from reading the results, most studies on leadership and social responsibility focus on emerging economies and developed countries or more polluting countries (eg China). Given this limitation in the literature, a large-scale study is proposed, including comparative studies, for example across continents.
2. Despite cultural differences, governance structures, and economic development, what is certain is that we are in an era of necessary global paradigm shifts. It is essential to have environmental and social awareness and the leader and management of companies must look for mechanisms for internal performance evaluation, which will have to go far beyond the economic or financial component.
3. The literature clearly shows that matters of sustainability are much broader in western societies, and more studies are needed at the eastern level.
4. Concerning variables that are still little explored in the literature, regarding this topic, we immediately propose the leadership of women and the years in which they occupy this position. We believe that women's experience as a leader can bring advantages, or at least significant differences, to the challenges of sustainability.
5. Also, the involvement of employees with the management leadership can be an important factor to include in future work, as well as the governance structure of the company and the level of acceptance/trust by the leader. On the social responsibility side, it would be interesting to conduct interviews to understand which measures reflect the company's commitment to social well-being and sustainability, most valued by employees.
6. Regarding the methodology used, most studies related to this topic are cross-section studies, and it is necessary to broaden time horizons to understand whether the challenges posed to companies and their leadership styles, for a fairer, more dignified, more inclusive world, are being effective over time. For example, the use of methodologies such as panel data is proposed, combined, for example, with the technique of principal components analysis (PCA) or Data envelopment analysis (DEA).

## 4.6. CONTRIBUTIONS

### Theoretical contributions

Companies and markets are rapidly changing, forcing leaders to find creative and innovative solutions. In this complex and global environment of uncertainty and ambiguity, leaders must anticipate changes and function as catalysts to change their organizations for a sustainable society. However, the role of leaders in organizations must still be addressed. Besides, lack of leadership leads to less social responsibility initiatives, which are considered a new challenge for leaders that engage and direct their companies towards sustainability, encouraging people and organizations.

This investigation presents three major contributions:

1. The systematic literature review allowed the dissection of the current state of the art. Thus, this article promotes the understanding of the problem of social responsibility, specifically development, underlying theories, and organizational changes necessary for the response of companies to environmental and social components.
2. This investigation provides based on content analyses of future trends and opportunities based on the gaps e future suggestions of the authors: future studies addressing the leadership of women, the importance of the value chain, and cultural aspects. On the other hand, future research may also focus on leadership, to predict socially responsible behavior of employees, green entrepreneurship, as well as other variables that influence social responsibility, as either determinants or influencing leadership. So, the main contribution of this article is the study of a set of articles, by identifying and analyzing the past, the present, and new areas of future research.
3. In addition to the economic perspective, this paper also highlighted the role of the leader as a member of the organization and the importance of social responsibility; it focused on the evolution of the business leaders as well as their styles; it showed the evolution of articles and annual citations on leadership and social responsibility.

### Practical contributions

This study provides considerable practical implications. First, our analysis will help business leaders understand their role in developing social responsibility. Publishing patterns over time tend to indicate that company leaders have promoted some achievement of CSR and that CSR becomes an important evaluation criterion for leadership success. This finding not only provides guidance and reference for senior leaders who are interested in applying CSR in corporate strategy, but also for new leaders as they emerge. This research also provides leaders with the

knowledge of stakeholders that can support them in the development of sustainable practices, namely managers who well know the levels of financial corporate performance. Furthermore, it allows informing the state of the art so that potential investors and regulators perceive the pressure that is necessary for social responsibility practices to be effective in the search for a cleaner and more equitable global society.

Currently, scientific mapping is considered a useful complement for research synthesis and meta-analysis. However, the review methods are not replaced, given the fact that they offer low inference quality assessments and findings integrated into a body of literature. In this sense, this work has some limitations. The first one is related to the collection of data, which is drawn from a single database, the WoS. A multisource method likening different databases might give a broad overview of the investigation in this field and a better comprehension of the main differences and implications of using different databases. Based on the data, another limitation is the results obtained in the year 2021, since the data was collected until January only. Therefore, the information concerning this year should be carefully addressed, given the period covered. However, a set of excellent publications at the beginning of 2021 made this option unavoidable. Additionally, even if only the highest quality papers were considered, other works such as conference papers, book chapters, or dissertations may give precious clues about future research trends. The last limitation is related to the studies included in our database, which despite covering three decades, the analysis was made as a whole, and it could be interesting to analyze it decade by decade or consider different time cycles, based on remarkable world events.

CHAPTER 5

# HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

## GREENING THE BUSINESS: HOW AMBIDEXTROUS COMPANIES SUCCEED IN GREEN INNOVATION THROUGH SUSTAINABILITY

# CHAPTER 5 - GREENING THE BUSINESS: HOW AMBIDEXTROUS COMPANIES SUCCEED IN GREEN INNOVATION THROUGH SUSTAINABILITY


## ABSTRACT

This paper seeks to investigate the impact of ambidexterity (exploration and exploitation) on green product innovation and the success of new products through the effects of sustainability, considering the moderating role of customer pressure. This research proposes a theoretical model that was tested using structural equation modelling and a multigroup analysis to understand the moderating role of customer pressure. A 23-item questionnaire was developed to explore the proposed relationships, applied in two different moments, and answered by two other critical respondents from each company. At the end of the second collection moment, 336 valid questionnaires were collected from a sample of industrial SMEs in Portugal. The results show a positive influence of ambidexterity on sustainability and, therefore, on new product success and green product innovation. In addition, green product innovation increases the success of new products due to the growing demand for more sustainable products. Furthermore, the chain of effects between ambidexterity and further product success was strengthened when customer pressure was higher.

This study stresses the need to actively manage exploration and exploitation investments to enhance ambidexterity, especially when sustainability and green innovation are the expected outcomes. The originality of this research is related to the contributions of hierarchical dynamic capabilities, combining and balancing exploration and exploitation, to produce successful ambidextrous companies in sustainability and green strategies.



**Keywords:** Ambidexterity; Sustainability; Green Product Innovation; New Green Product Success; Customer Pressure

## 5.1. INTRODUCTION

The debate about ambidexterity is recent and began at the end of the 21st century, and increased in recent years (Raisch & Birkinshaw, 2008). However, there is a consensus in the literature on ambidexterity regarding the virtuous performance-improving aspects of having an ambidextrous organization, both short- and long-term perspectives (Raisch & Birkinshaw, 2008). Ambidexterity comprises balancing exploration and exploitation to achieve superior performance and enhanced competitiveness. According to Song et al. (2018), companies face environmental and social pressures. Consequently, companies increase their organizational efforts and resources to develop green products and achieve sustainable development since sustainability practices can improve their performance (Song et al., 2018).

Several studies dissect the role of exploration and exploitation in social responsibility (Jakhar et al., 2020). In strategic management, resources that give a company a competitive advantage are defined as dynamic capabilities (Teece et al., 1997) that influence innovation (de Moura & Saroli, 2021). According to de Moura and Saroli (2021), sustainable innovation is possible by renewing resources and internal and external competencies. Crossan et al. (1999) have conceptualized exploration and exploitation capabilities as dynamic capabilities. According to them, companies that can respond to a need or seize change opportunities have dynamic capabilities (Crossan et al., 1999). The relationship between dynamic capabilities and ambidexterity has not yet been sufficiently examined in the literature (Jurksiene & Pundziene, 2016). Previous research has related ambidexterity and DCs, focusing on the macro relationship. More recently, authors have sought to fit ambidexterity literature strands into the three DC pillars (sense, seizing, and reconfiguring) proposed by Teece (2007). Recently, some investigations studied the balancing of exploration and exploitation to ensure increased performance, but the relationship of this balancing on companies' sustainable innovation performance was not explored (Koryak et al., 2018; Maletič et al., 2016, 2018; Xing et al., 2019b).

Past literature shows that several authors unveil the contradictory tensions of managing exploration and exploitation and view organizational ambidexterity as a high-level dynamic capability (O'Reilly & Tushman, 2008).

Regarding corporate social responsibility, these thematic began at the end of the 20th century and increased in recent years (Zhang & Zhu, 2019). Researchers and practitioners are paying growing attention to environmental, social, and economic concerns because there is pressure from market customers, government, and other stakeholders (Cancela et al., 2020; Elkington, 1998; Hussain, Rigoni, & Orij, 2018; Zhang & Zhu, 2019). Within the environmental sustainability literature, research efforts have mainly explored the close dimensions of the concept, including

the internal and external driving forces that encourage companies to enhance their environmental sustainability (Hussain, Rigoni, & Cavezzali, 2018) and the best practices that are deployed to address green goals (Niu et al., 2017); and to create competitive advantage (López et al., 2007). The field studies on sustainability are critical as companies are currently looking for long-term sustainability. They are obliged to create economic value by reducing various environmental and social problems associated with their current activity (Marin et al., 2017). The concept of corporate social responsibility does not have a single definition. Still, the most common is the one postulated by the World Commission on Environment and Development (WCED): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 24).

Recent studies have already considered several drivers of social responsibility, namely mechanisms of corporate governance (Cancela et al., 2020; Hussain, Rigoni, & Orij, 2018), leadership (Fu et al., 2020; Javed et al., 2020; Liao & Zhang, 2020), organizational learning (Osagie et al., 2020) among others. However, studies are still lacking in these areas, especially considering the effects of ambidexterity (Koryak et al., 2018; Maletič et al., 2016; Xing et al., 2019a). The connection between DCs and ambidexterity has not yet been appropriately examined in past investigations (Jurksiene & Pundziene, 2016). Prior research in this field has linked ambidexterity and DCs, highlighting the macro relationship. Furthermore, few studies have focused on the relationship between ambidexterity (combination of exploration and exploitation) and sustainability (Ciasullo et al., 2020; Shafique et al., 2021). Khan et al. (2021) stressed that the impact of sustainability activities is still underexplored, particularly the effects of the factors that can drive green sustainability trends (de Moura & Saroli, 2021; Vézina et al., 2019). To fill these gaps, this investigation aims to study the impact of ambidexterity on green product innovation (GPI) and the success of new green products (NGPS) through the effects of sustainability and the moderating role of customer pressure. This study is innovative because it is derived from hierarchical dynamic capabilities; ambidexterity is used as a second-order variable, based on the balancing of exploration and exploitation, to produce superior sustainability, leading to sustainable innovation and the success of new green products. Our empirical methodology uses data obtained from a sample of the industrial sector, with 336 valid answers from Portuguese companies. Data collection is based on a structured questionnaire, and structural equation modelling was used to test the proposed hypotheses.

The article is organized as follows: Section 2 presents the literature review and develops the hypotheses; section 3 describes the methodological procedures and discusses the results. The last section consists of the final remarks, limitations, contributions, and suggestions for future research.

## 5.1. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

### 5.1.1. Theory of hierarchical dynamic capabilities

The dynamic capabilities perspective aims to understand companies' capabilities to sustain competitive advantages. The literature on DC attempts to explain how capabilities configure companies' resources by responding to or creating environmental change (Teece et al., 1997). The business with green dynamic capabilities has a high affinity toward adopting a new sustainable and innovative solution for their customers, henceforth, rising green innovation (Jiang et al., 2018).

There are three categories of definitions that emphasize different aspects of dynamic capabilities. The first type of definition focuses on the presence of emotional and environmental conditions to develop dynamic capabilities (Teece, 2007). The second category of dynamic capabilities emphasizes the outcomes of companies' dynamic capabilities (Collis, 1994). Lastly, the third category associates dynamic capabilities with companies' activities to make them active (Zollo & Winter, 2002). In addition to the existing literature, Zhang (2014) defines dynamic capabilities as the creative capacities of companies to dynamically renew and improve resource bases and functional activities in response to environmental changes. This study is focused on the theory of hierarchy of dynamic capabilities, which has been broadly accepted in the literature to distinguish between first-order dynamic capabilities operating on companies' resource bases and second-order dynamic capabilities controlling first-order dynamic capabilities (Ambrosini & Bowman, 2009). The most common dynamic capability in the literature is first-order dynamic capabilities that enable companies to transform existing resource bases to enhance competitive advantages and address changing environments (Zhang, 2014). This author claimed that first-order dynamic capabilities are embedded in companies' development and are essential for companies to sustain first-order dynamic capabilities. Second-order dynamic capabilities are associated with companies' changes to existing sets of first-order dynamic capabilities. First-order dynamic capabilities need to be renewed when perceived as insufficient to impact companies' resource bases (Zhang, 2014).

Following Vézina et al. (2019), the two main challenges socially engaged companies face when developing a corporate social innovation are preserving and exploiting an accumulated base of resources and competencies and developing new ones. In this sense, it is precisely these challenges that the dynamic capabilities approach is built (Choi et al., 2019; Vézina et al., 2019). According to De Moura and Saroli (2021), companies need to survive by improving their dynamic resources to ensure competitiveness. Their position in the market is retained by adapting to customers' requirements and overcoming the numerous barriers they face in their operations.

Several studies showed that dynamic capabilities are essential for social and environmental innovation, for example, corporate social responsibility practices (Choi et al., 2019; Vézina et al., 2019). The theory of hierarchical dynamic capabilities may explain the impact of ambidexterity on sustainability, specifically on new green product success and green product innovation. It studies the first-order dynamic capabilities (exploration and exploitation) to impact companies' resource bases appropriately. The concept of ambidexterity implies a combination of organizational routines, resources, or abilities that, to some extent, may contradict each other: organizational efficiency *versus* organizational flexibility (Bierly et al., 2009). Exploration is the development of new skills or products, involving activities such as research, product and process modifications, risky actions, experimentation, flexibility, discovery, and innovation (March, 1991). Exploitation is related to investments for improving products or services and includes refinement, production, efficiency, selection, implementation, and execution (March, 1991). The literature reveals that the balance between exploration and exploitation can enhance several competitive advantages, namely sustainable competitive advantage. The search for sustainable competitive advantages is based on developing sustainable practices in companies and may be improved when there is ambidexterity (Jakhar et al., 2020) Besides the hierarchical dynamic capability theory, the ties between dynamic capabilities and other variables considered in this investigation are supported on sound theoretical grounds, according to Table 16.

Table 16 - Construct-linked theories and relevant literature

| THEORY | CONSTRUCT | REFERENCES |
|---|---|---|
| **Hierarchical dynamic capabilities** | Social image, corporate culture, stakeholder management, sustainability performance, innovation | Inigo and Albareda (2019); Islam et al. (2019); Song et al. (2019) |
| **Stakeholders' theory** | Green product innovation, green process innovation, brand equity, job satisfaction, green product success, innovative sustainability, environmental innovation, corporate sustainable development, stakeholder pressures, organizational learning, green innovation | Khan et al. (2021); Lee and Raschke (2020); Liao and Zhang (2020); Zhang and Zhu (2019) |
| **Resource-based view** | Green innovation, corporate environmental ethics, innovation, competitive advantage, company's performance, innovation capability, exploration, exploitation, entrepreneurial orientation, green product innovation, new green product success, company competitiveness | Ferreira et al. (2020); Huang and Chen (2022); Marin et al. (2017) |

## 5.2. SUSTAINABILITY

Companies now realize that to be socially legitimate, they must earn the respect of their business partners, customers, and society (Hussain, Rigoni, & Cavezzali, 2018). It is essential to continuously innovate (Ardito et al., 2019) and seek to combine the logic of action of all stakeholders, namely increasingly informed customers, and demanding business partners (Nason et al., 2018). They require a broader understanding of the interdependence between various stakeholders (Goettsche et al., 2016), directly or indirectly linked to their business. Sustainability is currently a strategic approach combining short-term survival and long-term socially responsible development. To this end, companies strive for the alignment of their goals with the three dimensions of sustainability, as they increasingly consider environmental and social issues and no longer focus only on creating economic value (Gallego-Álvarez et al., 2011; Muñoz-Torres et al., 2018; Svensson et al., 2018; Wu et al., 2017).

Sustainability looks for self-regulation that searches for interconnected and balanced evolution of three dimensions: economic, environmental, and social (economic prosperity, environmental protection, and social equity (Wu et al., 2017; Muñoz-Torres et al., 2018). This ideology of sustainable three-dimensional evolution is based on Elkington's triple bottom line concept (Elkington, 1998). Companies that consider themselves proactive at a sustainable level and are recognized can create value for all interested parties and are prepared to influence the three dimensions of sustainability, through management, with and for stakeholders (Fu et al., 2020). Sustainability is an integral part of companies' lives and is vital for businesses across all industries (Sim & Kim, 2021).

The increased pressure from stakeholders to implement environmental management initiatives has become a rule of business for companies across industries and geography to engage in the green process product development (Chen & Chang, 2013; Song et al., 2018;). It calls upon the companies to rely on intangible resources to address the intricacy of environmental sustainability issues and respond in a manner to handle varied stakeholder pressures (Dang et al., 2019).

### Ambidexterity and Sustainability

The ability to achieve ambidexterity has been said to lie at the heart of corporate dynamic capabilities (Raisch & Birkinshaw, 2008). As a result, ambidexterity can be an integral concept to denote a company's dual orientation of integrating external and internal knowledge (O'Reilly & Tushman, 2008). Companies that focus only on one of the DC approaches (exploration or exploitation) may risk falling below the recommended optimal balance. Thus, companies should balance these two capabilities to achieve more excellent performance and, consequently,

competitive advantage (Ciasullo et al., 2020; Zhang & Zhu, 2019). However, balancing these two activities may be difficult (Brix, 2020; Koryak et al., 2018). Exploration practices show a systematic way of integrating the sustainability of products and processes (Maletič et al., 2016), ensuring compliance with quality standards. Consumer conscience pressures companies to change their products and processes. Exploration practices seek to identify the emerging needs and wants of stakeholders.

Several authors recognized that it is vital for companies to adopt different types of ambidextrous strategies, where they can be effectively engaged in exploration and exploitation, sequentially or simultaneously (Kotabe & Kothari, 2016). Kotabe and Kothari (2016) suggested that companies continually modify and build unique capabilities to incorporate both modes of strategic development (exploration and exploitation) for sustainable competitive advantage. According to Raisch and Birkinshaw (2008), the ability to achieve ambidexterity lies at the centre of a company's dynamic capabilities. Therefore, ambidexterity may express an organization's dual orientation of balancing external and internal learning to increase the knowledge stock and knowledge renovation (O'Reilly & Tushman, 2008): combining possession and acquisition of capabilities; mixing short and long-term orientations, and considering environmental issues and pressures (Kotabe & Kothari, 2016).

For innovative companies, this boils down to the fundamental problem of taking advantage of the exploration of available options to secure current profits while exploring new opportunities to safeguard future revenues. Different structural conditions and arrangements are needed to integrate both organizational structures that allow the combination of these tasks (Ciasullo et al., 2020). Other authors recognize that the performance of companies can be enhanced with increased ambidexterity or increased specialization in exploration-based or exploitation-based innovations (Zhang & Zhu, 2019).

Ciasullo et al. (2020) found a positive impact of structural ambidexterity on sustainability objectives. These authors highlighted that co-participative cooperation and co-creative collaboration at a strategic level could leverage and reinforce an innovative organizational culture, finally catching up with sustainability-oriented innovations. Shafique et al. (2021) stated that sustainability is an important context that helps companies meet social expectations and catalyse the effectiveness of organizational ambidexterity. Lee and Raschke (2020) showed that there is continuous practical sustainability in companies where managers exploit existing processes while exploring sustainability innovations for future activities to keep pace with their expectations and society's changing expectations regarding environmental issues. Jakhar et al. (2020) have demonstrated that exposure to exploitative/exploratory innovative capabilities

triggers sustainable behaviours in the short and long term. Following the literature, hypothesis 1 is proposed.

H1: There is a positive impact of ambidexterity on sustainability.

### The roles of exploration and exploitation

Jakhar et al. (2020) pointed out that companies that develop their capabilities in the exploitative principles of refinement, efficiency, and implementation respond to the stakeholder pressure in the same way, even if exploration is optimally functional.

Several studies show that research on corporate sustainability can be biased, as economic results still prevail over environmental and social effects and impacts (Maletič et al., 2016). Learning has long been recognized as an imperative characteristic that allows organizations to remain continuously relevant (March, 1991). Such relevancy is also echoed in sustainability and cleaner production and especially in strategic sustainability behaviour and innovation practices (Funk et al., 2019). The proactive search to become an ambidextrous organization is regarded as imperative. One argument is that continuous adaptation and innovation are essential to respond to imposed changes, for example, climate change and resource scarcity (Brix, 2020).

Nonetheless, companies that have been exposed to exploratory principles of search, variation, and risk-taking respond to stakeholder pressures by venturing into sustainable practices, with a long-term focus on profit-making, a typical characteristic of exploratory activities. Solís-Molina et al. (2018) have recognized that a company performs better with ambidexterity in some cases. However, the authors emphasize that specialization in exploration or exploitation can benefit in the long run-in other cases. To assess the effect of exploration and exploitation separately, their products are tested individually (Jakhar et al., 2020; Maletič et al., 2016).

H1a: There is a positive impact of exploration on sustainability.

H1b: There is a positive impact of exploitation on sustainability.

### Sustainability and Green product innovation

The debate on sustainable innovation began in the late 90s, suggesting modifications in the existing industry by developing innovative products and processes that respond to growing environmental rules and the greater scrutiny of society on environmental issues (Tantayanubutr & Panjakajornsak, 2017). In this sense, sustainable innovation features the ‘development of new products, processes, services, and technologies that contribute to the development and well-being of human needs and institutions while respecting the world's natural resources and regenerative capacit’ (Tello & Yoon, 2008, p. 165). According to Chang (2011), green innovation allows companies to develop new markets, boost their image, and extend their competitive

advantage while satisfying stakeholders' environmental protection requests. Bacinello et al. (2019) considered that sustainable innovation is a process in which sustainability considerations are part of the company's systems.

Sustainable innovation was divided into processes and products because they comprise different activities, producing other changes and results (García-Piqueres & García-Ramos, 2019). Green process innovation reduces costs by driving resource efficiency, while green product innovation creates profits by selling green products at a premium price (Christmann, 2000). Therefore, green product innovation uses cleaner materials and product technologies to (re)design products and packaging (Wong et al., 2020). The existing literature addresses sustainable innovation by integrating process and product (Ardito et al., 2019). However, given the above, the process and the product involve different activities, so it is believed that they should be studied separately.

