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How green strategic alliances influence sustainability and green organization identity: evidence for Chinese companies

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Abstract

This paper aims to explore the role of green strategic alliances in corporate sustainability and green organizational identity. Green strategic alliances can promote communication and exchanges between members at all levels, whether technology sharing, talent circulation, or mutual promotion of product innovation to the sustainability of their respective enterprises and obtain more substantial green competitiveness. This research proposes a theoretical model tested using structural equation modeling (SEM). A 57-item questionnaire was developed to explore the proposed relationships. We received 303 valid questionnaires collected from industries in China during the whole process, which verified our conjecture. The results show that a green strategic alliance has a positive role in promoting the green social shared vision and green shared value, and green organizational identity, but there is no positive push between GSSV and GSValue. This research fills the gap in research on China and has particular reference significance for the future development of Portuguese companies.

Keywords: green strategic alliance, sustainability, green organizational identity, green social shared vision, green shared value

Resumo

O presente trabalho estuda o papel das alianças estratégicas verdes na sustentabilidade e na identidade organizacional verde. As alianças estratégicas verdes promovem a comunicação e a transferência de saber entre empresas. Especificamente, promovem partilha de tecnologias, circulação de talentos ou promoção mútua de inovação de produtos para a sustentabilidade, por forma a obter maiores níveis de competitividade verde. Desenvolveu-se um questionário de 57 itens para explorar as relações propostas e o modelo teórico foi testado usando equações estruturais. Recolheram-se 303 questionários válidos de empresas do setor industrial da China. Os resultados mostram que as alianças estratégicas verdes têm um papel significativo e positivo na promoção da visão partilhada social verde e no valor partilhado verde, bem como na identidade organizacional verde. No entanto, não existem resultados positivos entre GSSV e GSValue. Esta investigação vem preencher a lacuna da investigação sobre a China e tem um significado de referência particular para o desenvolvimento futuro das empresas portuguesas.

Palavras-chave: Alianças estratégicas verdes; Sustentabilidade; Identidade organizacional verde; Visão partilhada verde e social; Valor verde partilhado

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Acronym

SRW - Standardized Regression Weights

AVE- average variance extracted

CR-Composite reliability

CSR- Corporate Social Responsibility

CSV- Creating shared vision

GOI- Green Organizational Identity

GSA- Green Strategic Alliances

GSSV- Green and Social Shared Vision

GSValue- Green Shared Value

NGOs-non-governmental organizations

NRC-National Research Council

SRW- Standardized Regression Weights

Sus- Sustainability

WCED- World Commission on Environment and Development

CONTENT

CHAPTER I. : INTRODUCTION

As part of the conclusion of the Master of Marketing course, the theme of this thesis is to analyze the impact of green strategic alliances on corporate sustainability and green organizational identity with green social shared vision and green shared value as variables.

Since the 1970s, with the acceleration of the industrialization process, economic and social development has increased the demand and role of the environment, and the mutual feedback relationship between development and the environment has tended to deteriorate(Jianguo & Xiaochuan, 2014). Under this macro background, human beings begin to review and reflect on the traditional concept of development and explore new development models, which as sustainable development(Jianguo & Xiaochuan, 2014; Wang Xiuhua, 2012). In this extensive and profound adjustment and transformation, enterprises' production and operation activities should bear the brunt, and link production and operation activities with the development of society and the environment, to realize the sustainable development of society, economy and e, and environment(Jianguo & Xiaochuan, 2014). Green enterprises are born with the mission of solving these problems, and the most important thing for enterprises to develop green enterprises is to carry out green management(Hart, 1997). Green management is a resource management and innovation activity with the natural environment related to the enterprise as the main object(Hart, 1997; Soewarno et al., 2019). It integrates the concept of comprehensive green quality management into the production and operation management of the enterprise, and the goal is to achieve harmony between the social economy and the natural environment—Sustainable development(Jianguo & Xiaochuan, 2014). Enterprise green management is a complex systematic project that is restricted by stakeholders and affects the interests of stakeholders. It is difficult to achieve effective green management by integrating internal resources and improving capabilities. Due to the constraints of corporate resources, green legal system, supervision support, and ecological awareness, Chinese enterprises are struggling to implement green management, which seriously affects the enthusiasm for innovation in corporate management models(Yanli et al., 2017). Therefore, enterprises should establish green strategic alliances with a wide range of stakeholders and realize the innovation of enterprise management mode while solving environmental problems.