Adams et al. (2016) pointed out a great need to develop and distribute a sustainable innovation culture. In this context associated with the triple bottom line concept (Elkington, 1998), the sustainable innovation approach, including green product innovation, has three main dimensions. Luo and Du (2015) demonstrated that companies with proactive activities in the social responsibility field have a greater capacity to innovate at the product level. In the opposite direction, Gallego-Álvarez et al. (2011) showed that the relationship between social responsibility and innovation is statistically significant and negative in Spain. Husted and Allen (2007) suggested that sustainability may induce several advantages in companies, namely innovation and green innovation. Accordingly, several authors tested the positive relationship between sustainability and product and process innovation (McWilliams & Siegel, 2000). Cheng (2020) demonstrated that sustainability orientation promotes green innovation performance in the same direction. The author suggests that a company's process innovation is closely linked to its product innovation.

Wong and Tong (2012) displays that green process innovation helps companies succeed in producing new green products, developing a competitive advantage. Also, Chang and Hung (2021) suggest that process innovation can help companies to improve the quality of their products, expand the emergence of products or create entirely new products, thus increasing their market share. Therefore, Chen and Chang (2013) state that the development of green dynamic capabilities is a valuable starting point in improving green product development performance.

Considering the literature on the relationship between sustainability and innovation, the following hypothesis was formulated:

H2: There is an impact of sustainability on green product innovation.

### Sustainability and New product success

Sustainable innovation represents an opportunity to raise the price of green products and improve the company's image by creating a marketplace and gaining competitive advantages and other benefits (Iranmanesh et al., 2019).

The success of a new green product refers to (i) the ecology of the product in terms of its compliance with legal and non-statutory green requirements; (ii) the financial performance of the product and its contribution to financial results compared to competing products; and (iii) respondents' opinions on the success of the new products (Wong, 2013). The success of a new green product is a recent and emerging concept whose definition is based on changes in development and design, turning existing products into green products that can meet the needs of customers (Song et al., 2018; Wong, 2013). Several authors reinforced these studies about developing new green products, showing that they are formed due to the pressure from stakeholders, who are increasingly focused on social responsibility (Muñoz-Pascual et al., 2019).

Song et al. (2018) assumed that sustainability activities promote the development of a new successful product. However, in the empirical work carried out, the results indicated that sustainability has no significant effect on the success of new green products. According to Song et al. (2018) few researchers have studied how the green requirement and knowledge-sharing can positively and significantly affect new green product success. In this sense, Ferreira et al. (2020) reinforced that future research should investigate further product success as an innovation outcome. Other studies demonstrated that the success of new products remains the reward for sustainable innovation investments (Dogbe et al., 2021).

Even if a few studies have empirically investigated the influence of sustainability on new product success, most theoretical propositions support this positive impact (Dogbe et al., 2021; Ferreira et al., 2021a; Song & Yu, 2018). Therefore, the following hypothesis is proposed:

H3: There is a positive impact of sustainability on new product success.

### Green product innovation and new product success

Wong (2013) highlighted that sustainable product innovation has a positive impact on the success of a new green product. Maccioni et al. (2019) uphold those sustainable products may enhance environmental performance. However, the extent to which innovative products lead to success is still unclear and needs further empirical investigation.

Amongst factors that influence new product success (NPS) have been identified as product quality, innovativeness, functionality, colour, and prestige associated with a brand (Wong, 2013). This author concludes that environmental turbulence has a mixed effect on new product success.

It could strongly and negatively affect some companies but may have no negative impact on the recent product success of others.

The relationship between sustainable product innovation and the success of a new green product is well identified in the literature (Huang & Chen, 2022) but little studied in empirical terms. Thus, the following research hypothesis is proposed:

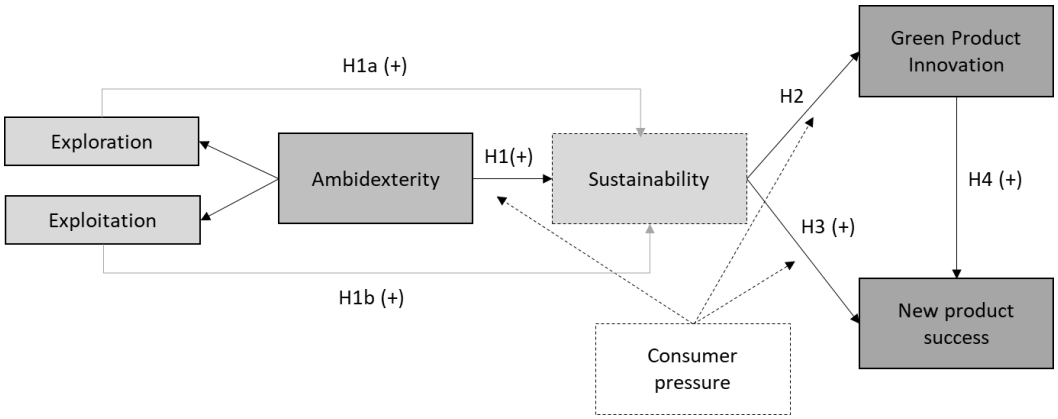
**H4: There is a positive impact of green product innovation on new product success.**

### The moderating role of customer pressure

Customer pressure (CP) is an essential driver for sustainability development. According to Huang et al. (2016) customer pressure is pressure coming from downstream customers. Customers' awareness of sustainability issues is significantly increasing, and a new "green consciousness" is bringing additional tension to all these industries known for their highly polluting impacts (White et al., 2017). This change in customer behaviour encourages companies to improve their environmental performance (Sim & Kim, 2021). Companies devote greater attention to understanding and dealing better with the customer pressure effect by acknowledging their environmental responsibilities. As the primary driver of green innovation, customer pressure has attracted massive research attention (Huang et al., 2016). Sim and Kim (2021) state that a rise in customer pressure will likely state that a rise in customer pressure will likely economically increase companies' environmental investments. Zhu et al. (2008) show that companies need to effectively integrate environmental concerns into their regular practices and strategic planning agendas due to customer attention to ecological issues and pressure.

Costumer pressure lays out a specific context or boundaries within which the company acts (Wilfahrt et al., 2020). Therefore, the efforts put into sustainability and innovation may be boosted by a context of environmentally engaged customers and intense customer pressure (Sim & Kim, 2021). Consequently, this study highlights how ambidexterity may trigger sustainability, adding to the moderating effects of customer pressure.

Figure 14 - Conceptual Model 1



## 5.3. METHOD

### 5.3.1. Sample and data collection

The data was collected through a structured questionnaire applied to industrial companies in Portugal to test the proposed investigation model and the research hypotheses. According to the report of the National Institute of Statistics (INE) and a survey carried out on innovation in processes and products, industrial economic activity is the most in-demand invention. The questionnaire was applied in 11 industrial districts of Portugal (Maia, Águeda, Leiria, Marinha Grande, Pombal, Aveiro, Gaia, Tagus Park, Sintra and Matosinhos) in two phases, one month apart. Companies in each district were systematically visited, and a questionnaire was left to be answered by someone from the commercial or operations department. Two weeks later, we collected the questionnaires and left another to be answered by someone from the financial department on performance items. They were collected two weeks later. Sometimes, a second visit was necessary to collect the first questionnaire. In the first round, 360 companies answered, and in the second round, only 336 questionnaires were completed and collected, corresponding to the final sample.

This final sample of 336 valid respondents (55% female) was 36 years old and had an average tenure of 7 years in various posts (e.g., customer service, administrative, managers, commercial service, accounting). Of all respondents, 37% had completed high school, and 2% had a bachelor's degree. Respondent companies are from manufacturing, and 54% were small enterprises (less than 50 employees), 24% were medium (between 51 and 250 employees), and 23% were significant in size (more than 250 employees).

Table 17 - Sample profile

| DEMOGRAPHICS | First Part | Second Part |
|---|---|---|
| **Services** | **181** | **162** |
| **Industry** | **179** | **174** |
| **Staff** | | |
| 1-50 employees (%) | 87 | 69 |
| 50-100 employees (%) | 98 | 93 |
| 100-250 employees (%) | 63 | 62 |
| >250 employees (%) | 12 | 12 |
| **Age** | | |
| > 25 years | 49 | 48 |
| 10-25 years | 141 | 132 |
| 5-9 years | 140 | 144 |
| < 5 anos years | 26 | 26 |
| **Respondents** | | |
| Commercial department | 89 | |
| Operations | 47 | |
| Administrative | 188 | |
| Financial Department | 12 | 336 |

## 5.4. MEASURES

Measurement was based on scales developed and tested in previous investigations, respecting the original structure, and formulating the necessary adjustments. This meant translating the questionnaire from English into Portuguese, which made it easier for respondents to understand it. Scale items are shown in Table 18. A seven-point Likert scale was used, and participants were instructed to score each item from 1 ("strongly disagree") to 7 ("strongly agree").

Table 18 - Measurement scales

| Construct | Item | Loadings |
|---|---|---|
| **Ambidexterity Exploration (Atuahene-Gima, 2005)** | Over the last three years, to what extent has your company:<br>(1) Are acquired manufacturing technologies and skills entirely new to the company? | 0.943 |
| | (2) Learned product development skills and processes (such as product design, prototyping new products, timing new product introductions, and customizing products for local markets) entirely new to the industry. | 0.918 |
| | (3) Acquired entirely new managerial and organizational skills that are important for innovation (such as forecasting techniques and customer trends; coordinating and integrating R&D; marketing, manufacturing, and other functions; managing the product development process) ? | 0.920 |
| | (4) Learned new skills in areas such as funding new technology, staffing R&D function, training and developing R&D, and engineering personnel for the first time? | 0.850 |
| | (5) Strengthened innovation skills in areas with no prior experience? | 0.780 |
| **Ambidexterity Exploitation (Atuahene-Gima, 2005)** | Over the last three years, to what extent has your company:<br>(1) Upgraded current knowledge and skills for familiar products and technologies? | 0.891 |
| | (2) Invested in enhancing skills in exploiting mature technologies that improve the productivity of current innovation operations? | 0.889 |
| | (3) Enhanced competencies in searching for solutions to customer problems near existing solutions rather than completely new solutions? | 0.940 |
| | (4) Upgraded skills in product development processes in which the company already possesses significant experience? | 0.945 |
| | (5) Strengthened our knowledge and skills for projects that improve the efficiency of existing innovation activities? | 0.890 |
| **Sustainability (Brown & Dacin, 1997)** | Our company is highly concerned for...<br>(1) Disabled minority issues | 0.930 |
| | (2) Local communities | 0.956 |
| | (3) Environment | 0.912 |
| | (4) Corporate giving to worthy causes | 0.798 |
| **New green product success (Chen & Chang, 2013)** | (1) The green product development project contributes a key source of revenue to the company. | 0.901 |
| | (2) The green product development project develops an excellent green product. | 0.945 |
| | (3) The green product development project continually improves its development processes over time. | 0.948 |
| | (4) The green product development project is more innovative in green product development than its competitors. | 0.927 |
| | (5) The green product development project can meet its environmental goals in green product development. | 0.881 |
| **Green product innovation (Chen et al., 2006)** | (1) The company chooses the materials of the product that produce the least amount of pollution for conducting the product development or design. | 0.928 |
| | (2) The company chooses the materials of the product that consume the least amount of energy and resources for conducting the product development or design. | 0.970 |
| | (3) The company uses the fewest materials to comprise the product for product development or design. | 0.871 |
| | (4) The company would circumspectly deliberate whether the product is easy to recycle, reuse, and decompose for product development or design. | 0.874 |

## Model

Table 19 shows the results of the estimation of the structural model. Composite reliability (CR) and the average variance extracted (AVE) were computed. All the scales showed values above 0.7 for CR and above 0.5 for AVE, which align with the recommendations (Hair et al., 1998). Discriminant validity is evidenced by the fact that all correlations between the constructs are significantly smaller than one. The squared correlations calculated for each pair of constructs are always smaller than the variance extracted for corresponding constructs (Shiu et al., 2011).

Table 19 - Square Correlations, Cronbach´s Alpha, Composite reliability, and Average Variance Extracted

| Construct | X1 | X2 | X3 | X4 | CR | AVE |
|---|---|---|---|---|---|---|
| **Ambidexterity (DC)** | **0.965** | | | | 0,98 | 0,81 |
| **Sustainability (Sus)** | 0.631 | **0.943** | | | 0,94 | 0,81 |
| **Green product innovation (GPI)** | 0.359 | 0.269 | **0.955** | | 0,95 | 0,83 |
| **New green product success (NGPS)** | 0.505 | 0.428 | 0.590 | **0.967** | 0,97 | 0,85 |

Diagonal in bold - Cronbach's Alpha; CR - Composite Reliability; AVE - Average Variance Extracted.

A multigroup analysis was performed to test the moderation effects of customer pressure, divided into two groups according to average: the low CP group (162 respondents) and the high CP group (174 respondents). A chi-square test was performed to compare the two groups, and the results show a significant difference between them. The differences between the unconstrained model (chi-square 1 160,914; D.F. 440) and the fully constrained model (chi-square 1 221,734; D.F. 463) show that the models are different (chi-square 60,82; D.F. 23; $p \leq 0.01$) and that the moderation effects are significant.

## Common method variance

To reduce the risk of standard method variance, we used some procedural methods suggested by Podsakoff et al. (2003): (1) all respondents were guaranteed anonymity and the confidentiality of the information collected and were assured that there were no right or wrong answers; (2) items were put in random order; (3) there was no use of scales with bipolar numerical values or verbal designations for the mid-points of the scales; (d) the questionnaire was divided into several sections with a brief explanation, reducing the risk of common method bias (Brammer & Millington, 2008). Most important, data collection was carried out at two different moments, using two other vital respondents. Statistical tests were conducted to explore the possible effects of standard method variance. A critical component analysis (unrotated solution) of all the items

revealed seven factors with eigenvalues above one, and none explained more than 23% of the variance.

## 5.5. FINDINGS

The results in Table 20 support our hypotheses. Ambidexterity is positively related to Sustainability (β = 0.638, p < 0.001), therefore Hypothesis 1 is supported. The path association between sustainability and green product innovation is significant (β = 0.277 p < 0.001), supporting Hypothesis 2. Sustainability shows a significant relationship with new product success (β = 0.297, p < 0.001), which indicates that Hypothesis 3 is supported. We also found that green product innovation had positive path associations with new product success (β = 0.508, p < 0.001), supporting Hypothesis 4.

Table 20 - Results of the structural model

| Hypothesis | Relationship | SRW | C.R. | P | SRW | C.R. | P | SRW | C.R. | P | Supp/ Not supp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **H1** | AMB → Sus | 0.638 | 10.658 | *** | 0.698 | 8.011 | *** | 0.535 | 6.023 | *** | Supp |
| **H2** | Sus → GPI | 0.277 | 4.906 | *** | 0.385 | 4.666 | *** | 0.071 | 0.864 | 0.388 | Supp |
| **H3** | Sus → NPS | 0.297 | 6.200 | *** | 0.394 | 5.073 | *** | 0.216 | 2.888 | *** | Supp |
| **H4** | GPI → NPS | 0.508 | 10.211 | *** | 0.389 | 5.029 | *** | 0.307 | 4.172 | *** | Supp |
| **GLOBAL (n=336)** | | | | | High CP (n=174) | | | Low CP (n=162) | | | |

Table 21 - Results of the structural model

| Hypothesis | Relationship | SRW | C.R. | P | Supported/Not supported |
|---|---|---|---|---|---|
| **H1a** | Exploration → Sus | 0.518 | 5.521 | *** | Supported |
| **H1b** | Exploitation → Sus | 0.118 | 1.294 | 0.196 | Not supported |

### Indirect effects

The literature review suggests that dynamic capabilities impact companies' outcomes, and such impact may not be direct (Ciasullo et al., 2020; Jakhar et al., 2020). Thus, we tested for the indirect effects of the model.

Table 22 - Indirect effects

| Hypotheses paths | Standardized indirect effects | 95% confidence interval | *P* | Supported/Not supported |
|---|---|---|---|---|
| **DC → Sus → GPI** | 0.215 | [0.119;0.341] | *** | Supported |
| **DC → Sus → NGPS** | 0.122 | [0.072;0.192] | *** | Supported |
| **DC → Sus → GPI → NGPS** | 0.259 | [0.147;0.350] | ** | Supported |
| **Total effects** | 0.381 | [0.265;0.493] | ** | Supported |

Note: DC: Dynamic capabilities; Sus: Sustainability; GPI: Green Product Innovation; NGPS: New Green Product Success
*** = $p<0.01$; ** = $p<0.05$; * = $p<0.1$; NS: non-significant

The mediation effects of sustainability on the relationship between dynamic capabilities and green product innovation and new green product success were supported at a 95% Bias-corrected bootstrap confidence interval.

## 5.6. DISCUSSION, CONCLUSION, AND IMPLICATIONS

In this study, we explored the mechanism underpinning the influence of ambidexterity on green product innovation and new green product success, considering the actions of sustainability and the moderation effect of customer pressure. Additionally, we explored the impact of the two components of ambidexterity, exploration, and exploitation, to understand if companies should specialize in prospection or exploration to enhance the benefits drawn in the long term from innovation. Ambidextrous organizations may develop more muscular agility and adjustment and an excellent readiness for change (Amankwah-Amoah & Osabutey, 2020; Khan et al., 2021). However, companies may be facing different sustainability challenges: for some of them, the exploitative approach may be needed to take more significant advantage of a well-known potential field (Katou et al., 2021), while others may need an explorative push to help the company face new challenges coming from un unknown area (Katou et al., 2021).

Our findings suggest that ambidexterity fosters sustainability practices, promoting green product innovation and new green product success. According to the hierarchical dynamic capability theory, dynamic capabilities are the basis for exploiting accumulated resources and competencies and developing new ones (de Moura & Saroli, 2021; Vézina et al., 2019), thus helping companies to address and take advantage of sustainability. Companies use first-order dynamic capabilities, namely essential resources, to increase competitive advantages and cope with changing environments (Zhang, 2014). Currently, companies are experiencing a new context where stakeholders scrutinize their sustainable practices. Exploration and exploitation, individually, were expected to influence social responsibility positively. Nonetheless, exploration alone has a positive and statistical impact on sustainability.

Exploration leads to new areas and fields of knowledge and business (Katou et al., 2021; March, 1991). Instead, exploitation is concerned mainly with efficiency (Katou et al., 2021; March, 1991). Consequently, exploration impacts sustainability which means that sustainability could still represent a new field of knowledge for the Portuguese companies. At the same time, they may be facing difficulties in investing in both

exploration and exploitation. However, Portuguese companies can adapt to future environmental requirements and assume risks, focusing on experimentation, flexibility, and innovation (Katou et al., 2021). Solís-Molina et al. (2018) state that specialization in exploration or exploitation alone can benefit companies with limited resources and investment capacity, might be the case among these companies. Still, the combination of exploration and exploitation, alongside investment in both capabilities, seems to strengthen the desired outcomes of the organization (Wenke et al., 2021), namely sustainability and its effects on innovation. Our results give additional meaning to the importance of exploration and exploitation combined to maximize sustainability practices and the greening of companies (Ciasullo et al., 2020; Kotabe & Kothari, 2016; Shafique et al., 2021; Zhang & Zhu, 2019). Extant literature posits that sustainability may foster green product innovation (Cheng, 2020; Luo & Du, 2015) and the success of new green products (Song et al., 2018). Our results show that sustainability has a positive impact on both using cleaner materials and technologies to (re)design products and packaging or to give products new green functions (Ferreira et al., 2021b; Huang & Chen, 2022), that meet customers' needs and concerns. These results show that Portuguese companies are concerned with their social responsibility and contribution to a better world and are increasingly able to change their values, their behaviour, and their processes and create new and more sustainable products (Bacinello et al., 2019; Luo & Du, 2015) that might respond to customer and society's green requirements (Dogbe et al., 2021; Lisi et al., 2020; Sim & Kim, 2021). Adopting sustainable culture and environmentally engaged solutions, in line with the social and institutional environment characteristics, may promote long-term competitive advantages (Zhang & Zhu, 2019). Therefore, the success of new products remains the expected reward for sustainability investments and green innovation (Dogbe et al., 2021; Song et al., 2018). Several studies have shown that customers are willing to pay more for a sustainable product (Sim & Kim, 2021), and our results go in the same direction. Sustainability and green innovation are increasing the potential for success of the new products and services that these green strategies bring to markets (Wilfahrt et al., 2020; Zhu et al., 2008). Green innovation, based on new

features and new packaging, new components, new uses, the induction of new customer behaviours, all imbued with this mint green behaviour, come to respond to a growing demand for, call to, pressure, on the greening of productions and consumption (Dogbe et al., 2021; Lisi et al., 2020; Song et al., 2019). The results show that customer requirements and companies' green strategies may be combined and produce effects for a better world.

To better explore the set of linkages proposed in our investigation model, we tested the indirect effects of ambidexterity on green product innovation and the success of new green products. Sustainability links balanced dynamic capabilities and green innovation (Ciasullo et al., 2020). Sustainability centred on the effects of a new culture, new resources, and new processes, shows how ambidextrous companies may become greener (Shafique et al., 2021) and enjoy tremendous market success (Jakhar et al., 2020). Moreover, according to our preliminary results, sustainability might be, per se, more explorative (Solís-Molina et al., 2018) corresponding to an innovative behaviour upon entering a new knowledge field (March, 1991). Sustainability practices might be considered a proactive strategy for companies that generate a more significant social reputation, better skills, and increased competitive advantages based on a more remarkable ability to generate innovation (Bhupendra & Sangle, 2015; Voegtlin & Scherer, 2017).

Additionally, we tested the moderating impact of customer pressure. Our results show that customer pressure boosts the effects of ambidexterity on sustainability and sustainability of new green product innovation and new green product success. According to hierarchical dynamic capabilities and stakeholder theories, companies must develop the capabilities to respond to the unique needs of their primary stakeholders (Muñoz-Pascual et al., 2019; Svensson et al., 2018; Wu et al., 2017). Companies facing pressure from their environment, especially from their customers, are expected to put additional efforts into greener strategies, to meet the expectations of the market (Sim & Kim, 2021), and find a better fit between internal systems and contextual forces (Song et al., 2019). Our results show how external pressures, particularly customer pressure, drive

companies to enhance their ability to become more sustainable and how that inevitably makes them more innovative, i.e., greener innovation. Thus, the result is a more significant impact on green innovation and the success of the new green products, as these green innovations meet customer and market expectations (de Moura & Saroli, 2021). We found a virtuous circle emerging from the markets leading companies to improve their green performance and competitiveness (Bhupendra & Sangle, 2015) while minimizing their environmental impacts and the overall well-being of society (Song et al., 2018).