In the past 30 years, green management has become a new focus of theoretical research and practical exploration in enterprise management(Jianguo & Xiaochuan, 2014).

The research perspective has extended from environmental evolution and adaptation to resource-based view, ecological environment response, environmental stakeholders, and many other theories. Hart (1997) believes that the green management research framework based on the resource-based view should include elements of the natural environment, forming a new perspective for enterprises to build sustainable competitive advantages. His research focuses on companies attaching importance to external natural environment management—reasonable allocation and utilization of natural resources, improving green management performance, and achieving sustainable development of enterprises. It has been pointed out that resources and capabilities are important factors that affect corporate environmental strategy(Delgado-Ceballos et al., 2012; Sharma, 2000), but their impact process is also regulated by the external environment (mainly economic, legal, social, geographical and other contingency factors). The green management of enterprises can meet the government's requirements for environmental protection regulations and gradually strengthen enterprises' concern for the environment and stakeholders(Mark E. Steadman, 1995). Further emphasized that the essence of green management is the response of enterprises to natural environment problems, and the motivation of this response is affected by various factors such as legitimacy and stakeholder pressure(Bansal & Roth, 2000a). It is believed that the driving force for enterprises to carry out green management still involves the issue of interests in the final analysis because environmental pollution is very likely to harm other stakeholders related to the environment (such as the government, residents, and units in surrounding communities).

The topic of partnership green management has become one of the critical topics of academic research, and the research aspects and angles are also very diverse. But there are still some issues that have not been fully discussed(T.-W. Chang, 2020). First, many previous studies were based on samples of small and medium-sized enterprises in Taiwan (C. H. Chang & Chen, 2013a; T.-W. Chang, 2020). For the situation in the Chinese mainland market, whether the results of the research still have applicability needs further discussion and study (C. H. Chang & Chen, 2013a; T.-W. Chang, 2020; T.-W. Chang & Hung, 2021) Many studies on GSValue, GSSV, and GOI are not established in the context of alliance theory, and it is worthwhile whether the conclusions of these studies are still applicable under the same alliance theory(C. H. Chang & Chen, 2013a; Y. S. Chen et al., 2015b; Crane, 1998). Accordingly, Chang (2020) future studies can consider the internal environmental factors of an organization as an entry point and focus on social responsibility. Our study explains the mechanisms underpinning the development of social

responsibility based on internal factors,specifically, Green organizational identity and green shared vision. Additionally, Zhou, Luo, and Tang (2018) point out that future studies should analyze the duality between irresponsibility and social responsibility as a way of understanding the "good" and "less good" sides of social responsibility and supporting executives to assess the strategic impacts. And the competitive advantage of social responsibility. Furthermore, under the alliance theory, some research samples are small, and whether the conclusions are still correct in the whole industry is worthy of further confirmation. For example, in the research of the Turkish hotel alliance as a sample, a Shared vision has positive effects on organizational innovation behavior and internal knowledge sharing. (Nilüfer Vatansever Toylan et al., 2020), but whether this conclusion is still applicable in other industries deserves further study.

Therefore, this investigation aims to establish the relationship between green strategic alliance, green shared vision, green shared value, green organizational identity, and sustainability. In addition, this study uses Chinese companies as the primary research sample, which has never been seen in previous studies. The Chinese market is large and the environment is complex. The conclusions drawn from the survey of the Chinese market can not only further verify the universality of the conclusions drawn from previous surveys and studies, but also further deepen the previous research results.