Results show the success of new green products through sustainability practices. Sustainability practices represent changes in the behaviour of companies towards practices more concerned with the environment and society. These practices are considered a proactive strategy for companies to generate a more significant social reputation, better skills, and enhanced competitive advantages based on a more remarkable ability to produce innovation (Bhupendra & Sangle, 2015; Voegtlin & Scherer, 2017).

### Theoretical implications

This research seeks primarily to evaluate the impact of ambidexterity (exploitation and exploitation) on green product innovation and new product success through the effects of sustainability, considering moderation effect. This investigation and our results make three key contributions: 1) Our study uses hierarchical dynamic capabilities theory to explain how the combination of exploration and exploitation might drive the greening of companies and their strategies, exploring the effects of exploration and exploitation, isolated and combined in and ambidexterity approach; 2) Our investigation explores the role of sustainability both as an outcome of companies capabilities and a driver of innovation and market performance, establishing the chain of effects that explains the greening of companies; 3) Customer pressure may be explored as a condition that helps companies to find the right direction for achieving a better fit between the efforts in respect of green innovation and customer demands, translated into more tremendous

market success; and 4) By assessing the individual impact of exploration and exploitation on sustainability may contribute to a better understanding of the newness degree of sustainability for companies, as far as exploration is the dynamic capability that presents a greater and more significant impact on sustainability.

## Managerial implications

This study provides insights for managers by helping them expand their understanding of the impact of ambidexterity and supporting their decisions on sustainable innovation.

Our findings emphasize the importance of ambidexterity in pursuing green product innovation and new product success. As green innovation is typically unique to most companies, managers should pay considerable attention and allocate resources to ambidexterity, which helps them understand the external dimension of a company and create new approaches to decision-making and operations (Zhang & Zhu, 2019). Ambidexterity may imply additional investments, but the results seem to be rewarding. Thus, companies seeking to embrace successful green innovation should be aware of the importance of exploration and exploitation. They may find it significantly difficult to enhance their green innovation without the former. Given the different natures of exploration and exploitation, managers should also note the need to respond differently to sustainability and, consequently, sustainable innovation. Lastly, this study reinforced the importance of managers aligning their objectives with social responsibility practices, directing new developments at product development and success (Ha, 2021).

## Limitations and directions for future research

This work has some inherent limitations that should be addressed in future research. Data collection is based on potential non-probabilistic sampling. At the same time, longitudinal data is more suitable for establishing strict causality. All at once, we specifically focused on the Portuguese industrial sector. Even though this environment might be particularly effective for studying social responsibility performance or sustainable innovation because it is recognized as an innovative sector facing higher pressures from stakeholders, thus,

future research could be extended to other business environments, such as service, communications, health care, retail, and education.

Another limitation of our work is that we studied exploration and exploitation combined, ambidexterity, and exploration and exploitation separately. Future studies must explore different types of ambidextrous strategies to effectively engage in exploration and exploitation, either sequentially or simultaneously.

CHAPTER 6

# HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

## GREEN STRATEGIC ALLIANCES AND CORPORATE SOCIAL RESPONSIBILITY: IMPACT ON SUSTAINABLE INNOVATION FOR DIFFERENT COUNTRIES

# CHAPTER 6 - GREEN STRATEGIC ALLIANCES AND CORPORATE SOCIAL RESPONSIBILITY: IMPACT ON SUSTAINABLE INNOVATION FOR DIFFERENT COUNTRIES


## ABSTRACT

Green strategic alliances promote the sharing of cultural and corporate social responsibility practices, and this can influence sustainable innovation. The main goal of this work is to analyze the effect of green strategic alliances on the green process and product innovation through corporate social responsibility. A 50-item questionnaire was developed to explore the proposed relationships and applied in two different countries. For Portugal, 200 valid questionnaires were obtained and for China 303 questionnaires were obtained. We used structural equation modeling (SEM) to test the hypotheses. Our results suggest that green strategic alliances enable corporate social responsibility practices, promoting the implementation of green products and green processes. Interestingly, the most important difference between countries is the positive impact of sustainable innovation (process and product) on new green product success, for Portuguese companies.



**Keywords:** Green Strategic Alliances; Corporate Social Responsibility; Product Innovation; Process Innovation; New Green Product Success

## 6.1. INTRODUCTION

The discussion about corporate social responsibility began at the end of the 20th century and increased in recent years, becoming critical as companies are currently looking for long-term sustainability (Zhang & Zhu, 2019; Javed et al., 2020). Researchers and practitioners are paying growing attention to environmental, social, and economic concerns responding to the pressure from markets, customers, government, and other stakeholders (Cancela et al., 2020; Elkington, 1998; Hussain et al., 2018; Zhang and Zhu, 2019). The literature has shown that socially responsible companies achieve reputational gains, improve productivity, attract better employees, and manage to retain them in the company while increasing sales, customer loyalty and profit (e.g., Javed et al., 2020).

In this context, recent studies have already considered several drivers of social responsibility, namely mechanisms of corporate governance (Hussain, Rigoni, & Orij, 2018), leadership (Fu et al., 2020; Liao & Zhang, 2020; Muzhar et al., 2020; Pasricha et al., 2018) and organizational learning (Osagie et al., 2020). Other studies appraised the role of some stakeholder groups on CSR practices in companies namely, employees, customers, and government (Luu, 2019; Mallén Broch et al., 2020; Mascarenhas et al., 2020). However, the study of the effects of partnerships enhancing and deepening corporate social responsibility practices on companies is scarce (Shi et al., 2020). Green strategic alliances may help companies manage corporate social responsibility challenges (Thorne et al., 2017). Given the ambiguity and uncertainty associated with environmental issues, strategic green alliances can facilitate the flow of valuable information and enable technologies to address market opportunities while generating positive environmental impacts (Lin, 2012; Niesten & Jolink, 2020). In this way, strategic green alliances provide knowledge, technology, human resources, and market share, improving the company's sustainable innovation and bringing new products to the market (Tower et al., 2021). In this sense, sustainable innovations allow organizations to thrive and obtain competitive advantages (Przychodzen & Przychodzen, 2018), clearly connected with the holistic perspective of sustainable development (Boons et al., 2013).

In this line of research, several studies showed the impact of corporate social responsibility (CSR) on strategic alliances (Nguyen & Johnson, 2020; Thorne et al., 2017). However, studies on the impact of green strategic alliances on CSR are limited (Shi et al., 2020). Also, it has been established that companies must be more socially responsible by developing strategic alliances with other companies through partnerships, even if the links remain uninvestigated (Shi et al., 2020). Furthermore, ~~s~~trategic alliances on sustainable innovation have attracted scholarly attention to without clearly separating the type of innovation under scrutiny (i.e., radical, incremental, process or product) (Tower et al., 2021). Additionally, and to the best of our knowledge, only a few studies address the role of strategic alliances in developing new products (Tower et al., 2021) and sustainable development (Dang et al., 2019; Nguyen & Johnson, 2020). Indeed, studies addressing the success of a new green product are scarce (Huang & Chen, 2022). Therefore, this study aims to contribute to the existing literature by assessing the effect of green strategic alliances on corporate social responsibility and, consequently, on sustainable product and process innovation, thus leading to superior new green product success. Finally, we argue that organizations achieve effectiveness by adjusting the organization characteristics to contingencies that reflect the company's situation (Maletič et al., 2016). In this sense, we developed our investigation in two different countries with different contingencies and factors to better understand the development of sustainable performance in different contexts. The main novelties introduced by this study are as follows: derived from value creation and organizational learning theories based we study the impact of green strategic alliances on the companies' innovation development; it addresses social responsibility standards, leading to sustainable innovation (product and process) and the success of new green products. The methodology employed is based on cross-sectional data, from two samples of 200 valid answers from Portuguese and 303 from Chinese companies. Data collection was based on a structured questionnaire, and the test of the proposed hypotheses relied on a structural equation modeling approach.

This study is organized as follows. In section 2, we present the development of the underpinning hypotheses development. Section 3 describes the methodology followed. Section 4 delivers the main results and elaborates on their discussion. Finally, Section 5 draws the main conclusions and provides future work developments.

## 6.2. RESEARCH BACKGROUND AND HYPOTHESES DEVELOPMENT

### 6.2.1. Sustainability supported by value creation and organizational learning theories

With the increasing awareness of the importance of companies' social responsibility (Zhang & Zhu, 2019), the debate on CSR increased over the recent years (Cancela et al., 2020; Elkington, 1998; Hussain et al., 2018; Javed et al., 2020). Several studies address the non-consensual CSR definition or conceptualization (Javed et al., 2020). In this vein, Chin et al. (2013) reinforce that such inconsistencies have hampered research in this line of work. While some authors consider CSR or CS interchangeable concepts (Shrivastava & Addas, 2014), other authors do not follow a conceptual harmonization between CSR and CS because these concepts entail distinct activities (Chin et al., 2013).

The concept of CSR emerged in 1997 as 'a *development that meets the needs of the present without compromising the ability of future generations to meet their own needs*'(WCED, 1987, p. 24). Currently, corporate social responsibility is understood as an interconnected and balanced evolution of three dimensions: economic, environmental, and social (economic prosperity, environmental protection, and social equity) (Bakos & Dumitrascu, 2017; Muñoz-Torres et al., 2018; Wu et al., 2017). This evolution of the three-dimensional responsibility ideology is based on Elkington's triple bottom line concept (Elkington, 1998). A responsible company simultaneously generates economic, social, and ecological benefits, traditionally known as the three pillars of sustainable development (Elkington, 1998; Hussain, Rigoni, & Orij, 2018). Indeed, corporate social responsibility is strategically engaging with social and environmental activities, including the internal capacities (resources and capacities) to promote sustainable innovation and successful products.

Corporate social responsibility is also the reason for the strategic alignment of social and environmental activities, considering the internal resources and capabilities, to promote sustainable innovation and successful new green products offered to the overall society. Several theories can help to explain the companies' engagement with CSR engagement, and the research in this area had an initial development in the 1990s and a rapid growth

in the 21st century (White et al., 2017). Literature shows that initial studies about CSR were supported by agency theory. Agency theory encourages the creation of an ideal contract between the parties, ensuring a clear alignment of interests, and avoiding potential conflict (Jo & Harjoto, 2011; Michelon & Parbonetti, 2012). Therefore, considering the theoretical background, we have outlined the link between theories and the respective constructs used in this investigation. Table 23 presents the different ideas that support CSR and the various related constructs.

Table 23 - Construct-linked recent theories and relevant literature

| THEORY | LINKED CONSTRUCT | REFERENCES |
|---|---|---|
| **Stakeholders' theory** | Corporate Social Responsibility, Green Innovation, Competitiveness, Green product innovation, green process innovation, Green Dynamic capability | Padilla-Lozano and Collazzo, (2022); Yuan & Cao (2022) |
| **Value creation theory** | sustainability reporting, corporate performance, bank performance, company innovation performance, enterprise innovation performance, Strategic CSR practices, business value creation, innovation practice, sustainable innovation, substantial value, innovativeness | Anlesinya and Abugre (2021); Battisti et al. (2020); Buallay et al. (2020); Kong and Zhang (2018) |
| **Organizational learning theory** | Exploration, exploitation, learning, innovation, sustainable development, environmental performance, green innovation, total quality management, sustainable practices | Calantone et al. (2002); Dixon et al. (2007); Maletič et al. (2016); Zhang and Zhu (2019) |
| **Resource-based view** | Environmental sustainability orientation and strategic alliance learning in green supply chain management, Corporate Social Responsibility, Green Innovation, Green product innovation, green process innovation, Green Dynamic capability | Chu (2019); Yuan and Cao (2022) |

At the same time, the stakeholders' theory, which emerged as a theory of society, gave an additional impulse to the CSR diffusion and development, and the democratization of CSR practices. This theory essentially focuses on contracts/relationships between the company and its stakeholders (e.g., Freeman, 1984; Hussain et al., 2018; Ortas et al., 2017) seeking a harmonious development that reconciles the interests of all parties. More recently, value creation theory brought additional explanation to this rapid growth in the interest in CSR. Companies must integrate their suppliers and consumers into value creation processes, to face the existing environmental challenges and adequately respond to the needs and expectations of their stakeholders, quickly and competitively.

In this context, companies may use CSR as a strategic resource and capability, to reduce the effect of their operations on the environment in which they operate and create value for stakeholders (Kowalski & Matusiak, 2019). This explanation is supported by the resource-based view (RBV) theory. In this theory, resources are scarce, valuable, irreplaceable, and cannot be imitated entirely, and CSR may be seen as a valuable and inimitable resource (Barney, 1991).

Value creation theory explains how sharing ideas, values, culture, knowledge, and technology adds value and increases the sustainability standards of the companies and their alliance partners. According to Bonn and Fisher (2011), companies must create value for shareholders, employees, suppliers, customers, and business partners, to take advantage of corporate social responsibility and achieve sustainability (Duong et al., 2021).

The organizational learning theory also has helped explain the development of corporate social responsibility in companies. According to this theory, companies resist changing their paradigms without organizational learning processes (Levinthal, 1991). Learning is necessary to modify corporate operations, fight inertia, learn new behaviors, and interpret phenomena with innovative lines of thought (Dixon et al., 2007; Zhang & Zhu, 2019). According to different authors, organizational learning is divided into two fundamentally different approaches, exploration, and exploitation, which support organizational development and adaptation (Dixon et al., 2007; Zhang & Zhu, 2019).

Through research and knowledge development, it is possible to develop new skills involving product and process adjustments, taking risky actions, experimenting, making procedures more flexible, and innovating (March, 1991). Furthermore, business investments to improve products or services include refinement, production, efficiency, selection, implementation, and execution (March, 1991). Thus, organizational learning emerges, which is the way companies acquire these new capabilities, allowing their survival and prosperity in new and volatile contexts (Dixon et al., 2007), a vital factor for sustainable innovation (Zhang & Zhu, 2019).

The literature shows that one way to meet these stakeholders' expectations and acquire all those valuable resources and new capabilities, is to create strategic alliances between different companies/partners, with different knowledge and capabilities, to share and take advantage of joint action in the CSR field (Bouncken et al., 2020). These external partnerships are essential for sharing values and knowledge, allowing companies to evolve towards greater value creation and, consequently, to assume more social responsibility commitments. For the reasons appointed, our results are supported by using the value creation and organization learning theories.

## 6.3. GREEN STRATEGIC ALLIANCE

A strategic alliance is a voluntary agreement of cooperation between companies to execute specific projects and achieve the best performance (Duong et al., 2021; Lin, 2012). Companies that create strategic alliances share information, resources, capabilities, skills, experiences, and technology, therefore promoting each other's strengths, reducing costs and operational risks, taking advantage of economies of scale, and redesigning new strategies (Niesten & Jolink, 2020; Pooe & Munyanyi, 2019; Shakeri & Radfar, 2017). In recent decades, with the increasing impacts of globalization and because companies are facing the pressure of environmental and societal responsibilities (Kohtamäki et al., 2018), companies are compelled to engage in more strategic alliances to deal with environmental issues, taking advantage of reciprocal synergies (Przychodzen & Przychodzen, 2018). Thus, the concept of green strategic alliance arises, which corresponds to formal or informal collaboration agreements between two or more companies that aim to develop joint solutions to overcome environmental problems and become environmentally responsible (Crane, 1998; Shah, 2011). In addition, GSA also provides companies with access to environmental information and knowledge (Mendleson & Polonsky, 1995) and new green markets (Crane, 1998), providing new and better products and solutions to the markets (Bouncken et al., 2020), making them more competitive. After establishing a GSA, companies can jointly reduce environmental costs or share ecological benefits (Wang & Zha, 2017). Companies implement green strategic alliances to respond to the concrete challenges that arise from CSR, and to acquire the necessary skills to promote the socially responsible objectives of companies (Thorne et al., 2017).

Companies seek stable strategic partnerships to improve commitment and learn to be sustainable. Few studies have analyzed the effect of green strategic alliances on corporate social responsibility. However, some of these studies have shown a positive relationship between strategic alliances and corporate sustainability or CRS engagement (Akpotu & Jasmine, 2016; Islam et al., 2018). Shi et al. (2020) studied the impact of the

strategic green coalition on green supply chains. They found that green strategic partnerships promote new knowledge about corporate social responsibility, namely, in achieving ecological, economic, and socially sustainable development goals. They did it through knowledge sharing and shared values, green culture development, common challenges and requirements, and establishing new sustainability standards for them and their suppliers, spreading them across the supply chain (Fontoura & Coelho, 2020a). The literature shows that green strategic alliances improve knowledge in the sustainable area, promoting sustainable behavior in companies (Thorne et al., 2017). Thus, we proposed the following hypothesis:

H1: Green strategic alliances positively influence corporate social responsibility.

## 6.4. SUSTAINABLE INNOVATION

Sustainable innovation is defined as the implementation, improvement, or creation of products or organizational processes and methods, covering the three dimensions of sustainability (Boons et al., 2013). For Cheng and Shiu (2012), sustainable innovation is any innovation that provides economic, environmental, and social benefits promoting and generating sustainable ideas (Charter et al., 2017). Therefore, companies can contribute to sustainable development by reorienting their products and improving their configuration and processes (López et al., 2007) to deal with new customer requirements and pressures (Saeidi et al., 2015). Likewise, sustainable innovations can successfully respond to different stakeholders (Przychodzen & Przychodzen, 2018), seeking to meet their green needs and expectations. Innovation alliances use complementary resources, knowledge, and technologies, to bring new solutions, products, and services to the market (Bouncken et al., 2020). Green alliances can create innovation-related value through the knowledge and skills of alliance partners (Bouncken et al., 2020).

Several studies establish a relationship between CSR and innovation (Kraus et al., 2020; Luo & Du, 2015; Martinez-Conesa et al., 2017; Padilla-Lozano & Collazzo, 2022; Ratajczak & Szutowski, 2016). According to Przychodzen and Przychodzen (2018), there is a positive relationship between sustainability and companies' innovation activities. Strategic alliances can be used both for value creation and improving innovation or developing of new products, accelerating entry into new markets, and improving global market adaptability (Tower et al., 2021). Traditionally, green innovation is divided into two major streams, green product innovation and green process innovation (Wong, 2013).

## 6.5. SUSTAINABLE PRODUCT INNOVATION

The concept of sustainable product innovation focuses on the designing of new products or refinement of existing products to minimize social and environmental impacts (OECD, 2010). Roscoe et al. (2016) state that sustainable product development innovation (SPDI) must ensure that products are designed to generate less waste based on clean technologies and renewable energy. Moreover, SPDI uses cleaner product materials and technologies to (re)design products, packaging, and delivery (Wong et al., 2020). Sustainable products may be more expensive than non-sustainable ones, however, by sacrificing short-term profits, the company promotes better results and performance in the medium and long term (Triguero et al., 2013), therefore, increasing sustainability (Cheng, 2020; Triguero et al., 2013).

Lisi et al. (2020) reinforced that green product innovation includes the stages of design, manufacture, and marketing of the product, to save energy, prevent pollution, recycle waste and be non-toxic. Literature shows that CSR has a positive effect on SPDI and can also be used to obtain green taxes and subsidies (Zhao et al., 2021). CSR also allows companies to reach different stakeholders, improving the company's reputation (Yumei et al., 2021) and bringing investors to green R&D (Wu et al., 2020). Therefore, CSR enhances both the acquisition of tangible and intangible resources to promote SPDI (Forcadell et al., 2021).

Given the above, we proposed the following hypothesis:

H2: Corporate Social Responsibility positively influences sustainable product innovation.

### Green strategic alliances and sustainable product innovation

In addition, one of the ways for companies to bring these resources is through the constitution of green strategic alliances, which will allow the growth of SPDI (Yuan & Cao, 2022). Moreover, green strategic partnerships lead to more sustainable business options, with sustainable product innovation (Buallay, 2019). Based on these arguments, several

different investigations also find a positive relationship between alliances and innovation (Islam et al., 2018). This positive relationship means that green strategic alliances bring new knowledge, experiences, markets, cultures, and technology (Windsor, 2017), allowing companies to develop sustainable product innovation. In this way, the companies with strategic alliances maximize organizational outcomes through more sustainable product innovation (Adams et al., 2016).

In this way, we consider the following hypothesis:

H3: Green strategic alliances positively influence sustainable product innovation.

### Sustainable process innovation

Sustainable process innovation introduces new approaches or modifications to existing production processes, which can cause positive externalities to the environment (Wang & Ahmed, 2004). It addresses the adoption of cleaner production methods, technological advances to increase processes' eco-efficiency, and new management approaches to review production methods and efforts to reduce the carbon footprint, waste, emissions, and pollutants (Mo et al., 2020; Triguero et al., 2013). Together with product innovation, it contributes to minimizing the company's negative externalities, improving its sustainability performance on the triple bottom (Husted & Allen, 2007; Luo & Du, 2015). Sustainable processes improve the company's reputation and avoid higher penalties and taxes (Cheng & Shiu, 2012; Roscoe et al., 2016; Triguero et al., 2013). For example, using recycled paper requires a review of the process, involving changes in product design to avoid extensive bleaching of recycled paper, and to make it blank again (McDonough, 2002). A process considered innovative and sustainable must: (1) conform to environmental requirements and the expectations of customers and other stakeholders; (2) consider the efficient use of energy, materials, and resources; (3) have no or minimal impact on human well-being and environmental sustainability; (4) evaluate the environmental performance of the product throughout its manufacturing cycle (Wong, 2013). Several studies showed that corporate social responsibility positively affects innovation (Forcadell et al., 2021; Islam et al., 2018; Yuan & Cao, 2022). CSR may lead

companies to reinvent themselves and become more innovative (Tantayanubutr & Panjakajornsak, 2017). Lastly, Yuan and Cao (2022) also found that CSR practices significantly promote green process innovation. Therefore, we propose the following hypothesis:

H4: Corporate Social Responsibility positively influences sustainable process innovation.

### Green strategic alliances and sustainable process innovation.

The main goal of green strategic alliances is to develop joint solutions to environmental problems (Crane, 1998; Shah, 2011). These alliances improve the sustainable processes with the expected reduction of costs or share ecological benefits (Wang & Zha, 2017). Green strategic alliances maximize positive organizational outcomes through more sustainable strategies based on shared experiences, knowledge, and technology (Windsor, 2017) and new cultures are more socially engaged (Adams et al., 2016). Thus, we propose the following hypothesis:

H5: Green strategic alliances positively influence sustainable process innovation.

### New Green Product Success

The innovative concept of "new green product" (Zhou & Wu, 2010) concerns the creation, design, and development of products that reduce the negative impact on the environment because they are new, and they are green. They eliminate waste, including hazardous chemicals, emissions, pollution, and energy conservation, while they contribute to the elimination of toxicities, water, and solid waste, throughout the production process of products, based on environmental regulations and voluntary approaches, improving the organization's competitiveness (Abu et al., 2018). This concept aims to optimize the company's real environmental impact, resulting from products, processes, raw material use, energy use, waste generation, suppliers' cooperation, and distribution (Banerjee, 2001). The new green product success (NGPS) is a recent and emerging concept based on changes in development and design,

transforming existing products into green products that can meet customer needs and expectations (Song et al., 2018; Wong, 2013) as well as increasing company sales and results (Song et al., 2018). That is why we are talking about a combination of new, green, and successful products.

The literature shows that several authors have reinforced these studies on the development of new green products, showing that they are developed due to the pressure exerted by stakeholders and increasingly focused on social responsibility (Muñoz-Pascual et al., 2019; Svensson et al., 2018). NGPS is vital for companies (Nuryakin & Maryati, 2020) as environmental issues are integrated into commerce and the market, with consumers looking for and preferring ecological or green products (Abu et al., 2018), while companies are facing a call and increased pressures to become greener (Sim & Kim, 2021). Furthermore, commercializing successful green products is a crucial competitive weapon for companies that want to outperform in the market (Bernal-Conesa et al., 2017; Chen & Chang, 2013).

Green innovation can be a source of differentiation and advantage, leading to green innovation and new green product success (Wong, 2013). Enzing et al. (2011) concluded that innovation affects the success of a new product in the market, bringing more value and reducing cost. Also, Nuryakin and Maryati (2020) concluded that green product and process innovations positively affect green product success, bringing new features, new procedures, less waste, less environmental impact, and more customer satisfaction. Green practices combine, innovation and newness, and ecology or environmentalism (Zhou and Wu, 2010). Therefore, a positive response to consumers' expectations reinforces the potential for new green product success (Dogbe et al., 2021). Consequently, Li et al. (2019a) concluded that higher levels of green innovation, both process, and product, will significantly increase business competitiveness.

Thus, literature brings the arguments that support this idea of putting both sides of innovation, process, and product, contributing to positive answers to customers and other stakeholders' green expectations (Sim & Kim, 2021), leading to the desired

outcome, an environmentally friendly product that may succeed in market (Song et al., 2018). Underlying these arguments, we propose the following hypothesis:

H6: Sustainable product innovation positively influences new green product success.

H7: Sustainable process innovation positively influences new green product success.

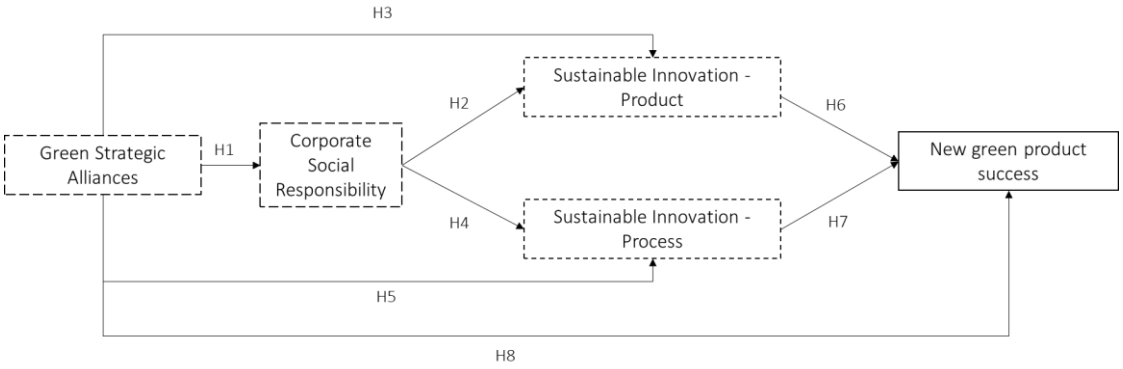
### Green strategic alliances and new green product success

From what will be easily understood, in a changing world, the pressure of stakeholders to address environmental issues can urge will incite managers to create new solutions (products and processes) with these new green features (Hao et al., 2019). Therefore, this change in external stakeholders' behavior encourages companies to improve their environmental performance (Azadegan et al., 2018; Sim & Kim, 2021; Zhu & Sarkis, 2007). At the same time, the manager's recognition of their responsibilities on environmental issues also pressures companies and all internal decision-makers to pay more attention and better understand how to deal with the customer pressure effect and the intrinsic moral duties of the organization (Huang et al., 2016). Hence, companies can shape strategic alliances to capture external recognition and promote rapid intra-organizational culture and behavior changes, to respond to stakeholders' pressure (Ferreira et al., 2021b). However, NGPS depends on the type of resources partnerships may bring and their interconnection (Wong, 2013). Thus, strategic alliances can enhance knowledge and capabilities to reshape innovation (Niesten & Jolink, 2020), and adopt better marketing policies that might positively affect the success of a new green product (Park et al., 2002). Therefore, the proposed chain of effects will make GSA contribute to the consolidation of internal CSR and sustainable innovation, leading to superior new green product success.

Accordingly, we propose the following hypothesis:

H8: Green strategic alliances positively influence new green product success.

Figure 15 - Conceptual Model 2



## 6.6. METHOD

### 6.6.1. Sample and data collection

To test the proposed research model and the research hypotheses, data were collected through a structured online questionnaire, based on two samples of Portuguese and Chinese companies. The samples comprise valid responses from Portuguese and Chinese companies.

Table 24 summarizes the characterization of the two samples showing that industry and services are widely represented. The sample from Portugal included the largest percentage of small companies (49%) while the sample from China is made up of 43% of medium-sized companies. It should also be noted that Portuguese companies are on average older than Chinese companies.

Table 24 - Sample profile

| | Portugal | China |
|---|---|---|
| **Services** | 79 | 95 |
| **Industry** | 121 | 196 |
| **Size** | | |
| - Small (less than 50 employees) | 49% | 11% |
| - medium (between 51 and 250 employees) | 25,5% | 43% |
| - Large (more than 250 employees) | 25,5% | 45% |
| **Respondents** | | |
| - Direction | 27,5% | 18% |
| - Management | 47% | 56% |
| - Operational | 25,5% | 26% |
| **Time in company** | | |
| - > 25 years | 31 | 22 |
| - 10-25 years | 36 | 45 |
| - 5-9 years | 34 | 69 |
| - < 5 anos years | 99 | 169 |
| **TOTAL** | 200 | 303 |

The argument for using data from companies belonging to different countries is to understand whether the marked differences in geographic, economic and market development, can impact the promotion of sustainable values and practices (Duong et al., 2021). Literature has shown that economically more developed countries are usually more sustainable and more innovative countries. However, many of today´s environmental problems have resulted from this economic development that harms environmental quality and may eventually result in damage to ecological sustainability (Chang & Hung, 2021).

Bearing this in mind, we considered using data from two countries that, despite being geographically distant, have distinctive and at the same time close characteristics that help us to explore the attributes of sustainability, namely green strategic alliances. First, these countries are both considered transition economies (Ely et al., 2016).

Criteria such as HDI or per capita income facilitate the division between developing and underdeveloped countries, according to economic and social development. China is an industrialized country with a high level of innovation, but it is considered a developing country because it does not meet the HDI criteria, mainly due to its per capita Gross Domestic Product (GDP) (Fu & Jian, 2021; Mo et al., 2020).

Second, the literature reveals that both countries have sought to create strong sustainable policies (Tourigny et al., 2019). Regarding Portugal and according to the European Commission's eco-innovation rank, Portugal holds the tenth position, highlighting that despite its evolution, it is still below expectations, and it needs strong policies that promote eco-innovation, namely concerning the private sector, and improve the internal management of organizations (*Eco-Innovation in Portugal*, 2017). China, despite being one of the most polluting countries, has currently placed sustainability at the forefront of its political agenda, being considered a national priority.

There are vast internal policies to promote sustainability, but studies show that companies still do not have the extra resources to innovate and change their internal processes and practices to focus on sustainability as something irreversible. Although there is still no consensus on the cost-benefit trade-off of adopting innovative practices

in sustainability, Portugal has been considered an innovative and entrepreneurial country (Fontoura & Coelho, 2022), and these issues can have a significant impact on innovation and green sustainability.

### Measures

Measurement was based on scales developed and tested in previous investigations, respecting the original structure, and formulating the necessary adaptation. This adaptation included translating from English to Portuguese for Portuguese companies and English to Chinese, for Chinese companies, making it easier for respondents to understand the questionnaire. A seven-point Likert scale was used, and participants were instructed to score each item from 1 ("strongly disagree") to 7 ("strongly agree"). Scale items are shown in table 25.

Table 25 - Measurement scales

| Construct | Dimensions | Item | Loadings Portugal | Loadings China |
|---|---|---|---|---|
| **Green Strategic Alliances** (Ferreira et al., 2021a; Schilke & Cook, 2013) | Inter-organizational coordination | Activities undertaken with alliance partners are well coordinated. | 0.921 | 0.852 |
| | | There are guarantees that the work tasks align with the alliance partners. | 0.974 | 0.893 |
| | | There are guarantees that the work performed coincides with the work of the alliance partners. | 0.947 | 0.863 |
| | | There is a great deal of interaction with alliance partners in most decisions. | 0.919 | 0.857 |
| | Alliance portfolio coordination | There are guarantees of adequate coordination between the activities of the different alliances. | 0.919 | 0.882 |
| | | The company determines areas of synergy in the alliance portfolio, including green alliances. | 0.963 | 0.889 |
| | | Some guarantees identified interdependencies between alliances, including "green alliances." | 0.973 | 0.902 |
| | | Potential overlaps between different alliances, including "green alliances," are evaluated. | 0.977 | 0.870 |
| | Inter-organizational learning | The company can learn from alliance partners, including "green alliances." | 0.938 | 0.833 |
| | | The company has management skills to absorb new knowledge from "green alliances." | 0.978 | 0.848 |
| | | The company has good routines to analyze information obtained through "green alliances." | 0.961 | 0.868 |
| | | The company can successfully incorporate new information acquired from alliance partners into existing knowledge, including "green alliances." | 0.898 | 0.869 |
| | Alliance proactiveness | The company strives to anticipate competitiveness by entering new "green alliances." | 0.937 | 0.860 |
| | | Often, the company approaches other companies with "green alliances" proposals" | 0.898 | 0.877 |
| | | Compared to the competition, the company is more proactive and agile in finding new alliance partnerships, including "green alliances." | 0.892 | 0.898 |
| | | We actively monitor the environment to identify opportunities for green partnerships, including. | 0.928 | 0.895 |
| | Alliance transformation | The company is willing to set aside contractual terms to improve green alliances' results. | 0.917 | 0.860 |
| | | When an unexpected situation arises, the company prefers to modify an alliance agreement by including "green alliances" rather than insisting on the original terms. | 0.895 | 0.916 |
| | | The company is flexible in the face of requests to change its alliances, including "green alliances." | 0.849 | 0.896 |

Table 25 - Measurement scales (cont.)

| Construct | Dimensions | Item | Loadings Portugal | Loadings China |
|---|---|---|---|---|
| **Corporate social responsibility** (Bacinello et al., 2019) | Economic | The company takes action to reduce costs in materials management. | 0.813 | 0.827 |
| | | The company carries out waste management actions to obtain profits. | 0.685 | 0.827 |
| | | The company carries out actions to manage derived technologies. | 0.837 | 0.837 |
| | | The company takes action to reduce water costs. | 0.787 | 0.868 |
| | | The company takes action to reduce energy costs. | 0.753 | 0.888 |
| | | The company has economic value creation processes. | 0.744 | 0.844 |
| | Social | The company pays attention to corporate reputation management. | 0.804 | 0.792 |
| | | The company advertises its social actions. | 0.823 | 0.879 |
| | | The company carries out actions to promote executive education and learning. | 0.772 | 0.895 |
| | | The company manages equal opportunities. | 0.762 | 0.833 |
| | | The company manages working practices and focuses on good practices and conditions. | 0.864 | 0.873 |
| | | The company presents the management of social actions. | 0.627 | 0.847 |
| | | The company has processes for creating social value. | 0.819 | 0.857 |
| | Environmental | The company has actions aimed at managing environmental legislation. | 0.923 | 0.848 |
| | | The company focuses on managing “clean” technology. | 0.780 | 0.867 |
| | | The company manages environmental issues, focusing on minor use of available resources. | 0.906 | 0.848 |
| | | The company promotes sustainable actions to use natural resources. | 0.918 | 0.870 |
| | | The company presents actions to encourage environmental programs. | 0.846 | 0.875 |
| | | The company presents actions to treat effluents and waste to minimize air, water, and soil impacts. | 0.901 | 0.864 |
| | | The company presents processes for creating environmental value. | 0.855 | 0.862 |
| **New product success** (Chen & Chang, 2013) | | The green products were developed to follow the company’s green guidelines. | 0.938 | 0.830 |
| | | The green products were developed to follow the green requirements defined by the stakeholders. | 0.960 | 0.823 |
| | | Green products are more lucrative than competing products. | 0.925 | 0.868 |
| | | Green products are more profitable than competing products | 0.882 | 0.842 |
| | | The green products developed are successful in the market. | 0.875 | 0.852 |
| **Green product innovation** (Silva et al., 2019) | | Development of new products that substantially differ from existing products in sustainability. | 0.916 | 0.941 |
| | | Developing new products that differ slightly from existing products to more sustainable ones. | 0.915 | 0.928 |
| | | Incremental modifications to existing products. | 0.872 | 0.943 |
| **Green process innovation** (Silva et al., 2019) | | Introduction of new sustainable production processes. | 0.941 | 0.911 |
| | | Introduction of minor or substantial modifications to existing production processes, making them more sustainable. | 0.958 | 0.924 |
| | | Introduction of new or significantly improved information technologies to produce products or services, substantially improving sustainable practices. | 0.837 | 0.923 |

Table 26 and 27 shows the results of the estimation of the structural model. Confirmatory factor analysis was used to assess the psychometric properties of the scales and the measurement model adjustment, using AMOS Version 21.0. The final models show a good adjustment for Portugal and China (IFI 0.932; TLI 0.928; CFI 0.932; RMSEA 0.071; CMIN/DF 1.996 and IFI 0.981; TLI 0.980; CFI 0.981; RMSEA 0.029; CMIN/DF 1.251, respectively). Composite reliability (C.R.) and the average variance extracted (AVE) were computed. All the scales showed values above 0.7 on C.R. and above 0.5 on AVE, which aligns with the recommendations (Hair et al., 1998). Discriminant validity is evidenced by the fact that all correlations between the constructs are significantly smaller than one. The squared correlations calculated for each pair of constructs are always smaller than the variance extracted for corresponding constructs (Shiu et al., 2011).

### Common method variance

To reduce the risk of common method variance, we used some procedural methods postulated by (Podsakoff et al., 2003): (1) all respondents were guaranteed anonymity and the confidentiality of the information collected and were assured that there were no right or wrong answers; (2) there was randomness in the ordering of multiple items; (3) there was no use of scales with bipolar numerical values or verbal designations for the mid-points of the scales; (d) the questionnaire was divided into several sections with a brief explanation, reducing the risk of common method bias (Brammer & Millington, 2008). Statistical tests were carried out to explore the possible effects of common method variance. A principal component analysis (unrotated solution) of all the items revealed seven factors with eigenvalues above one, and none explained more than 22% of the variance.

Table 26 - Square Correlations, Cronbach's Alpha, Composite reliability, and Average Variance Extracted (Portugal)

| Construct | X1 | X2 | X3 | X4 | X5 | CR | AVE |
|---|---|---|---|---|---|---|---|
| Green Strategic alliances (GSA) | **0.978** | | | | | 0.99 | 0.88 |
| Corporate social responsibility (CSR) | 0.477 | **0.984** | | | | 0.99 | 0.79 |
| Green product innovation | 0.391 | 0.498 | **0.927** | | | 0.93 | 0.81 |
| Green process innovation | 0.483 | 0.677 | 0.702 | **0.934** | | 0.94 | 0.83 |
| New green product success | 0.444 | 0.591 | 0.524 | 0.560 | **0.968** | 0.97 | 0.85 |

Diagonal in bold - Cronbach's Alpha; CR - Composite Reliability; AVE - Average Variance Extracted.

Table 27 - Square Correlations, Cronbach's Alpha, Composite reliability, and Average Variance Extracted (China)

| Construct | X1 | X2 | X3 | X4 | X5 | CR | AVE |
|---|---|---|---|---|---|---|---|
| Green Strategic alliances (GSA) | **0.968** | | | | | 0.98 | 0.77 |
| Corporate social responsibility (CSR) | 0.534 | **0.973** | | | | 0.98 | 0.73 |
| Green product innovation | 0.514 | 0.373 | **0.942** | | | 0.94 | 0.85 |
| Green process innovation | 0.552 | 0.381 | 0.497 | **0.955** | | 0.96 | 0.88 |
| New green product success | 0.683 | 0.521 | 0.442 | 0.426 | **0.924** | 0.93 | 0.71 |

Diagonal in bold - Cronbach's Alpha; CR - Composite Reliability; AVE - Average Variance Extracted.

## 6.7. FINDINGS

Results (Table 28) show that all the hypotheses regarding the Portuguese sample were supported ($p < 0.001$). At the same time, hypotheses regarding the Chinese sample were also supported ($p < 0.05$), except H7 and H8 ($p > 0.05$), related to the relationships between green products and process innovation and the success of new products.

Table 28 - Results of the structural models of Portugal and China

| Hypothesis | Relationship | SRW | C.R. | P | SRW | C.R. | P | Supported/Not supported |
|---|---|---|---|---|---|---|---|---|
| **H1** | GSA → CSR | 0.692 | 10.654 | *** | 0.744 | 10.978 | *** | Supported |
| **H2** | CSR → GProdInov | 0.523 | 6.548 | *** | 0.157 | 2.034 | ** | Supported |
| **H3** | GSA → GProdInov | 0.268 | 3.562 | *** | 0.610 | 7.444 | *** | Supported |
| **H4** | CSR → GProcInov | 0.668 | 9.063 | *** | 0.147 | 2.034 | ** | Supported |
| **H5** | GSA → GProcInov | 0.233 | 3.816 | *** | 0.633 | 7.949 | *** | Supported |
| **H6** | GProdInov → NGPS | 0.256 | 2.584 | ** | 0.000 | 6.680 | - | Supported in Portugal |
| **H7** | GProcInov → NGPS | 0.371 | 3.452 | *** | 0.014 | 6.091 | - | Supported in Portugal |
| **H8** | GSA → NGPS | 0.235 | 3.493 | *** | 0.880 | 10.288 | *** | Supported |
| | | Portugal sample (n=200) | | | China sample (n=303) | | | |

Note: GSA: Green Strategic Alliances; CSR: Corporate Social Responsibility; GProdInov: Green Product Innovation; GProcInov: Green Process Innovation; NGPS: New Green Product Success
*** = p<0.01; ** = p<0.05; * = p<0.1; NS: non-significant

The mediation effects of product innovation on the relationship between corporate social responsibility and new green product success were supported at a 95% Bias-corrected bootstrap confidence interval for Portugal and China.

Table 29 - Indirect effects of Portugal and China

| Hypotheses paths | SIE | 95% confidence interval | *P* | SIE | 95% confidence interval | *P* | Supported/Not supported |
|---|---|---|---|---|---|---|---|
| **CSR → ProdInov → NGPS** | 0.040 | [0.026;0.436] | ** | 0.002 | [0.026;0.436] | ** | Supported |
| **CSR →ProcInov → NGPS** | 0.132 | [-0.025;0.200] | - | 0.000 | [-0.025;0.200] | - | Not supported |
| | Portugal | | | China | | | |

Note: GSA: Green Strategic Alliances; CSR: Corporate Social Responsibility; ProdInov: Product Innovation; ProcInov: Process Innovation; NGPS: New Green Product Success; SIE: Standardized indirect effects.
*** = *p*<0.01; ** = *p*<0.05; * = *p*<0.1; NS: non-significant.

## 6.8. DISCUSSION

In this study, we explored the influence of green strategic alliances on the success of new green products, considering the effects of corporate social responsibility actions and sustainable innovation on products and processes.

Several studies in this area have emerged in recent years because environmental and social issues are becoming more important for society and, consequently, for companies. Most of these studies reinforced that innovation will be part of any solution to improve companies' environmental and social performance. However, despite the increase, studies are still scarce regarding the importance of partnerships on innovation performance, through social responsibility activities. Partners are essential to increasing social responsibility knowledge, culture, and practices (Shi et al., 2020).

Green strategic alliances promote the sharing of knowledge, technology, values, and cultural aspects (Niesten & Jolink, 2020; Pooe & Munyanyi, 2019). When partners share the same culture and attitude towards CSR, even at different levels (Akpotu & Jasmine, 2016; Islam et al., 2018), they tend to contaminate others, leading them to improve actions, processes, and product outcomes. In this sense, when companies decide to enter a GSA, according to value creation and organizational learning theory, complementary knowledge and resources tend to be shared and seized, creating and sharing value for all stakeholders, most of it related to innovation (Bouncken et al., 2020) and the development of new green products, based on a sustainable behavior (Sim & Kim, 2021). Therefore, our results show a significant and positive effect of GSA on the companies' CSR. So, GSA might lead to successfully responding to the stakeholder and institutional pressures (Lin, 2012) regarding social and environmental issues (Thorne et al., 2017). The allied companies share knowledge and resources (DePamphilis, 2022) that create ecological value, which can help communicate actions taken in social and environmental areas, to stakeholders (Thorne et al., 2017). This sharing among strategic alliances aligns with organizational learning theory, which asserts that organizational learning allows for

creating, retaining, and transferring knowledge, which might lead to sustainability (Zhang & Zhu, 2019), therefore increasing the success of new green products, mediated by mainly the effects of product innovation.