The structure of this thesis is divided into 4 parts. Introduction, the first part shows the basic concept of this thesis. Literature review and hypotheses development, the second part of reference reviews all important concepts of understanding, the green strategic alliance, green social sharing vision, green sharing value, green organization identity, and sustainability. As well as research theories and hypotheses, research models are presented in the second part. In the third part, the methods of scientific work, research design, and questionnaire design will be introduced. The fourth part aims to analyze and discuss the obtained results, and finally find the conclusions, theoretical contributions, practical contributions, and limitations as well as future research directions.

CHAPTER II.: LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this part, a literature review will be conducted covering all important concepts to understand the research. Faced with empirical evidence from the collected data, through association or causality, this section will also present a relationship between two variables, which we call a hypothesis. In the future, these hypotheses will be confirmed or not based on the results obtained.

2.1. Green Strategic Alliance (GSA)

The concept of strategic alliance was first proposed by American management scientist Roger Nigel and Jane Hopeland, president of DEC Corporation. Strategic alliance is one of diversification approaches and strategies. The emergence of strategic alliances benefits from the formation of global economic integration (Yanli et al., 2017) 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). The parties to a long-term partnership generally do not own each other, but instead form a new business entity (such as a joint venture) to operate the new business. Enterprises operating a single business also often use this strategy to enhance their competitiveness. Therefore, strategic alliances can be established between any combination of commercial organizations, government organizations, and non-governmental organizations (NGOs) (Crane, 1998). Organizations that establish strategic alliances share information, resources, capabilities, skills, experience, reduce costs and risks, overcome technological constraints, economies of scale, strategies, etc., and benefit from each other's strengths (Depamphilis, 2017). Alliance partners can complement and combine by transferring specific skills or resources so that both parties can obtain more significant benefits(jeannet & hennessey, 2004). In addition, the alliance strategy can be divided into "symmetric alliance", "asymmetric alliance" and "complementary alliance".

Green strategic alliance refers to a strategic alliance partnership established by enterprises and stakeholders. The strategic goals of sustainable development with ecology, economy, and society can be achieved through complementary resources, benefit-sharing, and risk-sharing. Green strategic alliances take natural environmental protection as the core and help enterprises achieve green development and green management (Yanli et al., 2017).

The Green Strategic Alliance has the green culture required for its operation. It regards the green mission of energy conservation and emission reduction, developing a low-carbon economy, and creating green social needs as the collaborative culture of the Alliance participants. Since the two sides of the alliance are organizations from different business directions, creating a strategic alliance culture guided by "green culture" can promote mutual absorption between enterprises and gain more experience in cooperation(Wang Xiuhua, 2012).

Companies must adapt to changes in the environment (Kohtamäki et al., 2018). The Green Strategic Alliance provides environmental information to its members (Mendleson & Polonsky, 1995)and New Green Markets (Carroll, 1999) to help alliance members quickly adapt to environmental changes and accelerate the introduction of new and better products to market.

Enterprises achieve their green development goals through green strategic alliances. Under the alliance, enterprises are constantly motivated by their strategic contracts in cooperation. At the same time, they are faced with the supervision of the alliance participants, so the participants must improve their business methods. Take the alliance between enterprises and suppliers as an example (Yanli et al., 2017): enterprises will choose resource suppliers with green requirements such as low energy consumption, high output, and low emissions to form alliances; suppliers pursue green, low-carbon natural development under their own certain conditions, it will also choose to provide clean resources for enterprises with green management systems, and refuse to maintain cooperative relations with high-carbon development enterprises(Yanli et al., 2017). Therefore, since the selection of suppliers determines the level of the greening of enterprise resource input, the issues that enterprises need to pay attention to when selecting suppliers to build a green strategic alliance focus on the procurement link, that is, whether the purchased resources can bring benefits to the performance of the enterprise improvement. Under the alliance, there is a mutually beneficial and win-win relationship between the participants(Yanli et al., 2017), which can also play a virtuous cycle for society, prompting more companies to change themselves voluntarily or forced by the situation operating model.

Since there are more pure contracts relationships between green strategic alliance participants, parties may abandon the existing alliance because of better partners or change due to commercial factors such as profit. The original green development goal. Therefore,

this kind of alliance relationship is relatively fragile, making it possible that the alliance enterprises may complain to each other due to some short-term operational mistakes or management deviations and may also cause the unhappiness of the contract partners in the future. Currently, both parties are significant. It is easy to break down the cooperation again because of meager interests, and the alliance is dissolved. The weak alliance relationship dramatically reduces the overall operation effect of the green strategic alliance and brings many difficulties to the management and operation of the enterprise.

2.2. Green and Social Shared Vision (GSSV)

Green and Social Shared Vision is a concept proposed as 'a clear and common strategic direction of collective environmental goals and aspirations that has been internalized by members of an organization (Chen et al., 2015). The concept of GSSV is derived from shared vision. Compared with a shared vision, GSSV pays more attention to environmental friendliness and sustainable development(T.-W. Chang et al., 2019).

A shared vision can express senior team members' collective goals and aspirations, expressing the organization's future path. Therefore, a shared vision provides an organization with a common direction, reducing the negative impact of different goals on organizational cohesion (Chang et al., 2019). A shared vision provides organizational members with appropriate guidelines and aspirational goals to overcome current challenges and perform work-related tasks successfully(Bass, 1990). It can convey shared insights, knowledge, and a blueprint for members' future aspirations also shared strategic direction to facilitate and reveal convergent goals(Rice et al., 1998). In addition, shared vision bases the company's potential for success as the basis for clever strategy building(Jansen et al., 2008). It can be the basis for gaining a competitive advantage(Giordan, 1995) and helps workers perceive their work through an extensive and conscious context(Vogus & Sutcliffe, 2012). Furthermore, it can motivate organizational members to strengthen their willingness to exceed expectations(Sosik et al., 1998). Taken together, a shared vision can help senior members achieve several goals, such as developing a shared blueprint for future growth, enacting norms and values, motivating them to exceed performance expectations, and serving as a resource for developing future strategies.

Conversely, the lack of a shared purpose and vision can negatively affect mutual

suspicion and misfits among team members, making exploration and development activities extremely resistant. A shared vision helps improve conflicts and inconsistencies when members of organization exchange resources and capabilities.

When developing the organization's future policies, management should build a shared platform to achieve the strategic objectives of environmental protection—the strategic direction of the corporate goals of conservation objectives. GSSV as a clear and shared strategic direction towards achieving the collective environmental goals and aspirations that organizational workers have internalized. A role-behavior theory was proposed in which job performance includes two types of behaviors, inner and outer behavior(Katz & Kahn, 1966). In addition, job performance is divided into two behaviors categories: introverted and extrinsic behavior(MacKenzie et al., 2001). Internal behaviors are the outputs formally required by the organization (i.e., regulated activities within the system). In achieving organizational goals, extrinsic behaviors are the behaviors of workers who are willing to ask and perform requirements beyond their job requirements and formulate or propose useful behaviors that help an organization achieve its goals.

Under the ever-changing environment, enterprises need to quickly adapt to changes in the environment(Yanli et al., 2017). By enhancing green competitiveness, new markets can be quickly captured(Bansal & Roth, 2000a; Mendleson & Polonsky, 1995; Wang Xiuhua, 2012). The Green Strategic Alliance focuses on building a "green culture", promoting cooperation and experience sharing among members to help members achieve green development and green management(Crane, 1998; Lin, 2012; Mendleson & Polonsky, 1995; Niesten & Jolink, 2020;T.-W. Chang, 2020; Y. S. Chen et al., 2014; Y.-S. Chen et al., 2015; Hoe, 2007) According to prior research, alliance entrepreneurship is positively related to the development of a shared vision(Khalid & Larimo, 2012).Another research in the area of hotels in Turkey shows that shared vision is positively related to inter-organizational knowledge sharing which is positively related to alliance strategic(Nilüfer Vatansever Toylan et al., 2020). Therefore, the following hypothesis is proposed:

H1: There is a positive impact of green strategic alliance on green social shared vision.