In the long term, companies learn from their green partners, resulting in improvements in the different CSR dimensions. Specifically, they can improve the economic dimension, sharing lower risks and costs (Niesten & Jolink, 2020); the social dimension, improving citizens' quality of life, ensuring that future generations are not harmed (Cheng & Shiu, 2012); and the environmental dimension, focusing on cleaner technologies, reducing the consumption of limited natural resources (Schilke & Cook, 2013).

Our results showed solid statistical evidence that CSR promotes sustainable innovation in products and processes. The literature indicates that sustainable process innovation is the use of clean technologies, and environmentally friendly manufacturing to improve the efficiency of production processes, through less raw material and energy consumption, to reduce or eliminate the negative impact on people and the environment (Roscoe et al., 2016; Triguero et al., 2013; Wu et al., 2017). The production processes with product innovation, together, contribute to minimizing the company's negative externalities, improving their sustainability performance on the triple bottom (Husted & Allen, 2007; Luo & Du, 2015). Thus, our results demonstrated that Portuguese and Chinese companies could reduce their environmental and social impacts through processes and product innovation, forming or integrating GSAs that could help them move in this direction.

The results also demonstrated that CSR drives sustainable innovation in products and processes. In addition, the growing competition and more significant burden of social responsibility from manufacturers make them more aware and giving greater importance and value to creating a "green" image in the customers' minds (Wong, 2013). This image includes introducing a new solution, or modifying solutions, to add environmental and social value in addition to economic value (Przychodzen & Przychodzen, 2018). It has even been shown that sustainable product and process innovation positively influence NGPS,

especially for the Portuguese sample. Pressure from stakeholders to address environmental issues can push managers to develop new products that are substantially different from existing ones in terms of sustainability, thus increasing the likelihood of success of green products on the market (Song et al., 2018; Wong, 2013).

However, we could verify that sustainable process and product innovation have no significant impact on NGPS for the Chinese sample. These results, even if not hypothesized, may find clarification in past literature (Wong, 2013) suggesting that green requirements, alone, are not enough to cause innovation or product innovation success, especially when the market is less sensitive to environmental issues. At the same time, even if Chinese companies are subject to institutional and market pressure to engage in sustainable behavior and actions, their effect might be limited by the dependence on economic resources, namely, R&D subsidies or other Chinese government funds (Yi et. al, 2021). At the same time, it is not recognized that the population has the resources to pay extra for green products, or even the willingness to do so: is that a priority for them?

## 6.9. IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

Our investigation presents 4 major theoretical implications. Assessing the effect of green partnerships on the adoption of corporate social responsibility practices, based on an organizational learning approach. Strategic green alliances can simplify the flow of valuable information and enable the dissemination of clean technologies, to have an impact on social responsibility, promoting a more dynamic, inclusive, and efficient reality, adding respect for the environment.

Going far beyond the impacts on innovation and introducing the effects CSR may have on market success.

Combining value creation and organizational learning theory to explain how green strategic alliances and the importance of leaders in sustainable partnerships influence companies' sustainable behavior. These leaders learn to change corporate operations, combat inertia, adopt new attitudes and interpret phenomena with innovative, green-oriented approaches.

Finally, using different databases to compare different realities (Portugal and China) may contribute to a better understanding of the green maturity of civil society and institutional forces, driving the companies' sustainable efforts.

Our research also includes practical implications that will be of interest to several different stakeholders.

Managers, shareholders, potential investors, and other stakeholders, including civil society. They all will be able to better understand the effect of strategic alliances on the dissemination and effects of corporate social responsibility, namely on innovation and the success of companies in the launching of new green products. Moreover, these effects can be measured in terms of the success of the new green products, highlighting the benefits of adopting a green behavior. In fact, what we have here is another way, the GSAs, giving an additional impulse on the CSR adoption and the greening of the planet.

Leaders are responsible for defining the company's strategy. Therefore, they must recognize the importance of creating strategic alliances in the development of innovation.

Nowadays, companies have scarce resources to invest in new ideologies or new practices, namely, sustainable practices and innovation. However, through strategic alliances and subsequent synergies, they can achieve innovations more easily and with fewer resources.

Finally, it is important to combine product and process innovation, so that companies are more innovative and sustainable, increasing market success.

Regarding our main limitations, we have considered:

We use a cross-sectional study that inhibits the comparison with other periods and limits the establishment of a clear causality.

We did not control the company's ownership, which can be crucial in decision-making.

This investigation is based on a convenience sample.

For future research could be interesting to collect data from different respondents. Also, it is important to apply other methodologies or combine qualitative and quantitative methodologies. Additionally, it is important to study other important variables, namely cultural aspects, and institutional factors, as drivers of CSR adoption, and innovation success.

CHAPTER 7

# HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

## GREEN ORGANIZATIONAL IDENTITY AND SUSTAINABLE PERFORMANCE: THE ROLE OF GREEN STRATEGIC ALLIANCES AND THEIR IMPACT ON SUSTAINABLE SHARED VALUES AND VISION

# CHAPTER 7 – GREEN ORGANIZATIONAL IDENTITY AND SUSTAINABLE PERFORMANCE: THE ROLE OF GREEN STRATEGIC ALLIANCES AND THEIR IMPACT ON SUSTAINABLE SHARED VALUES AND VISION


## ABSTRACT

This study aims to understand the role of green strategic alliances in a green and social shared vision and green shared value, and how this impacts a green organizational identity and sustainable performance. It was focused on Portugal and China; both countries are in a transition economy looking for a new identity for the business market focused on sustainability. We propose a theoretical model that was tested using structural equation modelling (SEM). A 60-item questionnaire was developed to explore the proposed relationships and applied in two different countries, Portugal, and China. 200 responses were collected from Portugal and 303 valid answers from China.

Our results support that for both Portugal and China, green strategic alliances contribute positively to increasing the green and social shared vision which in turn leads to more sustainability and the creation of a green organizational identity. The results further emphasize that those green business alliances increase the green shared value which also leads to better performance on sustainability, and a green identity, in both countries, with a clear increase in awareness of environmental and social practices.

This article is innovative because it dissects the importance of green strategic alliances between companies in the green revolution, under organizational learning, and value creation theories, to better explore how alliances may succeed in shaping the green identity of companies and make them more sustainable.



Keywords: Green Strategies Alliances; Green and Social Shared Vision; Green Shared Value; Green Organization Identity; Sustainability

## 7.1. INTRODUCTION

As this global society becomes more aware of social and environmental issues, companies are also challenged to meet the expectations of various stakeholders, following not only the objective of profit but also environmental protection and social equity (Hussain, Rigoni, & Cavezzali, 2018). Environmental problems and studies in sustainable area have grown dramatically in recent decades (Zhao et al., 2022). Stakeholders are pressing companies to be more sustainable (Lee & Raschke, 2020), and companies are taking advantage of the potential synergies to grow and differentiate, becoming greener, more sustainable, and more competitive(Nuryakin & Maryati, 2020; Padilla-Lozano & Collazzo, 2022). As a result, green business strategies appear to serve the interests of the adoption of a green organizational identity and a more and better awareness of the broad and complex concept of corporate sustainability (Przychodzen & Przychodzen, 2018). Therefore, environmental alliances are a common response to societal sustainability demands (Niesten & Jolink, 2020). In environmental alliances, companies collaboratively exploit and explore environmental technologies to address market opportunities while simultaneously generating positive environmental and social impacts (Bouncken et al., 2020). Since the 1980s, strategic alliances have had a regular presence both in public discussions and among academics, to respond to the problems of uncertainty, competitiveness, and complexity of businesses, which are increasingly globalized and with the need to ensure environmental and social sustainability (Castañer & Oliveira, 2020; Gilson & Davis, 2019; Levinson & Asahi, 1995; Martinez, 2022). Nowadays, companies need to respond to the sustainable pressure of stakeholders (Kohtamäki et al., 2018). In this sense, it is important to study the role of green partnerships on sustainability practices and long-term benefits for companies. Strategic alliances are at the heart of inter-organizational relationships and these good cooperation practices have been identified as a guarantee of success in organizations to establish the basis for solid sustainability (Ashkenas, 2015; Gulati et al., 2012; Salvato et al., 2017).

The topic of green management partnerships has deserved a growing interest in academic research, but the studies developed until now are also very diverse and not always convergent. In this sense, there are still some issues that have not been fully discussed (Chang, 2020). Nguyen and Johnson (2020) emphasized the importance of strategic green alliances in CSR (Carroll, 1999; Mohan, 2006; Shi et al., 2020; Thorne et al., 2017), reinforcing the importance of investigating the relationship between strategic alliances and sustainable performance, under the influence of multiple motives and determinants, which include internal, social, situational, and demographic factors. Additionally, Fontoura and Coelho (2022) and Islam et al. (2018) postulated that studies about how the impact of strategic alliances on companies is transmitted have not been sufficiently examined.

Chang (2020) reinforced those future studies should consider the internal contextual factors of an organization as an entry point and focus on the green shared value, and green organizational identity. According to him, green shared value, green social shared vision, and green organizational identity have been widely investigated, but out of the context of strategic alliances, and they should be investigated under this alliance theory approach (Chang & Chen, 2013; Chang, 2020; Chang & Hung, 2021; Chen et al., 2015; Crane, 1998; Liu et al., 2021).

Current research is mainly focused on strategic alliances in new product development (Tower et al., 2021) and sustainable development (Nguyen & Johnson, 2020) focusing more on specific product development rather than overall value creation and social value features. Additionally, these investigations are carried out on companies from a single country (Chang & Chen, 2013; Chang, 2020). Therefore, it is important to study the continental markets, and investigate and compare several different countries, to reinforce the results of the investigation and test the stability of results (Chang & Hung, 2021).

To fill these gaps our objective is to explore the relationship between green strategic alliances and sustainability and green organizational identity, through the effects of green

shared value and green and social shared vision. This study is innovative because it investigates the role of strategic alliances in the green transformation of companies, under organizational learning, and value creation theories, to better explore how alliances may succeed in shaping the green identity of companies and make them more sustainable. Additionally, the study is applied in two different countries, Portugal, and China, facilitating the understanding and applicability of the results in geographically and culturally distant countries and giving additional support to the advantages of embracing green strategic alliances responsibility (Edeh & Zhao, 2021; Manzhynski & Figge, 2020), in a cross-cultural approach.

The structure of this article is organized as follows: Section 2 presents a framework for the subject, theories, and literature review; Section 3 presents the research design, scientific work methods, and design of the questionnaire. In the fourth section, the results obtained are discussed and finally, in section 5, the conclusions, theoretical contributions, practical contributions, and limitations are presented, as well as future research directions.

## 7.2. RESEARCH BACKGROUND AND HYPOTHESES DEVELOPMENT

### 7.2.1. Value Creation and Organizational Learning theories

A review of existing literature reveals that agency theory Jensen and Meckling (1976) and stakeholders' theory Freeman (1984) are the two dominant perspectives used to explain the evolution of sustainable performance. However, recent research has shown that companies around the world searching to increase their sustainability, have different motivations and different forces driving them (Islam et al., 2018; Song et al., 2018). The literature on green strategic alliances and sustainable performance is scarce and needs intra-organizational theoretical support to be explained (Chang, 2020; Chang & Hung, 2021).

Companies may use CSR as a strategic resource and capability, to reduce the effect of their operations on the environment in which they operate and create value for stakeholders at the same time (Kowalski & Matusiak, 2019). Value creation theory explains how sharing ideas, values, culture, knowledge, and technology, may add value, and increases the sustainability standards of the companies, and their alliance partners. According to Bonn and Fisher (2011) and Bouncken et al. (2020), companies must create value for shareholders, employees, suppliers, customers, and business partners, to take advantage of corporate social responsibility and achieve sustainability (Bouncken et al., 2020). Following Lavie (2009), value-creation strategies are those that generate benefits that are shared by the partners (Lavie, 2009).

Companies with high access to new and relevant knowledge have an additional resource to capture and create value (Ozmel et al., 2017). However, a process of organizational learning must retain, create and transfer this knowledge within an organization (Dixon et al., 2007).

Organizational learning is the process of creating, retaining, and transferring knowledge within an organization (Dixon et al., 2007). According to this theory, companies resist changing their paradigms, in the absence of organizational learning processes. Thus,

learning is necessary for changing organizational operations, fighting inertia, and learning new behaviours with innovative lines of thought (Zhang & Zhu, 2019). Knowledge must be broad so that it can overcome any difficulty and thus enhance innovation in organizations (Zhang & Zhu, 2019). According to several authors, organizational learning is divided into two fundamentally different approaches: exploration and exploitation, which support organizational adaptation and innovation (Dixon et al., 2007; Zhang & Zhu, 2019). Exploration is considered the development of new competencies, processes, and products, involving activities such as research, product and process modifications, risky actions, experimentation, flexibility, discovery, and innovation (Ferreira et al., 2021; March, 1991). On the other hand, exploitation presupposes investments to improve products or services and includes activities such as refinement, production, efficiency, selection, implementation, and execution (March, 1991; Dixon et al., 2007).

Organizational learning is the mechanism by which companies acquire and internalize new capabilities, allowing their survival and prosperity in new and volatile contexts (Dixon et al., 2007). Therefore, this becomes a key element of any effort to effectively implement sustainable development in companies, being naturally considered an important determinant of sustainable performance (Siebenhüner & Arnold, 2007; Zhang & Zhu, 2019).

In short, the two theories presented to support and help in the understanding of the ability of companies to capture, internalize and retain external knowledge, to integrate internally, and consequently, promote several advantages, especially in sustainable performance, creation, and sharing value.

### 7.2.2. Green Strategic alliances

The emergence of strategic alliances benefits from the formation of global economic integration, through voluntary cooperation agreements between two or more companies (Lin & Darnall, 2010), enabling participating companies to achieve goals that a single company cannot achieve with its limited capabilities (Kohtamäki et al., 2018).

Organizations that establish strategic alliances share information, resources, capabilities, skills, experience, cost, and risk reduction, overcome technological constraints, achieve economies of scale, change strategies, etc., and benefit from each other's strengths (Aragón-Correa & Sharma, 2003). Al-Gharrawi (2018) believes that alliance partners can reciprocally complement and combine by transferring specific skills or resources so that both parties can obtain more significant benefits. Muthusamy and White (2005), examined the effects of social exchange processes between alliance partners on the extent of learning and knowledge transfer in a strategic alliance. The authors concluded that social exchanges, such as reciprocal commitment, trust, and mutual influence between partners, are positively related to learning and knowledge transfer in strategic alliances. Also, Cheng et al. (2008) found that trust is the pivot of the factors influencing inter-organizational knowledge sharing. The more a factor contributes to trust positively (such as participation and communication) or negatively (such as opportunistic behaviour), the more the factor contributes to knowledge sharing correspondingly.

In this sense, a green strategic alliance refers to a strategic alliance partnership established by companies with a focus on long-term sustainability performance. Green strategic alliances are the alliances between companies that work for the greening of the environment and social development (Rathee & Rajain, 2016; Stafford & Hartman, 1996). The strategic goals of sustainable development based on ecology, economy, and society can be achieved through complementary resources, benefit-sharing, and risk-sharing. Therefore, green strategic alliances between business partners can be beneficial for sustainable performance (Arts, 2002). Manzhynski and Figge (2020), cooperating with competing companies (competitive strategy) can increase the environmental performance of companies, as it generates a more efficient use of natural resources (Muthusamy & White, 2005). Green strategic alliances take natural environmental protection as the core and help enterprises achieve green development and green management (Przychodzen & Przychodzen, 2018). Therefore, green coalitions can be

established between any combination of commercial organizations, government organizations, and non-governmental organizations (Arts, 2002; Crane, 1998). For companies, green alliances represent new business opportunities, improve (environmental) performance, and enhance reputation (Glasbergen & Groenenberg, 2001).

The green strategic alliance has the green culture required for its operation. They adopt the green mission of energy conservation and emission reduction, developing a low-carbon economy, and developing creative answers to the new green social needs (Huang & Chen, 2022) as part of the collaborative culture of the alliance participants. Since the different sides of the alliance are organizations from different businesses and directions, creating a strategic alliance culture guided by a "green culture" can promote mutual absorption between enterprises and gain more experience in cooperation (Yuan & Cao, 2022).

According to Nalebuff and Brandenburger (1997), companies must adapt to changes in the environment and respond to society's pressures. The role of environmental organizations as part of green alliances is to act as strategic bridges or encourage their partners to adopt environmentally friendly ethics while being aware of their market objectives (Stafford & Hartman, 1996). Green strategic alliance supports their members by providing environmental information and knowledge (Mendleson & Polonsky, 1995) and access to new green markets (Carroll, 1999). Green alliances are helping members to quickly adapt to environmental changes and accelerate the introduction of new and better products and services adapted to these new markets (Kohtamäki et al., 2018).

To maximize the benefits of a strategic green alliance, companies must follow a careful selection process when choosing an environmental alliance partner. This selection process includes: determining alliance objectives; specifying the desired results; and determining the fit between the organization, the environmental group, and the target market (Mendleson & Polonsky, 1995).

### Green and social shared Vision

Green shared vision refers to the development of a common vision that is aimed toward environmental friendliness and sustainable development (Chen et al., 2014). A shared vision capability exists when managers communicate organizations' goals to members, sharing the responsibility for the achievement of organizational objectives (Aragón-Correa et al., 2008). A shared vision capability provides a basis for action (Pearce & Ensley, 2004) within the organization ensuring convergence toward long-term goals. If leaders fail to share their goals, visions may become purely theoretical, resulting in "disillusionment and distrust instead of inspiration and motivation". According to Chen et al. (2015) a green shared vision is defined as a clear and common strategic direction for achieving collective environmental goals and aspirations that have been internalized by employees of an organization. In our paper, we consider the green and social shared vision, to address the shared vision based on the triple bottom line. The organization may create a green shared vision to stimulate employees' pro-environmental behaviour by enacting environment-related policies and practices such as saving energy and reducing carbon emissions and reusing resources (Afsar et al., 2020), and then sharing it with the other alliance members. Our shared vision refers to the sharing of a vision among alliance members, bringing all of them to the same level of commitment to environmental and social issues (Akmal & Gauld, 2021). Chen et al. (2014) observed that a green shared vision provides appropriate guidelines and ideal goals for members of the organization, and thus, to the alliance members. They can, therefore, successfully overcome the current challenges and perform work-related tasks under a common vision. Pearce and Ensley (2004) indicated that a shared vision can convey common insights, visions, knowledge, and blueprints for future ideals of members, and a shared vision can offer a common strategic direction to facilitate and reveal convergent goals. Moreover, a shared vision uses the potential for corporate success as a basis for visionary strategies (Alt et al., 2015). Similarly, Wang and Rafiq (2009) stated that establishing a shared vision can be the basis for internalizing a competitive advantage, based on knowledge sharing,

bringing the vision from the alliance, and spreading it internally, redesigning the internal culture. A shared vision can, internally, assist staff members to perceive their work through a large and mindful context. Furthermore, it can be used to motivate members of the organization to intensify their willingness to exceed expectations. In summary, a green and social shared vision establishes a common blueprint for future development, endorsing norms and values, motivating them to surpass performance expectations, and acting as a resource to develop future strategies. A shared vision is a picture that everyone in the company carries in their heads and hearts. So, companies engage in greening practices when sharing a common vision with all members of the companies (Torugsa et al., 2012).

Afsar et al. (2020) and Chen et al. (2015) stated that this new green shared vision is an important factor that may amplify green and social practices. From the organizational perspective, shared vision is a major driving force for creating or enhancing the transition from current states to desired final states (Chang, 2020). Green shared vision is likely to mobilize the resources and knowledge, acquired earlier, namely through strategic alliances. In sum, green strategic alliances promote new knowledge and the adoption of new practices among companies, based on a common vision (Li et al., 2019b). Consequently, this new shared vision should bring information, resources, capabilities, skills, and experience that may reduce costs and risks, overcome technological constraints, achieve economies of scale, and adopt new strategies (Afsar et al., 2020; Chang, 2020; Yang & Yan, 2020). Thus, we propose the following hypothesis:

H1: Green strategic alliances can promote a green and socially shared vision.

### Green and social shared value

The concept of green shared value (GSV) is an extension of the shared value concept, which refers to the creation of value in green, environmental, and sustainable development (Campos-Climent & Sanchis-Palacio, 2017). GSV is defined as "the development of new ideas about green products, green services, green processes, or

green practices that are judged to be original, novel, and useful" (Chen et al., 2015). Shared value (SV) is a concept that is rooted in the value creation theory (Windsor, 2017). Creating shared value (CSV) is a fundamental concept of existing corporate social responsibility and philanthropic activities. Creating shared value provides members of the organization with appropriate guidelines and ideal goals so they can successfully overcome current challenges and perform work-related tasks, so they can harmonize the partners' contributions (Lapiņa & Leontjeva, 2012). The shared value model is shown in terms of basic CSV concepts, evolving in three generations. The first generation of value creation was characterized by consumers, enterprises, and governments considering only their own interests and interests; there is no interaction between the three, and economic and social development is only understood from the level of cost and efficiency between economic agents. The second-generation value creation started when the different economic agents of the market generate touchpoints; economic agents recognize the economic and social relevance of the core activities they pursue, to expand their own values and begin to pursue common values. But at this stage, the three begin to understand the creation of economic value and the creation of social value separately; thus, they must face and adapt to limitations, reducing continuity and stability. Generation 3 is different from generations 1 and 2 and starts with value creation at the intersection. The three deeply assume each other's relevance of the value they pursue and expand the total amount of shared value by creating economic and social value, at the same time. Generations 1 and 2 pursue independent value, in the current value stage, but the value creation of the third generation is based on cooperative relations. The theory of CSR is equivalent to second-generation value creation while SV theory is equivalent to generation 3 value creation.

Porter (1991) stated that the theory of value creation stimulates the advancement of companies, as it strengthens competitiveness, integration into new markets, and the shared value related to social and environmental issues. Through green strategic alliances, leaders can learn new visions and assume new values that, after, they may share

internally, namely resources, experience, patents, and capabilities (Sun et al., 2019). During exploration and development activities, members responsible for disseminating learning within companies may have to deal with resistance. However, shared values can help to overcome conflicts and contradictions, when alliance members exchange resources and capabilities (Campos-Climent & Sanchis-Palacio, 2017). By combining alliances, companies can create diverse values, far beyond the simple individual partnership (Wassmer & Dussauge, 2011). Despite the lack of empirical testing, theory developments lead to the following hypothesis:

H2: Green strategic alliances can promote the creation of green shared values.

### Green Organization Identity

Organizational identity is conceptualized here as the collective understanding, shared among organizational members and critical audiences, of the defining elements that encompass what the organization "is" (Georgallis & Lee, 2020). In this sense, organizational identity can be regarded as the collective cognitive framework of an organization that influences the organization's interpretation process and its members' cognition and actions (Chang & Hung, 2021). The green organizational identity helps individual members establish a common concept and vision of the company, helping them to understand the connection between the company's environmental and social management goals and business activities, integrating environmental and social protection awareness into their daily work (Liu et al., 2021). For the whole company, it can be seen as a solution to improve the quality of the internal climate and human relationships, developing cognitive attitudes about environmental and social protection (Chang & Hung, 2021).

Green organization identity (GOI) refers to "an interpretive scheme about environmental management and protection that members collectively construct to provide meaning to their behaviors" (Chen, 2011). Green organizational identity is consequential because it influences what corporate members pay attention to, and how they process and interpret

information (Dutton & Dukerich, 1991; Gioia et al., 2013). It also affects external stakeholders' expectations, and thus organizations are positively rewarded when they engage in activities consistent with their identity (Anthony & Tripsas, 2016). In recent years, studies on green organizational identity have grown, and they are giving practical meaning to the new green behaviour of corporate environmental management (Chang & Hung, 2021; Shafique et al., 2021).

Relevant studies are showing that green organizational identity significantly impacts companies' performance in several different outcomes. Wei and Clegg (2018) explain that green organizational identity contributes to improving employees' work performance and has a positive effect on corporate environmental behaviour. Green organizational identity can make employees form a positive understanding of environmental management, motivate employees to integrate and utilize new knowledge and new ideas related to green innovation, and then actively participate in green innovation behaviour and meeting consumers' environmental needs (Chang & Chen, 2013; Song et al., 2019). Other studies showed that green organization identity affects green innovation performance. A green organization identity would ensure competitive organizational advantages and increase the quality and quantity of corporate innovation, and competitiveness (Chang & Hung, 2021). Therefore, studies that address the investigation of the antecedents of the GOI are necessary, since the development of the GOI can further improve the performance of green management of companies and maintain sustainable development (Liu et al., 2021).

### Green shared vision

Studies showed that the articulation of a shared vision and employee corporate social responsibility involvement may potentiate the worker's psychological empowerment and organizational development, reinforcing organizational identity (Chang, 2020). In fact, the shared vision is considered one of the leading forces in creating or improving

transitions from current conditions to desired organizational outcomes (Chang, 2020). A shared vision capability exists when managers communicate organizational goals to members, sharing social responsibility for achieving organizational goals. These capabilities provide the basis for action within the organization, ensuring convergence toward long-term goals (Pearce & Ensley, 2004) and organizational identity, a green organizational identity (Chang & Hung, 2021; Song et al., 2018). The green and social shared vision refers to developing a common idea that aims to respect the society and environment (Chen et al., 2014). This new concept derived from the shared vision believes that sharing green and social values is a clear and successful strategy to achieve the collective environmental and social goals (Chen et al., 2015), and build a green identity (Afsar et al., 2020; Chang, 2020). Therefore, according to Chang (2020), a shared green vision is the basis to generate a green organizational identity. Literature on these topics is scarce and so is empirical testing. However Osagie et al. (2020) state that it is important to develop core learning capabilities, namely shared vision, developing and testing mental models and thinking systems for implementing CSR, and consolidating a green identity. Therefore, we propose to investigate the following hypothesis:

H3: Green and social shared vision contributes to green organizational identity.

### Green shared value

Green shared value is a recent concept in the literature, establishing that the creation and transfer of green value within an organization can promote sustainable changes in the company's practices (Høvring, 2017; Yang & Yan, 2020), and in the core values they share. Green shared value looks at the surrounding environment and society as part of the business model and Chen (2011) showed that companies should enhance their shared value and environmental leadership to raise their green organizational identity. Organizational identity depends on the understanding of the connection between responsibilities and tasks of the company's members, knowing that this green shared value is an essential component of the internal culture and that environmental concerns

are basic foundations of the organizational identity (Chaurasia et al., 2020; Chen et al., 2020; Yang & Yan, 2020). Thus, Jamali (2006) concludes that companies should have specific learning characteristics to promote new green practices. Likewise, Siebenhüner and Arnold (2007) concluded that implementing new ideologies about social responsibility and learning organizations are connected via learning mechanisms. In sum, the association between green shared value and green organizational identity has been explored mainly conceptually, whereas there is a need for more clarity about the actual associations through empirical studies (Osagie et al., 2020). Therefore, the following hypothesis is proposed:

H4: Green shared value contributes to green organizational identity.

## Sustainable performance

Sustainable performance is a strategic approach, its focus not only on efficiency and effectiveness, but also on the company's productivity and competitive advantages in the long term, following the three dimensions of sustainability (environment, social, and economic) (Kocmanová et al., 2011; Perrini & Tencati, 2006). The concept that covers the three dimensions of sustainability was introduced by Elkington and denominated by the "triple bottom line" (Elkington, 1998). Moreover, being sustainable requires not only an evaluation of corporate economic performance but also a good understanding of the comprehensive impacts of engagement on the environment and society (Wang et al., 2020). Other authors argue that sustainability performance is based on the efficient use of resources, waste reduction, promotion of social reputation, development of better preferences, and the ability to generate green innovation (Banerjee, 2001; Bhupendra & Sangle, 2015; Christmann, 2000). Nowadays it is quite consensual that sustainability performance has to consider 3 basic dimensions: environmental performance generally refers to the number of resources a company uses in its operations (e.g. energy, land, water) and the by-products its activities create (e.g. waste, air emissions, chemical residues, etc.); social performance generally refers to the impact a company (and its suppliers) has on the communities in which it works; economic performance focus on sales growth, return on equity, return on assets and gearing (Hubbard, 2009). Weerts et al. (2018) state the contextual and dynamic nature of sustainability, from the perspective of stakeholders, its requirements, time, geographical location and business type, and continuous learning are needed to deal with increasingly complex and many-a-times interrelated issues, in interaction with the diverse range of stakeholders.

## Green shared vision and sustainability performance

According to Chang (2020) green shared vision positively affects organizational behaviour and citizenship for the environment. The author concludes his work by highlighting that to improve the performance of green management, gain the preference of green

consumers and achieve sustainable consumption goals, organizations need to have a shared green vision that reaches the different hierarchical levels of organizations. Afsar et al. (2020) concluded that a green shared vision positively affects pro-environmental behaviour (Afsar et al., 2020). Additionally, Chen et al. (2014) revealed that a shared vision fosters the ability of companies to radically change their green performance (Chen et al., 2014).

The development of a shared green and social vision is considered an essential factor for a company to obtain sustainable development, are now highly regarded questions by various stakeholders (Chang, 2020). The green shared vision encourages the development of an internal shared vision that aims to respect the environment and society. Moreover, building on the green shared vision research, it is argued that the green shared vision is also likely to serve as a potential pathway to influence employee's pro-environmental behaviours (Afsar et al., 2020), and consequently, sustainable companies' performance (Chang, 2020). The development of a GSSV is a basic precondition to successfully overcome current challenges and perform tasks related to sustainability (Chen et al., 2014):

H5: Green and social shared vision contributes to sustainability performance.

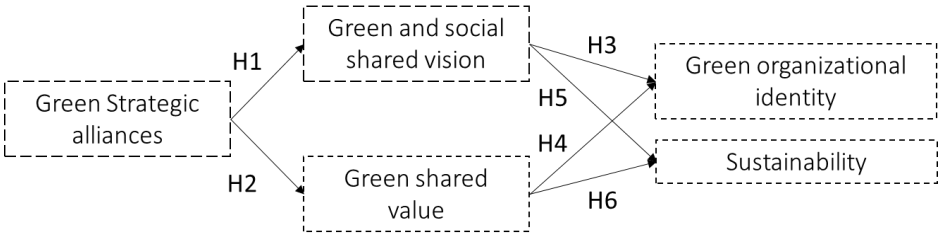
### Green shared value

Shared Value is not social responsibility, philanthropy, or pure sustainability, but a new way for companies to achieve success (Porter & Kramer, 2011). Companies pursuing their sustainable development goals, need to create a shared value strategy, which may improve economic value while simultaneously creating social and environmental value (Chang, 2020). Lapiņa and Leontjeva (2012) state that creating green shared value seems to bring around a new look on corporate social responsibility. Yang and Yan (2020) state that green shared values would be beneficial to economics, society, and the environment. According to these authors, organization learning theory posits that the spill-over effects based on the network relationships, knowledge diffusion, and social network support,

may amplify the alliance collaboration, increase shared value (Chaurasia et al., 2020) and boost positivecorporate sustainable performance (Yang & Yan, 2020). The literature regarding the sharing of green value and sustainability is scarce, especially, empirical testing. However, the production of green shared value might be the main driving force of increased performance, especially sustainable performance (Yang & Yan, 2020) in its 3 main pillars: economic, social, and environmental. Therefore, we propose to investigate the following hypothesis:

H6: Green shared value contributes to sustainability performance.

Figure 16 - Conceptual model 3



## 7.3. METHOD

### 7.3.1. Sample and data collection

The data was collected through a structured questionnaire applied in Portugal and China, translated into the respective language, to test the proposed investigation model and the research hypotheses. The questionnaire was used online. We used a snowball approach, based on the initial selection of 20 companies, asking each one of them to name and invite 5 other companies, to answer this questionnaire.

The samples comprise valid responses from 200 Portuguese and 303 Chinese companies. Table 30 summarizes the characterization of the two samples showing that industry is more presented in the Chinese sample while the Portuguese sample is based on rather SMEs. The Chinese sample is made of older companies and respondents present a similar distribution in both samples.

Table 30 - Samples profile

| | Portugal | China |
|---|---|---|
| **Services** | 79 | 95 |
| **Industry** | 121 | 196 |
| **Size** | | |
| - Small (less than 50 employees) | 49% | 11% |
| - medium (between 51 and 250 employees) | 25,5% | 43% |
| - Large (more than 250 employees) | 25,5% | 45% |
| **Respondents** | | |
| - Direction | 27,5% | 18% |
| - Management | 47% | 56% |
| - Operational | 25,5% | 26% |
| **Time in Company** | | |
| - **> 25 years** | 31 | 22 |
| - **10-25 years** | 36 | 45 |
| - **5-9 years** | 34 | 69 |
| - **< 5 anos years** | 99 | 169 |
| **TOTAL** | 200 | 303 |

Studying these two countries is related to the fact that they are both developing countries but facing intense internal and external pressures to improve their social responsibility and environmental sustainability (Manzhynski & Figge, 2020).

Despite the uniqueness of each country in its governance structures and the geographical distance, that differentiates them, both countries have leadership styles based on close relationships, positive group influence, and cultural characteristics of collectivism and long-term orientation (Amaral et al., 2017; Edeh & Zhao, 2021). This means that both Portuguese and Chinese leaders use available resources to focus on long-term sustainability rather than short-term results. Wang et al. (2015) argued that these leaders face increasing pressure to be environmentally proactive by seeking environmental solutions that simultaneously address pollution problems, and increase sustainability performance and economic competitiveness. Also, in Europe, since 2007, the major strategic decisions from the European Union involve eco-innovation as an essential factor in achieving a resource-efficient Europe (Mavi & Mavi, 2021).

### Measures

Measurement was based on scales developed and tested in previous investigations, respecting the original structure, and formulation, and introducing the necessary adaptations. This adaptation included translating English to Portuguese and Chinese, making it easier for respondents to understand the questionnaire. Scale items are shown in table 31. A seven-point Likert scale was used, and participants were instructed to score each item from 1 (“strongly disagree”) to 7 (“strongly agree”).

Table 31 - Measurement scales

| Construct | Item | Loadings Portugal | Loadings China |
|---|---|---|---|
| **Green Strategic Alliances** (Ferreira et al., 2021a; Schilke & Cook, 2013) | Activities undertaken with alliance partners are well coordinated. | 0.973 | 0.854 |
| | There are guarantees that the work tasks align with the alliance partners. | 0.950 | 0.865 |
| | There are guarantees that the work performed coincides with the work of the alliance partners. | 0.889 | 0.895 |
| | There is a great deal of interaction with alliance partners in most decisions. | 0.949 | 0.849 |
| | There are guarantees of adequate coordination between the activities of the different alliances. | 0.956 | 0.883 |
| | The company determines areas of synergy in the alliance portfolio, including green alliances. | 0.972 | 0.888 |
| | Some guarantees identified interdependencies between alliances, including “green alliances.” | 0.983 | 0.902 |
| | Potential overlaps between different alliances, including “green alliances,” are evaluated. | 0.980 | 0.870 |
| | The company can learn from alliance partners, including “green alliances.” | 0.952 | 0.829 |
| | The company has management skills to absorb new knowledge from alliance partners, including “green alliances.” | 0.929 | 0.847 |
| | The company has good routines to analyse information obtained through alliance partners, including “green alliances.” | 0.955 | 0.869 |
| | The company can successfully incorporate new information acquired from alliance partners into existing knowledge, including “green alliances.” | 0.952 | 0.871 |
| | The company strives to anticipate competitiveness by entering new alliances, including “green alliances.” | 0.972 | 0.860 |
| | Often, the company approaches other companies with alliance proposals, including “green alliances.” | 0.977 | 0.876 |
| | Compared to the competition, the company is more proactive and agile in finding new alliance partnerships, including “green alliances.” | 0.980 | 0.898 |
| | We actively monitor the environment to identify opportunities for partnerships, including “green alliances.” | 0.956 | 0.896 |
| | The company is willing to set aside contractual terms to improve alliances’ results, including “green alliances.” | 0.934 | 0.860 |
| | When an unexpected situation arises, the company prefers to modify an alliance agreement by including “green alliances” rather than insisting on the original terms. | 0.914 | 0.917 |
| | The company is flexible in the face of requests to change its alliances, including “green alliances.” | 0.955 | 0.896 |
| **Sustainability** (Bacinello et al., 2019) | The company takes action to reduce costs in materials management. | 0.901 | 0.826 |
| | The company carries out waste management actions to obtain profits. | 0.798 | 0.827 |
| | The company carries out actions to manage derived technologies. | 0.894 | 0.837 |
| | The company takes action to reduce water costs. | 0.879 | 0.869 |
| | The company takes action to reduce energy costs. | 0.848 | 0.888 |
| | The company has economic value creation processes. | 0.870 | 0.844 |
| | The company pays attention to corporate reputation management. | 0.769 | 0.857 |
| | The company advertises its social actions. | 0.908 | 0.847 |
| | The company carries out actions to promote executive education and learning. | 0.829 | 0.873 |
| | The company manages equal opportunities. | 0.866 | 0.832 |
| | The company manages working practices and focuses on good practices and conditions. | 0.911 | 0.895 |
| | The company presents the management of social actions. | 0.866 | 0.879 |
| | The company has processes for creating social value. | 0.883 | 0.791 |

Table 31 - Measurement scales (cont.)

| Construct | Item | Loadings Portugal | Loadings China |
|---|---|---|---|
| **Sustainability** (Bacinello et al., 2019) (cont.) | The company has actions aimed at managing environmental legislation. | 0.906 | 0.863 |
| | The company focuses on managing "clean" technology. | 0.937 | 0.865 |
| | The company manages environmental issues, focusing on minor use of available resources. | 0.939 | 0.875 |
| | The company promotes sustainable actions to use natural resources. | 0.945 | 0.870 |
| | The company presents actions to encourage environmental programs. | 0.930 | 0.848 |
| | The company presents actions to treat effluents and waste to minimize air, water, and soil impacts. | 0.856 | 0.867 |
| | The company presents processes for creating environmental value. | 0.942 | 0.848 |
| **Green Shared Value** (Chen et al., 2020; Chen et al., 2015) | (8) A commonality of environmental and social goals exists in the company. | 0.928 | 0.900 |
| | (9) A total agreement on the strategic environmental and social direction of the organization. | 0.948 | 0.906 |
| | All members of the organization are committed to environmental and social strategies. | 0.496 | 0.932 |
| | Employees of the organization are enthusiastic about the collective environmental and social mission of the organization. | 0.960 | 0.908 |
| **Green and social shared vision** (Fontoura & Coelho, 2020b) | (4) The benefits arising out of the relationship are shared between both organizations. | 0.868 | 0.788 |
| | (5) In emergency situations, both companies rely on the support of the other part. | 0.906 | 0.785 |
| | (6) The management and corporate styles of the companies are similar. | 0.885 | 0.803 |
| | (7) There is transparency in negotiations. | 0.909 | 0.812 |
| | (8) There are proposals for projects aiming to reduce costs. | 0.900 | 0.802 |
| | (9) There is a priority in the assistance related to other buyers. | 0.839 | 0.787 |
| | There is a priority in offering innovations related to other buyers. | 0.936 | 0.830 |
| | There is quality conformance to products and services. | 0.940 | 0.815 |
| | There is rapid confirmation of buyer orders. | 0.947 | 0.800 |
| | There is financial health. | 0.906 | 0.762 |
| | There is flexibility to meet requests for changes. | 0.925 | 0.797 |
| **Green Organizational Identity** (Chang, 2020; Chen, 2011) | (1) The company's top managers, middle managers, and employees have a strong sense of the company's history of environmental management and protection. | 0.941 | 0.869 |
| | (2) The company's top managers, middle managers, and employees have a sense of pride in the company's environmental goals and missions. | 0.965 | 0.879 |
| | (3) The company's top managers, middle managers, and employees feel that the company has carved out a significant position concerning environmental management and protection. | 0.957 | 0.855 |
| | (4) The company's top managers, middle managers, and employees feel that the company has formulated a well-defined set of environmental goals and missions. | 0.923 | 0.870 |
| | (5) The company's top managers, middle managers, and employees are knowledgeable about the company's environmental traditions and cultures. | 0.810 | 0.865 |
| | (6) The company's top managers, middle managers, and employees identify strongly with the company's actions concerning environmental management and protection. | 0.879 | 0.849 |

## Model

Tables 32 and 33 show the results of the estimation of the measurement model and CFA for Portugal and China, correspondingly. Composite reliability (CR) and the average variance extracted (AVE) were computed. All the scales showed values above 0.7 on CR and above 0.5 on AVE, which align with the recommendations (Hair et al., 1998). Discriminant validity is evidenced by the fact that all correlations between the constructs are significantly smaller than one. The squared correlations calculated for each pair of constructs are always smaller than the variance extracted for corresponding constructs (Shiu et al., 2011).

Table 32 - Square Correlations, Cronbach´s Alpha, Composite reliability, and Average Variance Extracted for Portugal

| Construct | X1 | X2 | X3 | X4 | X5 | CR | AVE |
|---|---|---|---|---|---|---|---|
| Green Strategic Alliances (GSA) | **0.993** | | | | | 0.99 | 0.91 |
| Green and Social Shared Vision (GSSV) | 0.193 | **0.826** | | | | 0.98 | 0.82 |
| Green Shared Value (GSV) | 0.168 | 0.006 | **0.981** | | | 0.91 | 0.73 |
| Green Organizational Identity (GOI) | 0.274 | 0.327 | 0.116 | **0.969** | | 0.97 | 0.84 |
| Sustainability (S) | 0.477 | 0.277 | 0.144 | 0.416 | **0.984** | 0.99 | 0.78 |

Diagonal in bold- Cronbach's Alpha; CR- Composite Reliability; AVE- Average Variance Extracted.

Table 33 - Square Correlations, Cronbach´s Alpha, Composite reliability, and Average Variance Extracted for China

| Construct | X1 | X2 | X3 | X4 | X5 | CR | AVE |
|---|---|---|---|---|---|---|---|
| Green Strategic Alliances (GSA) | **0.968** | | | | | 0.98 | 0.77 |
| Green and Social Shared Vision (GSSV) | 0.432 | **0.951** | | | | 0.95 | 0.64 |
| Green Shared Value (GSV) | 0.397 | 0.174 | **0.951** | | | 0.95 | 0.83 |
| Green Organizational Identity (GOI) | 0.530 | 0.241 | 0.262 | **0.947** | | 0.95 | 0.75 |
| Sustainability (S) | 0.533 | 0.244 | 0.334 | 0.416 | **0.973** | 0.98 | 0.73 |

Diagonal in bold- Cronbach's Alpha; CR- Composite Reliability; AVE- Average Variance Extracted.

## Common method variance

To reduce the risk of common method variance, we used some procedural methods suggested by Podsakoff et al. (2003): (1) all respondents were guaranteed anonymity and the confidentiality of the information collected, and were assured that there were no right or wrong answers; (2) there was randomness in the ordering of multiple items; (3) there was no use of scales with bipolar numerical values or verbal designations for the mid-points of the scales; (d) the questionnaire was divided into several sections with a brief explanation, reducing the risk of common method bias (Brammer & Millington,

2008). However, statistical tests were carried out to explore the possible effects of common method variance. A principal component analysis (unrotated solution) of all the items revealed seven factors with eigenvalues above 1 and none explained more than 23% of the variance.

## 7.4. FINDINGS

The results presented on Table 34 support our hypotheses for Portugal and China. Green strategic alliances are positively related to green and social shared vision and green shared value (β = 0.444; β = 0.665, p < 0.001 and β = 0.999; β = 0.641, p < 0.001, respectively), therefore Hypotheses 1 and 2 are supported. The path association between green social shared vision and green organizational identity and sustainability are significant (β = 0.550; β = 0.345, and β = 0.506; β = 0.314 p < 0.001), supporting Hypotheses 3 and 4. Green shared value shows a significant relationship with green organizational identity and sustainability (β = 0.299; β = 0.380 and β = 0.426; β = 0.457; p < 0.001), which indicates that Hypotheses 5 and 6 are supported.