2.3. Green Shared Value (GSValue)

The concept of GSValue is an extension of the creating shared value concept, which refers to the creation of value in green, environmental and sustainable development.GSValue 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"(Y. S. Chen et al., 2015b).

Creating shared value (CSV) is a concept that debuted on 'Strategy and Society: The Link Between Competitive Advantage and CSR.' by Michael E. Porter of Harvard business school and FSG co-founder Mark R. Kramer in January 2006. The concept of formal expansion was published in January 2011 in "Shared Value Creation: Ways to Recreate Capitalism and Innovation and Ways to Create the Rhythm of Growth." CSV is a fundamental concept of existing corporate social responsibility and philanthropic activities, sustainable possibilities, etc., which are separated from the shared value creation of enterprises and society and are because the success of enterprises is closely linked to prosperity of society and the surrounding community. The two are interdependent, and when the two are interconnected, they can achieve efficiency, expand the market, compete with other enterprises, and provide new value in the market (Porter & Kramer, 2011). One of the things that get our most attention here is Before Michael Porter established the CSV theory in 2011, advanced companies, to strengthen their competitiveness and create new markets, turned their attention to new markets that did not exist at that time--which is, shared values and social issues that the public began to pay attention to. By solving environmental pollution and energy problems, shaping the new consumption culture of vulnerable groups, and changing the way of thinking that can improve quality in various value chain sectors, advanced enterprises have already occupied new markets first to create economic and social added value. Therefore, CSV is not a newly created strategy created by Michael Porter. It is theorized by observing the implementation process of new strategy in advanced enterprises and finding common ground. The model is shown in terms of basic CSV concepts as follows:

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.

Figure 1. Model conceptual of the first generation of value creation.
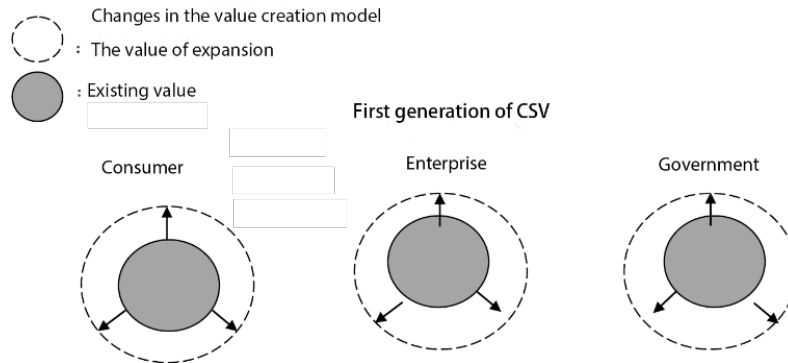
Second-generation value creation is when the various economic agents of the market generate touchpoints. Economic agents recognize the economic and social relevance of the core activities they pursue to expand their own value and begin to pursue common values. But at this stage, the three begin to understand the creation of economic value and the creation of social value separately; thus, there are creating limitations reducing continuity and stability. The theory of CSR is equivalent to second-generation value creation.
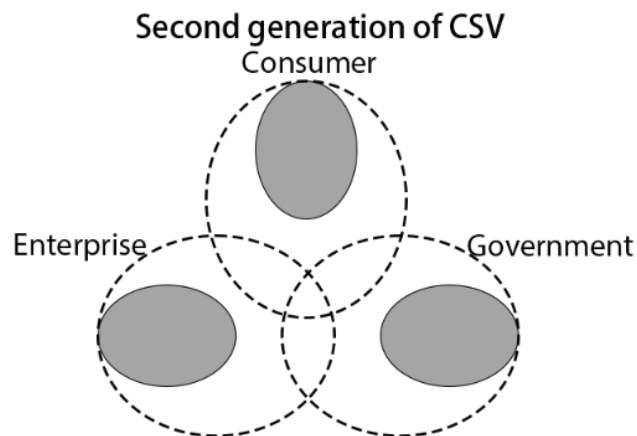
Figure 2. Model conceptual of the second generation of value creation.

Generation 3 is different from Generation 1 and 2 and starts with value creation at the intersection. The three deeply understand 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. CSV theory is equivalent to generation 3 value creation.
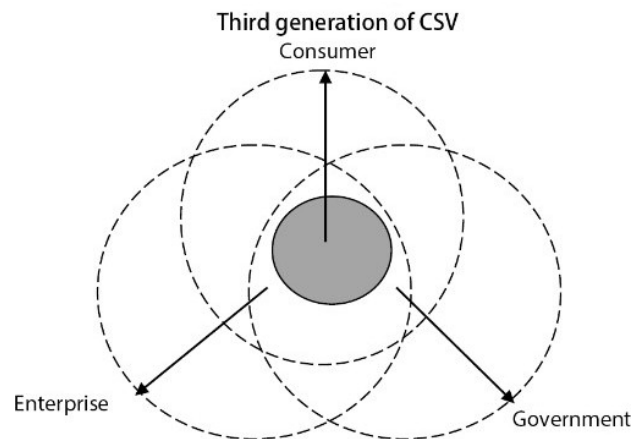
Figure 3. Model conceptual of the third generation of value creation.

CSV provides members of your organization with appropriate guidelines and ideal goals so they can successfully overcome current challenges and perform work-related tasks (Bass, 1990).

According to the above description, under the system of GSA, members share resources, experience, patents, capabilities, etc., to achieve benefit-sharing, risk-sharing, and obtain more benefits (Yanli et al., 2017). During their communication, ideas will be exchanged and might create new ways to make benefits which fully conforms to the CSV model shown in the previous article (Zhisong, 2016). During the activities of exploration and development, members of the Green Alliance might have to deal with resistance. Shared value can help improve conflicts and contradictions that arise when members of alliances exchange resources and capabilities (Jianguo & Xiaochuan, 2014). By combining alliances, companies can create values beyond what they can of any individual alliance(Wassmer & Dussauge, 2011). Based on the above, it is hypothesized that:

H2: There is a positive impact of green strategic alliance on GSValue.

There is a strong link between a shared vision and organizational shared value(Hoe, 2007).Previous research has demonstrated that a shared vision has a positive impact on an organization's shared value. A shared vision plays a vital role in fostering shared value in an organization.(Andriopoulos, 2001; Halbesleben et al., 2003). This study attempts to further analyze the existing inferences and propose hypotheses

H3: There is a positive impact of GSSV on GSValue

2.4. Green Organization Identity (GOI)

Organizational identity is a shared interpretive scheme co-created by members that

provides meaning to their actions, choices, and behaviors (Gioia, 1998). Green organizational identity is developed based on organizational identity (Braun & Wield, 1994), and is an explanatory model established to give practical significance to corporate environmental management behavior. It is defined as a collectively constructed interpretation of environmental management and protection by members to give meaning to their actions. GOI is in dimension of team building but it also has a great effect on individual level.(Besharov, 2013; T.-W. Chang & Hung, 2021) The recent study shows that GOI has a great positive effect on green psychological ownership and green knowledge sharing(T.-W. Chang & Hung, 2021). This study refers to Gioia and Thomas (1996) to measure "green organizational identity".