Table 34 - Results of the structural model for Portugal and China

| Hypothesis | Relationship | SRW | C.R. | P | SRW | C.R. | P | Supported/Not supported |
|---|---|---|---|---|---|---|---|---|
| H1 | GSA → GSSV | 0.446 | 6.661 | *** | 0.665 | 10.658 | *** | Supported |
| H2 | GSA → GSV | 0.417 | 6.133 | *** | 0.641 | 10.994 | *** | Supported |
| H3 | GSSV → GOI | 0.550 | 8.887 | *** | 0.345 | 5.943 | *** | Supported |
| H4 | GSSV → S | 0.506 | 8.196 | *** | 0.314 | 5.519 | *** | Supported |
| H5 | GSV → GOI | 0.299 | 5.134 | *** | 0.380 | 6.636 | *** | Supported |
| H6 | GSV → S | 0.426 | 5.803 | *** | 0.457 | 7.869 | *** | Supported |
| PORTUGAL (n=200) | | | | | CHINA (n=303) | | | |

*** = p<0.01; ** = p<0.05; * = p<0.1; NS: non-significant

Note: GSA: Green Strategic Alliances; GSSV: Green Social Shares Vision; GSV: Green Shared Value; GOI: Green Organizational Identity; S: Sustainability

## 7.5. DISCUSSION

In this study, we explored the influence of green strategic alliances on sustainability and green organizational identity, considering the effects of green shared value and green and social shared vision. This objective aims to respond to the gap in the literature, which doesn't explain how partnerships influence green organizational identity and sustainable performance, using green shared value and shared vision to link and transfer the proposed effects (Chang, 2020; Høvring, 2017; Nguyen & Johnson, 2020).

Currently, several studies in the sustainability area have emerged, as environmental and social issues are becoming increasingly important for society and, consequently, for companies (Hussain, Rigoni, & Orij, 2018). Most of these studies reinforced that companies' transition to this new green paradigm is only possible using new capabilities, and new knowledge (Zhang & Zhu, 2019). Green strategic alliances promote the sharing of cultural aspects, values, knowledge, and technology (Niesten & Jolink, 2020; Pooe & Munyanyi, 2019). When partners share the same values and attitudes towards CSR, even at different levels (Akpotu & Jasmine, 2016; Islam et al., 2018), they tend to induce other partners in the same direction, leading them to adopt and improve sustainable actions, processes, and product outcomes.

Zhao et al. (2008) consider that when companies are committed to each other and share information among them, the relationship between them tends to build a collaborative and long-term oriented culture. Choi et al. (2015) consider that when business partners develop shared value and growth efforts as a value-enhancing strategy, they can effectively contribute to shared value creation and to the value improvement of companies.

The results point out a positive relationship between GSA and GSV and GSSV for both countries. These results corroborate the supporting literature, as far as strategic alliances promote the acquiring of new capabilities, which may improve their sustainable performance, through sharing information, resources, capabilities, values and skills, and new knowledge (Aragón-Correa et al., 2008; Glasbergen & Groenenberg, 2001; Przychodzen & Przychodzen, 2018).

Our results and recent literature seem to go in the same direction, showing that the creation of a green shared vision improves sustainable performance and a new and green organizational identity. In fact, the creation of a green shared vision means committing all members of the alliance, first, and the company, next, to sustainable actions and sustainable goals. With this common vision, it is expected that companies will have a greater capacity to adopt and apply more sustainable practices as well as change their identity to a greener and more social one (Afsar et al., 2020).

Therefore, companies become more sustainable and adopt a green identity when they can change the collective understanding of socially responsible practices (Chang & Hung, 2021). Specifically, our results show that sharing more sustainable corporate values facilitates the adoption and reinforcement of a greener identity and a long-term environmental orientation, leading to sustainable performance improvement (Chaurasia et al., 2020).

The overall results are supported by value creation and organizational learning theories, combined, as they demonstrate that through green strategic alliances, companies can capture external knowledge and capabilities that they introduce and disseminate internally, through knowledge transfer processes (Niesten & Jolink, 2020), improving sustainable performance and facilitating organizational identity change (Chang & Hung, 2021; Liu et al., 2021).

There results from Portugal's and China are quite similar, even if a few differences may be identified. These results can be justified because they are from two developing countries with a common denominator, the growing concern with corporate social responsibility and corporate sustainability. China is a tendentially hierarchical society, with an authoritarian regime (Rodríguez-Rivero et al., 2020) and collectivism may prevail based on the caring of all community members, and Portugal goes in the same direction (Rodríguez-Rivero et al., 2020; Song et al., 2019). In fact, despite the rigidity of Chinese culture, currently, the country has developed the One Belt One Road-OBOR, which demonstrates that China intends to start a cultural revolution and open to the world through leadership and approaching Western cultures (Edeh & Zhao, 2021). China's rapid

growth has boosted its innovation capabilities, and society's dynamic development pattern also provides a unique opportunity for transitions to more sustainable companies (Ely et al., 2016). According to Yang et al. (2021), the Chinese government has launched a set of environmental policies that encourage the establishment of green alliances. Regarding Portugal and according to the European Commission's eco-innovation plan, Portugal is in the tenth position, highlighting that despite its evolution, it is still below expectations, and it needs strong policies that promote eco-innovation, namely regarding the private sector and internal management of organizations (Eco-Innovation in Portugal, 2017).

Despite the countries´ geographic distance and singularities, both are in a transition phase looking for a new identity for the business market, focused on sustainability. Based on the results achieved, we posit that organizational change, organizational green identity, and organizational sustainable performance are largely dependent on the organization's ability to acquire knowledge, adapt its business model and, based on strategic alliances that promote a green and social shared vision as well as a green shared value. However, GSA appears to have more impact on GSV and GSSV, in the Chinese sample, which maybe because Chinese companies need more knowledge and a bigger cultural change (Pan et al., 2021; Song et al., 2019; Zhang et al., 2020), that might be boosted by the participation in alliances dedicated to green engagement (Niesten & Jolink, 2020). The combination of acquiring external knowledge and shared value with external partners, and then internalizing them to change culture, identity, and sustainable performance, might be decisive for Chinese companies (Song et al., 2019). Therefore, the impacts on identity and on sustainability performance are, thus, bigger in China, too, when talking about green shared value. On the contrary, the development of a green and socially shared vision seems to produce bigger results in the Portuguese sample. These differences are bigger on the identity issues, showing that comparing Chinese and Portuguese companies, the former seems to be more successful in developing a long-term vision, while the latter seems to be more focused on producing results (Chang & Chen, 2013; Chen, 2011).

## 7.6. IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

### Theoretical implication

This investigation analyses the impact of green strategic alliances on green organizational identity and sustainability performance, through green and social shared vision and green shared value. This study focused on two countries that, despite being geographically distant and economically different, have in common the fact that they are transition economies with a growing awareness of sustainable challenges, and need to adopt a greener and an environmentally engaged culture.

Therefore, our investigation presents three major implications: Developing a framework where external culture, values, and knowledge based on the integration in strategic alliances dedicated to social and environmental issues, may help companies become more sustainable and more green, with this greening ingrained in the organization's identity; combining value creation theory and organizational learning theory, we propose the right arguments to explain how GSV and GSSV may transfer their effects form external sourced knowledge to develop a green identity and increase sustainability performance; we considered two databases from 2 different countries that, although quite different, have the same level of sustainable development in common and face similar sustainable challenges, showing the importance of external knowledge based on strategic alliances, to improve the social and environmental culture of both countries' companies, showing, at the same time, how the general theory is applicable to both realities and results are stable across countries and cultures.

### Practical implications

Our research also presents practical implications that will be of interest to different stakeholders: managers can understand the importance of creating green strategic alliances that, through their leadership, influence the development of sustainable practices and can even promote a new corporate culture; through the sharing of values and a more sustainable vision, companies can improve their sustainability performance and change their green identity, approaching market preferences and thus responding to

the increased current pressure of society in general; as a potential investor, he may realize that investing in companies that demonstrate this vision of the whole can be important for the balance of social justice, equity, and the reduction of the ecological footprint that will make the world better.

## Limitations and Future Research

Regarding our main limitations, we have considered: Our investigation uses cross-sectional data that inhibits the comparison with other periods and limits the establishment of a clear causality. This investigation is based on a convenience sample. Uses one single key informant which may rise the common method issues.

For future research could be interesting to collect data from different respondents, at different moments in time. Also, it is important to apply other methodologies or combine qualitative and quantitative methodologies to establish clear causality between constructs. In other studies, it is important to dissect the role of a green entrepreneurial orientation, green innovation employees. Additionally, it is important to study other important variables, namely cultural aspects, and institutional factors, as drivers of sustainable performance, and green organizational identity progress.

# CHAPTER 8

## HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

### GENERAL CONCLUSION, CONTRIBUTIONS, MANAGEMENT IMPLICATIONS AND FUTURE RESEARCH

# CHAPTER 8 – GENERAL CONCLUSION, CONTRIBUTIONS, MANAGEMENT IMPLICATIONS AND FUTURE RESEARCH

## 8.1. GENERAL CONCLUSION

The present investigation was devoted to CSR and sustainability, exploring the factors leading to its development, including their impact on innovation, sustainability, and green organizational identity. We investigated the internal factors, including high order dynamic capabilities and ambidexterity that may contribute to CSR as well as how green strategic alliances can bring a green culture through learning that may reinforce internal green orientation and sustainable performance.

The first study, a bibliometric analysis, explored the connections between corporate social responsibility and leadership. In sum, this study showed that in future research it is important to promote large-scale investigations, including comparative studies (Galbreath, 2018; Yuan et al., 2020; Zhou et al., 2021). At the same time, the importance of comparing different countries and cultures exploring the developments in eastern countries, was highlighted, namely regarding governance structures, and cultural issues (Duanmu et al., 2018; Javed et al., 2020; Miska et al., 2018; Nie et al., 2018; Sharma & Jaiswal, 2018; Yuan et al., 2020; Zhou et al., 2018).

As it was a literature review and preliminary study, it allowed us to coordinate and guide our future investigations. Two different countries (Portugal and China) were studied, as well as Intra organizational learning mechanisms and stakeholder roles.

Our empirical investigation aimed to respond to gaps initially identified in the literature, which resulted in several theoretical and managerial implications. We hope to help researchers and managers to advance in this field of business management. Firstly, our study revealed the importance of green strategic alliances for companies' corporate social responsibility and competitiveness. Green strategic alliances promoted the sharing of knowledge, technology, values, and cultural aspects (Niesten & Jolink, 2020; Pooe & Munyanyi, 2019). When partners share the same culture and attitude towards CSR, even at different levels (Akpotu & Jasmine, 2016; Islam et al., 2018), they tend to affect others,

leading them to improve actions, processes, and product outcomes. Therefore, when companies decide to enter a GSA, according to value creation and organizational learning theory, complementary knowledge and resources tend to be shared and seized, creating, and sharing value for all stakeholders, most of it related to innovation (Bouncken et al., 2020) and the development of new capabilities, based on sustainable behaviour (Sim & Kim, 2021). So, GSA may improve several sustainable adaptations in companies. However, these adaptations may not be possible without capabilities. Our results demonstrated that companies are experiencing a new context where stakeholders scrutinize their sustainable practices, but with exploration and exploitation capabilities they can answer the social responsibility problems. Dynamic capabilities are the basis for exploiting accumulated resources and competencies and developing new ones (de Moura & Saroli, 2021; Vézina et al., 2019), thus helping companies to address and take advantage of sustainability. Companies´ transition is only possible through intra-organizational transitions, new capabilities, and the capacity to learn new knowledge.

In the long term, companies learn from their green partners, resulting in improvements at distinct levels. With strong green partnerships companies can improve the economic dimension, sharing lower risks and costs (Niesten & Jolink, 2020); the social dimension, improving citizens' quality of life, ensuring that future generations are not harmed (Cheng & Shiu, 2012); and the environmental dimension, focusing on cleaner technologies, reducing the consumption of limited natural resources (Schilke & Cook, 2013). Then, our results showed solid statistical evidence that CSR practices promoted sustainable innovation in products and processes. These practices are considered a proactive strategy for companies to generate a significant social reputation, better skills, and enhanced competitive advantages based on greater ability to succeed in innovation (Bhupendra & Sangle, 2015; Voegtlin & Scherer, 2017).

The literature reveals that companies used these strategic alliances to create value for different stakeholders in CSR practices (Glasbergen & Groenenberg, 2001; Przychodzen & Przychodzen, 2018). The results obtained lead to the conclusion, that organizational change in response to sustainability's complexity and the creation of a green

organizational identity depends, in part, on the organization's ability to innovate its business model and develop strategic alliances that promote a green and social shared vision as well as a green shared value among different partners, subsequently internalizing it to be greener and more sustainable.

## 8.2. CONTRIBUTIONS AND MANAGEMENT RECOMMENDATIONS

### Theoretical implications

This investigation presents several contributions: Firstly, it provides an understanding of the evolution of corporate social responsibility and sustainability concepts and several new concepts of green management. Secondly, and based on content analysis, future trends and opportunities are proposed according to the gaps identified and future proposals from the authors. The main contribution of the first article lay in identifying gaps and guiding our empirical studies.

Additionally, this study advances current research by including several theories to explain the crucial determinants and consequences of corporate social responsibility: based on dynamic capabilities theory, this investigation develops a novel framework for the balancing of exploration and exploitation to explain the development of CSR on companies; supported by organizational learning and value creation theory, this study promotes de new view of green strategic alliances, how a method to promoting higher levels of CSR through the acquiring of new knowledge and resources.

We studied dynamic capabilities, demonstrating their importance in companies' development, specifically innovation development. Our study explored the role of consumers, demonstrating that this is crucial in companies' sustainable practices, based on their pressure and demands. Our studies contribute to understanding of the role of sustainability both as an outcome of companies' capabilities and a driver of innovation and market performance, establishing the chain of effects that explains companies' greening. Additionally, we explore these effects through different inputs, ambidexterity (exploration and exploitation) and green strategic alliances to promote an overview of social responsibility development. So, the main contribution of this investigation is the integrated study of relevant variables, which may highlight future changes toward improved green management. The study of two different countries may serve to fill theoretical gaps and increase knowledge.

Finally, the current research complements present literature in the fields of business ethics, social responsibility, and management in several ways: first, corporate social

responsibility is likely to impact several stakeholders significantly. Thus, our finding presents novel insight into the mechanisms through which partnerships and dynamic capabilities influences social responsibility. Therefore, this study documents important and yet unestablished relationships, advancing research on social responsibility subject.

### Management contributions

As sustainable challenges are the order of the day, companies must pay attention to the capabilities they must acquire and train internally to become more sustainable. Our analysis will help business leaders to understand their role in developing social responsibility. This finding not only provides guidance and reference for senior leaders who are interested in applying CSR in corporate strategy, but also for new leaders as they emerge. Leaders are responsible for defining the company's strategy and this study reinforced the importance of managers aligning their objectives with social responsibility practices and directing new developments.

This study supports managers as it demonstrates that developing ambidexterity through an efficient use of resources and capabilities, as well as investing in new areas of innovation is an important aspect of current management. They must recognize the importance of creating strategic alliances to develop innovation. Strategic alliances are inter-firm collaborations that involve the use of resources and knowledge structure of independent firms to promote an organization-related sustainable innovation goal. Through learning processes and developing dynamic capabilities, companies promote inclusive and efficient adaptations, adding respect for the environment which may improve the development of sustainable practices and even promote a new corporate culture. Green strategic alliances can simplify the flow of valuable information and enable the dissemination of clean technologies, with an impact on social responsibility. Nowadays, companies have scarce resources to invest in new ideologies or new practices, namely, sustainable practices and innovation. However, through strategic alliances and subsequent learning and capabilities, they can easily achieve innovations and higher sustainable performance, using fewer resources. Companies can improve green

innovation and increase their success in the market through green differentiation, based on learning and new knowledge, which might be obtained from partnerships. CSR is much more than an obligation: it is an opportunity to differentiate from competitors and increase competitiveness.

## 8.3. LIMITATIONS AND FURTHER WORK

This work has some inherent limitations that should be addressed in future research. Data collection is based on potential non-probabilistic sampling. At the same time, cross sectional data might not be ideal to establish strict causality. The first study focused specifically only on the Portuguese industrial sector, but subsequent studies studied two countries and two databases. Quantitative and longitudinal studies would bring additional comprehension to the linkages presented.

In future research, it could be interesting to collect data from different respondents, something which was only done in the first empirical study. It is also important to apply other methodologies or combine qualitative and quantitative methodologies. Additionally, it is important to study other important variables, namely cultural aspects, and institutional factors, as drivers of CSR adoption, and innovation success. The role of leaders and managers, their cultures and values, their personality characteristics, may help explaining advances in CSR in organizations. At the same time, the green entrepreneurial orientation of entrepreneurs and companies may give additional insights into the willingness to engage seriously in sustainability. Moreover, the definition of new performance outcomes showing the possibilities and potential gains of green strategies and practices, would certainly make CSR and sustainability even more attractive.

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# HOW CSR IS CHALLENGING ORGANIZATIONS: FROM THE DRIVING ROLE OF GREEN STRATEGIC ALLIANCES TO GREEN INNOVATION AND SUSTAINABILITY PERFORMANCE

APPENDIXES

# APPENDIX I - SURVEY


Caro(a) Senhor(a),

Desempenha funções de gestão, administração ou direção numa empresa? Preocupa-se com a inovação da empresa na qual colabora? Tem como preocupação a sustentabilidade?

**Então tem as características certas para responder ao nosso questionário!**

https://docs.google.com/forms/d/e/1FAIpQLSfrVGqC9qthE6O6XLGKl-jRhZGcKE0zWfrHYvxqBgeqFAI4kg/viewform?usp=sf_link

O tempo estimado para preenchimento do questionário é de sensivelmente 15minutos.

Este questionário é uma parte importante do trabalho de investigação que está a ser realizado na Faculdade de Economia da Universidade de Coimbra, e que pretende estudar as temáticas da responsabilidade social e inovação.

**Agradecemos a sua colaboração…**

## Questionário

## RESPONSABILIDADE SOCIAL E INOVAÇÃO

Caro (a) gestor(a),

No âmbito de um trabalho de investigação que está a ser realizado na Faculdade de Economia da Universidade de Coimbra, e que pretende estudar as temáticas da responsabilidade social e inovação, vimos solicitar a sua colaboração através do preenchimento do presente questionário.

Ao responder ao questionário, solicitamos que assinale com uma cruz (x) ou um círculo (O) a resposta que julgar mais correta ou apropriada em relação a cada uma das afirmações. De realçar que não existem respostas certas ou erradas, e apenas solicitamos a sua verdadeira opinião. A informação fornecida é estritamente confidencial e anónima. Investigação a realizar por:

- Beatriz Lopes Cancela, aluna de Doutoramento em Gestão de Empresas da Faculdade de Economia da Universidade de Coimbra (beatrizlopesdoutoramentofeuc@gmail.com).
- Prof. Doutor Arnaldo Coelho, Faculdade de Economia da Universidade de Coimbra.
- Prof. Doutora Elisabete Neves, Coimbra Business School.

**O sucesso deste estudo depende da sua colaboração, que desde já agradecemos.**

**SECÇÃO I**

**Instruções de preenchimento:**
As próximas questões são de carácter pessoal e/ou profissional, pelo que pedimos respostas breves.

- Idade _____
- Escolaridade _____
- Função_____
- Antiguidade _____
- Nível hierárquico_____

As questões que se apresentam de seguida são relativas à empresa na qual colabora.

- Localização_____
- Maturidade _____
- Número de trabalhadores _____
- Setor de atividade_____

**SECÇÃO II**

**Instruções de preenchimento:** Para responder às afirmações que se seguem pedimos que se foque nas práticas existentes na empresa na qualcolabora.

Leia as frases a seguir e classifique cada uma, selecionando de 1 a 7 na escala, de acordo com o seu grau de identificação com cada descrição.

1 - Discordo totalmente

2 - Discordo

3 - Discordo levemente

4 - Nem concordo, nem discordo

5 - Concordo levemente

6 - Concordo

7 - Concordo totalmente

| | Discordo totalmente | Discordo | Discordo levemente | Nem concordo, nem discordo | Concordo levemente | Concordo | Concordo totalmente |
|---|---|---|---|---|---|---|---|
| A empresa faz melhorias para reduzir os impactos ambientais dos ciclos de vida dos produtos e serviços. | | | | | | | |
| Regularmente, a empresa altera produtos e serviços para reduzir o impacto negativo a nível ambiental e social. | | | | | | | |
| A empresa realiza regularmente reengenharia de processos de negócios com foco nas perspetivas verdes. | | | | | | | |
| A empresa adquiriu tecnologias e processos inovadores que respeitam o meio ambiente. | | | | | | | |
| A empresa induz o conhecimento e aptidões dos funcionários para eficiência das práticas de sustentabilidade. | | | | | | | |
| A empresa é caracterizada por uma cultura de aprendizagem que estimula a inovação para a sustentabilidade. | | | | | | | |
| A empresa atualiza o saber e as apetências dos funcionários através de práticas de responsabilidade social. | | | | | | | |
| A empresa procura fontes externas de conhecimento para obter ideias inovadoras na área da sustentabilidade. | | | | | | | |
| Respondem às questões existentes das partes interessadas de forma regular / sistemática | | | | | | | |
| A empresa avalia o seu ambiente externo na procura de questões relevantes às partes interessadas. | | | | | | | |
| Os processos de negócios são flexíveis, alcançando altos níveis de capacidade de resposta em relação às principais necessidades e exigências das partes interessadas. | | | | | | | |
| A empresa envolve as partes interessadas na criação do projeto de produto/serviço e seu desenvolvimento. | | | | | | | |
| Usa ferramentas e técnicas adequadas para reduzir a variabilidade dos processos-chave. | | | | | | | |
| Estabelece indicadores-chave de desempenho (KPI's) para determinar o cumprimento de metas sustentáveis. | | | | | | | |
| A empresa realiza ações para reduzir custos na gestão de materiais. | | | | | | | |
| A empresa realiza ações de gestão de resíduos para obtenção de lucros. | | | | | | | |
| A empresa realiza ações para gestão de tecnologias derivadas. | | | | | | | |
| A empresa realiza ações para reduzir custos de água. | | | | | | | |
| A empresa realiza ações para reduzir custos de energia. | | | | | | | |
| A empresa tem atenção à gestão de reputação corporativa. | | | | | | | |
| A empresa realiza publicidade sobre as suas ações sociais. | | | | | | | |
| A empresa realiza ações para promover a educação e a aprendizagem organizacional. | | | | | | | |
| A empresa gere a igualdade de oportunidades. | | | | | | | |
| A empresa gere as práticas de trabalho e foca-se nas boas práticas e condições de trabalho. | | | | | | | |
| A empresa apresenta uma gestão das ações sociais. | | | | | | | |
| A empresa tem processos de criação de valor social. | | | | | | | |
| A empresa tem processos de criação de valor económico. | | | | | | | |
| A empresa tem ações direcionadas para a gestão da legislação ambiental. | | | | | | | |
| A empresa foca-se na gestão da tecnologia "limpa". | | | | | | | |

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| A empresa gere as questões ambientais, focando-se no menor uso dos recursos disponíveis. | | | | | | | |
| A empresa promove ações sustentáveis para o uso dos recursos naturais. | | | | | | | |
| A empresa apresenta ações de incentivo aos programas ambientais. | | | | | | | |
| A empresa apresenta ações para tratar afluentes e resíduos com vista a diminuir os impactos no ar, água e solo. | | | | | | | |
| A empresa apresenta processos de criação de valor ambiental. | | | | | | | |
| Apesar das suas características ambientais e sociais, a empresa alguma vez terá iludido, através de palavras, sobre as suas características ambientais e sociais. | | | | | | | |
| Apesar das suas características ambientais e sociais, a empresa alguma vez terá iludido, através de imagens ou gráficos, em relação às suas características ambientais e sociais. | | | | | | | |
| Apesar das suas características ambientais e sociais, a empresa alguma vez terá assumido uma reivindicação ambiental e social que é vaga ou aparentemente impossível de provar. | | | | | | | |
| Apesar das suas características ambientais e sociais, a empresa alguma vez terá sobrevalorizado ou exagerado asua funcionalidade ambiental e social. | | | | | | | |
| Apesar das suas características ambientais e sociais, a empresa alguma vez terá ocultado informaçõesimportantes, para que a reivindicação ambiental e social seja sobrevalorizada. | | | | | | | |
| Apesar das suas características ambientais e sociais, a empresa demonstrou não se preocupar com as minorias. | | | | | | | |
| A empresa já mostrou não se preocupar com as comunidades locais. | | | | | | | |
| A empresa já mostrou não se preocupar com o meio ambiente. | | | | | | | |
| A empresa já mostrou não se preocupar com doações corporativas para causas nobres. | | | | | | | |
| A empresa tem um órgão ou um responsável pela responsabilidade social. | | | | | | | |
| A empresa dá importância à existência de um órgão ou responsável pelas questões da responsabilidade social. | | | | | | | |
| A empresa adota as práticas sociais e ambientais propostas pelos responsáveis pela responsabilidade social. | | | | | | | |
| O órgão ou responsável pelas questões de responsabilidade social conseguiu alterar ou melhorar as práticassociais e ambientais existentes na empresa. | | | | | | | |
| O órgão ou responsável pelas questões da responsabilidade social conseguiu unir esforços na organização paraa disseminação de práticas mais sustentáveis. | | | | | | | |
| O órgão ou responsável pelas questões da responsabilidade social tem impacto na estrutura administrativa. | | | | | | | |
| A empresa desenvolveu novos produtos muito diferentes dos existentes no que se refere à sustentabilidade. | | | | | | | |
| A empresa desenvolveu novos produtos mais sustentáveis que diferem ligeiramente de produtos existentes. | | | | | | | |
| A empresa criou modificações incrementais em produtos existentes. | | | | | | | |
| A empresa introduziu novos processos de produção sustentáveis. | | | | | | | |
| A empresa introduziu modificações nos processos de produção existentes tornando-os mais sustentáveis. | | | | | | | |

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| A empresa introduziu novas tecnologias de informação ou significativamente melhoradas para a produção de produtos ou serviços, melhorando substancialmente as práticas sustentáveis. | | | | | | | |
| Os gestores e funcionários têm orgulho da história da empresa sobre gestão e proteção ambiental e social. | | | | | | | |
| Os gestores e funcionários têm orgulho das metas e missões ambientais e sociais da empresa. | | | | | | | |
| Os gestores e funcionários sentem que a empresa possui uma posição significativa com respeito à gestão eproteção ambiental e social. | | | | | | | |
| Os gestores e funcionários da empresa sentem que a empresa formulou um conjunto definido de metas e missões ambientais e sociais. | | | | | | | |
| Os gestores e funcionários conhecem as tradições e culturas ambientais e sociais da empresa. | | | | | | | |
| Os gestores e funcionários identificam-se com as ações no que se refere à gestão e proteção ambiental e social. | | | | | | | |
| Com os parceiros de negócio, os benefícios decorrentes da relação são partilhados entre as duas organizações. | | | | | | | |
| Com os parceiros de negócio, em situações de emergência, ambas as empresas contam com apoio mútuo. | | | | | | | |
| Com os parceiros de negócio, os estilos de gestão corporativa e social das empresas são semelhantes. | | | | | | | |
| Com os parceiros de negócio existe transparência nas negociações. | | | | | | | |
| Com os parceiros de negócio existem propostas que visam a redução de custos. | | | | | | | |
| Com os parceiros de negócio existe prioridade no atendimento face a outras empresas. | | | | | | | |
| Com os parceiros de negócio há conformidade de qualidade dos produtos e serviços. | | | | | | | |
| Com os parceiros de negócio, subsiste a prioridade de oferecer inovações relativamente a outras empresas. | | | | | | | |
| Com os parceiros de negócio, existem confirmações rápidas aos pedidos dos compradores. | | | | | | | |
| Com os parceiros de negócio, compreende-se que ambas têm saúde financeira. | | | | | | | |
| Com os parceiros de negócio, existe flexibilidade para mudanças solicitadas pelos parceiros. | | | | | | | |
| Existem objetivos ambientais e sociais comuns a toda a empresa. | | | | | | | |
| Existe um acordo sobre a direção ambiental e social estratégica da empresa. | | | | | | | |
| Os membros da empresa estão comprometidos com as estratégias ambientais e sociais. | | | | | | | |
| Os colaboradores estão entusiasmados com a missão ambiental e social da empresa. | | | | | | | |
| Os produtos verdes desenvolvidos seguem as diretrizes verdes da empresa. | | | | | | | |
| Os produtos verdes estão de acordo com os requisitos verdes definidos pelas partes interessadas. | | | | | | | |
| Os produtos verdes contribuem para a rentabilidade da empresa. | | | | | | | |
| Os produtos verdes contribuem para a lucratividade da empresa. | | | | | | | |
| Os produtos verdes desenvolvidos têm sucesso no mercado. | | | | | | | |
| As atividades realizadas com os parceiros de aliança são bem coordenadas. | | | | | | | |
| Há garantias de que as tarefas desenvolvidas estão ajustadas às dos parceiros de aliança. | | | | | | | |
| Há garantias de que o trabalho realizado coincide com o trabalho dos parceiros de aliança. | | | | | | | |
| Existe uma grande interação com os parceiros de aliança na maioria das decisões. | | | | | | | |
| Há garantias de uma coordenação adequada das diferentes alianças incluindo “alianças verdes”. | | | | | | | |
| A empresa determina áreas de sinergia no portfólio de aliança incluindo “alianças verdes”. | | | | | | | |
| Há garantias de que as interdependências entre as alianças são identificadas incluindo “alianças verdes”. | | | | | | | |
| São avaliadas as potenciais sobreposições entre as diferentes alianças incluindo “alianças verdes”. | | | | | | | |
| A empresa tem capacidade de aprender com os parceiros de aliança incluindo “alianças verdes”. | | | | | | | |
| A empresa tem aptidões de gestão, aprendendo com os parceiros de aliança incluindo “alianças verdes”. | | | | | | | |
| A empresa tem rotinas de análise de informações obtidas dos parceiros de aliança incluindo “alianças verdes”. | | | | | | | |
| A empresa pode incrementar conhecimento através dos parceiros de alianças incluindo “alianças verdes”. | | | | | | | |
| A empresa esforça-se para antecipar a competitividade entrando em novas alianças incluindo “alianças verdes”. | | | | | | | |
| Frequentemente, a empresa aborda outras empresas com propostas de aliança, incluindo “alianças verdes”. | | | | | | | |
| Face à concorrência a empresa é mais proativa e ágil a obter parcerias de aliança, incluindo “alianças verdes” | | | | | | | |
| Monitoriza ativamente o ambiente para identificar oportunidades de parcerias, incluindo “alianças verdes”. | | | | | | | |
| A empresa abdica de termos contratuais para melhorar os resultados das alianças incluindo “alianças verdes”. | | | | | | | |
| Face ao inesperado, a empresa prefere alterar um acordo de aliança incluindo “alianças verdes”. | | | | | | | |
| A empresa é flexível face às solicitações de mudança das suas alianças, incluindo “alianças verdes”. | | | | | | | |

**Agradecemos a sua colaboração.**

尊敬的管理层，

作为科英布拉大学经济学院正在进行的一项旨在研究社会责任和创新主题的研究工作的一部分，我们通过填写此问卷来寻求您的合作。

在回答问卷时，我们要求您用叉 (x) 或圆圈 (O) 标记您认为与每个陈述相关的最正确或最合适的答案。请注意，没有正确或错误的答案，我们只询问您的真实意见。
所提供的信息是严格保密和匿名的。由以下人员进行的研究：
- **Beatriz Lopes Cancela，科英布拉大学经济学院商业管理博士生 (beatrizlopesdoutoramentofeuc@gmail.com)。**
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- 教授。科英布拉大学经济学院 **Arnaldo Coelho** 博士。
- 教授。 **Elisabete Neves** 博士，科英布拉商学院。

这项研究的成功取决于您的合作。 谢谢

第一节

**填充说明：**
接下来的问题是个人和/或专业性质的。 旨在提供简短的答案。
· 年龄 _____
· 教育
· 职业 _
· 在公司的资历 _ _
· 层级_

关于公司的问题。
· 地点 _
· 公司资历_
· 在职员工人数 _ _
· 部门_

第二节

**填充说明：**
为了回应以下声明，我们要求您关注您所在公司的现有做法。 阅读下面的句子并给每一个打分，根据你对每个描述的认同程度，从 1 到 7 的范围内选择。
**1 – 非常不同意**
**2 – 不同意**
**3 – 有点不同意**
**4 – 既不同意也不反对**
**5 – 有点同意**
**6 – 同意**
**7 – 非常同意**

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| 公司组织进行改进以从根本上减少产品和服务生命周期对环境的影响 | | | | | | | |
| 公司定期对现有产品和服务进行调整，以减少对环境和社会的负面影响 | | | | | | | |
| 公司定期进行业务流程重塑，重点关注绿色视角 | | | | | | | |

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| 公司具有创新的环保技术和工艺 | | | | | | | |
| 公司不断加强员工的知识和技能，以提高当前可持续发展实践的效率 | | | | | | | |
| 公司的特点是学习文化刺激可持续发展的创新 | | | | | | | |

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| 公司根据企业社会责任的最佳实践示例，提升员工当前的知识和技能。 | | | | | | | |
| 公司寻找外部知识来源（例如合作伙伴、客户、研究机构）以寻找与可持续发展相关的创新理念 | | | | | | | |
| 公司始终以定期/系统的方式回应现有的利益相关者问题 | | | | | | | |
| 公司不断评估其外部环境，以揭示对关键利益相关者（客户、供应商、当地社区）重要的问题。 | | | | | | | |
| 业务流程灵活，使公司能够对关键利益相关者的需求和要求做出高度响应 | | | | | | | |
| 公司在产品/服务设计和开发阶段的早期就涉及关键的市场利益相关者（客户、供应商） | | | | | | | |
| 公司利用适当的工具和技术来减少关键流程的可变性 | | | | | | | |
| 公司已经建立了关键绩效指标 (KPI) 来确定公司是否达到了可持续发展目标 | | | | | | | |
| 降低材料管理成本的措施。 | | | | | | | |
| 废物管理的创收行动 | | | | | | | |
| 衍生技术管理行动 | | | | | | | |
| 降低用水成本的行动 | | | | | | | |
| 降低能源成本的行动 | | | | | | | |
| 创造经济价值的过程 | | | | | | | |
| 企业声誉管理 | | | | | | | |
| 社会活动广告 | | | | | | | |
| 促进教育和组织学习的行动 | | | | | | | |
| 公司机会均等管理 | | | | | | | |
| 劳动实践和良好工作条件的管理 | | | | | | | |
| 公司社会活动的管理 | | | | | | | |
| 创造社会价值的过程 | | | | | | | |
| 旨在管理环境立法的行动 | | | | | | | |
| 清洁技术管理 | | | | | | | |
| 减少使用可用资源的环境问题管理 | | | | | | | |
| 使用自然资源的可持续行动 | | | | | | | |
| 鼓励环保计划的行动 | | | | | | | |
| 采取行动以降低空气、水和土壤中的排放量来处理污水和废物 | | | | | | | |
| 创造环境价值的过程 | | | | | | | |
| 尽管公司具有环境和社会特征，但公司将通过语言欺骗其环境和社会特征。 | | | | | | | |
| 尽管公司具有环境和社会特征，但有时会通过图像或图形对其环境和社会特征进行欺骗。 | | | | | | | |
| 尽管具有环境和社会特征，但该公司有时会假设一种模糊或看似无法证明的环境和社会声明。 | | | | | | | |
| 尽管具有环境和社会特征，该公司仍会高估或夸大其环境和社会功能。 | | | | | | | |
| 尽管公司具有环境和社会特征，但公司会隐藏重要信息，从而导致环境和社会声明被高估。 | | | | | | | |
| 尽管具有环境和社会特征，但该公司表明它并不关心少数群体。 | | | | | | | |
| 该公司已经表明它不关心当地社区。 | | | | | | | |
| 该公司已经表明它不关心环境。 | | | | | | | |
| 该公司已经表明，它并不关心企业对有价值的事业的捐赠。 | | | | | | | |
| 公司设有负责社会责任的机构或人员。 | | | | | | | |
| 公司重视存在负责社会责任事项的机构或机构。 | | | | | | | |
| 公司采用社会责任负责人提出的社会和环境实践。 | | | | | | | |
| 负责社会责任问题的机构或个人设法改变或改进了公司现有的社会和环境实践。 | | | | | | | |
| 负责社会责任问题的机构或个人设法在公司中联合起来传播更可持续的做法。 | | | | | | | |
| 负责社会责任问题的机构或个人对行政结构有影响。 | | | | | | | |
| 开发与现有产品不同的新产品 | | | | | | | |
| 开发与公司现有产品略有不同的新产品 | | | | | | | |
| 对公司现有产品的增量修改。 | | | | | | | |
| 引进新的生产工艺。 | | | | | | | |

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| 对公司现有的生产流程进行微小或实质性的修改 | | | | | | | |

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| 为生产产品或服务引入新的或显着改进的信息技术 | | | | | | | |
| 该公司的高层管理人员、中层管理人员和员工为其在环境和社会管理和保护方面的历史感到自豪。 | | | | | | | |
| 公司的高层管理人员、中层管理人员和员工为其环境和社会目标和使命感到自豪。 | | | | | | | |
| 高层管理人员、中层管理人员和员工认为公司在环境和社会管理和保护方面保持了重要地位。 | | | | | | | |
| 公司的高层管理人员、中层管理人员和员工认为公司已经制定了明确的环境和社会目标和使命。 | | | | | | | |
| 公司的高层管理人员、中层管理人员和员工了解其环境和社会传统和文化 | | | | | | | |
| 公司的高层管理人员、中层管理人员和员工认为它对环境和社会管理和保护给予了相当大的关注 | | | | | | | |
| 与业务合作伙伴一起，两个公司之间共享关系产生的好处 | | | | | | | |
| 与商业伙伴，在紧急情况下，两家公司都依赖对方的支持 | | | | | | | |
| 与商业伙伴，公司的管理和企业风格相似 | | | | | | | |
| 与商业伙伴，谈判透明 | | | | | | | |
| 与业务合作伙伴一起提出旨在降低成本的项目建议 | | | | | | | |
| 与商业伙伴合作，优先协助其他买家 | | | | | | | |
| 与业务合作伙伴一起，优先提供与其他买家相关的创新 | | | | | | | |
| 与业务合作伙伴一起，产品和服务质量一致 | | | | | | | |
| 与商业伙伴，有快速确认买家订单 | | | | | | | |
| 与商业伙伴一起，财务健康 | | | | | | | |
| 与业务合作伙伴一起，可以灵活地满足变更要求 | | | | | | | |
| 公司的环境和社会目标具有共性 | | | | | | | |
| 完全同意公司的环境和社会战略方向 | | | | | | | |
| 公司所有成员都致力于公司的环境和社会战略 | | | | | | | |
| 公司员工对公司的集体环境和社会使命充满热情。 | | | | | | | |
| 公司的新绿色产品符合绿色指令。 | | | | | | | |
| 公司的新绿色产品符合利益相关者设定的绿色要求。 | | | | | | | |
| 公司的新绿色产品比竞争产品带来更多收入。 | | | | | | | |
| 公司的新绿色产品比竞争产品更有利可图。 | | | | | | | |
| 公司新的绿色产品是成功的。 | | | | | | | |
| 与联盟伙伴开展的活动得到了很好的协调。 | | | | | | | |
| 保证执行的任务与联盟伙伴的任务一致。 | | | | | | | |
| 保证所开展的工作与联盟伙伴的工作一致。 | | | | | | | |
| 在大多数决策中，都会与联盟伙伴进行大量互动。 | | | | | | | |
| 保证不同联盟（包括“绿色联盟”）的适当协调。 | | | | | | | |
| 公司确定联盟组合中的协同领域，包括“绿色联盟”。 | | | | | | | |
| 保证确定联盟之间的相互依存关系，包括“绿色联盟”。 | | | | | | | |
| 评估包括“绿色联盟”在内的不同联盟之间的潜在重叠。 | | | | | | | |
| 公司具备向包括“绿色联盟”在内的联盟伙伴学习的能力。 | | | | | | | |
| 公司具备管理能力，向包括“绿色联盟”在内的联盟伙伴学习。 | | | | | | | |
| 该公司有分析从联盟伙伴（包括“绿色联盟”）获得的信息的程序。 | | | | | | | |
| 公司可以通过包括“绿色联盟”在内的联盟伙伴来增加知识。 | | | | | | | |
| 公司通过加入包括“绿色联盟”在内的新联盟，努力预测竞争力。 | | | | | | | |
| 该公司经常向其他公司提出联盟建议，包括“绿色联盟”。 | | | | | | | |
| 面对竞争，公司更主动、更敏捷地获得联盟伙伴关系，包括“绿色联盟” | | | | | | | |
| 它积极监测环境以发现合作机会，包括“绿色联盟”。 | | | | | | | |
| 公司放弃合同条款以改善包括“绿色联盟”在内的联盟结果。 | | | | | | | |
| 面对突如其来的意外，公司更愿意改变包括“绿色联盟”在内的联盟协议。 | | | | | | | |
| 面对改变联盟（包括“绿色联盟”）的要求，该公司可以灵活应对。 | | | | | | | |

# APPENDIX II – PRESENTATIONS AND AWARDS

## ARTICLES AND PRESENTATIONS SINCE THE ENROLMENT IN THE PHD PROGRAM

- Cancela, B. L., Neves, M. E. D., Rodrigues, L. L., & Gomes Dias, A. C. (2020). The influence of corporate governance on corporate sustainability: new evidence using panel data in the Iberian macroeconomic environment. International Journal of Accounting and Information Management, 28(4), 785–806. https://doi.org/10.1108/IJAIM-05-2020-0068
- Cancela, B., Coelho, A., & Neves, E. (November, 2022). *Ambidexterity as a strategy to potentiate firm-related environmental activities: evidence from portuguese companies*. Accepted for presentation at X Congreso Internacional de Emprendimiento e Innovación AFIDE´22, Salamanca, Espanha;
- Neves, E., Proença, C., Cancela, B. *Governance and social responsibility on corporate performance: panel data evidence*. (June 30 – 01 July). International Conference in Accounting and Finance, online.
- Cancela, B., Coelho, A., Neves, E., Proença, C. (June 30 – 01 July). *Green Strategic Alliances and Corporate Social Responsibility: Impact on Sustainable Innovation*. International Conference in Accounting and Finance, online.
- Neves, E., Proença, C., Cancela, B. (June 29 – 01 July). *Corporate Performance Determinants in the Iberian Peninsula: the investment banks case*. International Conference on Applied Research in Management and Economics (ICARME), online.
- Cancela, B., Coelho, A., & Neves, E. (August 01 – 03). *Ambidexterity as a strategy to potentiate firm-related environmental activities: evidence from portuguese companies*. World Finance Conference, Turim, Italy.

- Neves, M., Proença, C. and Cancela, B. *Corporate Performance Determinants in the Iberian Peninsula: the investment banks case*. Book: Perspectives on Women in Management and the Global Labor Market. Submission: 25 February 2022. Status: accepted.

## AWARDS

- Best paper award in Finance, presented at 3rd International Conference on Accounting and Finance Innovation, June 30 - July 1, Aveiro, Portugal. “Green Strategic Alliances and Corporate Social Responsibility: Impact on Sustainable Innovation”.

# APPENDIX III - SUBMISSIONS

| Study | Journal | Status |
|---|---|---|
| Bibliometric analysis of leadership and social responsibility: status, development, and future research directions | Review of Managerial Science | Awaiting peer review |
| Greening the business: how ambidextrous companies succeed in green innovation through sustainability | Business Strategy and the Environment | Awaiting peer review |
| Green strategic alliances and corporate social responsibility: impact on sustainable innovation for different countries | Journal of Product Innovation Management | Awaiting peer review |
| Green organizational identity and sustainable performance: the role of green strategic alliances and their impact on sustainable shared values and vision | Business Strategy and the Environment | Awaiting peer review |
| Determinants Factors of the performance of metallurgical companies in northern Portugal: New evidence using panel data | EuroMed Journal of Business | Minor revisions |
| Governance and social responsibility: what factors impact corporate performance in a small banking-oriented country? | Journal of Applied Accounting Research | Awaiting peer review |
| Performance drivers in Iberian companies: Panel data Evidence | International Journal of Productivity and Performance Management | Awaiting peer review |