Academia has paid more attention to organizational identity. Research-based on social influence theory shows that people with high organizational identity will develop better job role behaviors, less sincere resignation intentions, and more active participation in organizational activities (O'Reilly & Chatman, 1986). Relevant studies have also confirmed that organizational identity significantly impacts organizational citizenship behavior. Organizational identity contributes to the improvement of employees' work performance. The sense of value and belonging is the innovative efforts of members to set up work expectations and encourage and develop employees (Hong，Tian & Roulin，Chen, 2018). Relevant literature further found that organizational identification is conducive to forming members' sense of control, value, and belonging when members establish job expectations, encourage and develop employees' innovative efforts, and have a positive effect, thereby producing activities that enhance organizational performance.

Green organization identification helps individual members to establish a common concept related to the enterprise, promotes members to understand the connection between the enterprise's environmental management goals and business activities, and integrates environmental protection awareness into daily work (Chulin & Hong, 2017); for the entire collective, It can be seen as a solution to improve the quality of the environment, forming cognitive attitudes about environmental protection (Soewarno et al., 2019) In the past ten years, scholars have discussed the relationship between corporate green organization identification and green innovation performance and confirmed that green organization identification could positively affect green innovation performance (Y. S. Chen & Chang, 2013; Chulin & Hong, 2017; Roulin & Hong, 2019), To influence green competitive advantage (Linlin, 2019). As one of the factors driving green innovation of enterprises, 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 meeting consumers' environmental needs green innovation behavior (C. H. Chang & Chen, 2013a; Song et al., 2019). Green organization identification has a positive effect on corporate environmental behaviors, and the emotional connections formed within green organizations can help motivate employees to actively participate in green innovation behaviors (Chulin & Hong, 2017). To sum up, green organization identification is conducive to forming consistent environmental protection goals between employees and enterprises, and this common goal can help improve green innovation performance.

In addition, green organization identity affects green innovation through environmental commitment (C. H. Chang & Chen, 2013b; Soewarno et al., 2019), green organization identity affects green innovation performance through environmental organization legitimacy; research shows that green organization identity affects green innovation performance through green absorption Capability affects green innovation performance.

In recent years, relevant researchers have begun to consider green organization identification as the influencing factor of corporate environmental behavior. They have begun to pay attention to the relationship between green organization identification and corporate competitive advantage. The organization's environmental protection behavior and sense of identity can promote the implementation of the organization's environmental protection strategy. Taking There was research took Taiwan's manufacturing industry as the object, the results show that environmental leadership affects green competitive advantage through organizational identity (Y. Chen, 2011). The one Took agricultural products as the object, found that organizational environmental culture can significantly positively affect the green innovation performance of enterprises through green organizational identification. In the latest research, through research on manufacturing enterprises in the Beijing-Tianjin-Hebei region, it is found that organizational environmental identity is positively correlated with green competitive advantage (Roulin & Hong, 2019).

To sum up, most of the current literature is based on Western civilization, which studies the direct impact of green organizational identity on green competitive advantage or corporate green innovation performance in some specific industries, while green

organizational identity and green society share a shared vision or green shared value. The connection between them has not been studied.

GOI refers to the organizational identity of members when an organization is under the interpretive framework of environmental management and protection, whose structure is jointly constructed by members of the organization and values the behavior of its members (T.-W. Chang et al., 2019; Y. Chen, 2011). GOI is conducive to maintaining a competitive advantage and improving the quality and quantity of organizational innovation and competitiveness (M. Geraie & Fereshteh Mostafavi Rad, 2015). Research has shown that factors such as members' values and behaviors (Besharov, 2013), vision expression (Gioia et al., 2010), perceived organizational support (Ghosh, 2016), employee CSR engagement (Mozes et al., 2011), psychological empowerment (Sepehri Rad et al., 2016), and organizational justice (Maimunah Ismail, 2016) can shape or strengthen organizational identity. According to related research, shared vision represents the organizational vision of members and the collective notion of organizational mission and core values (Colakoglu, 2012; Nahapiet & Ghoshal, 1998). The realization of sustainability requirements is facilitated when organizational planners have a strong vision (Senbel, 2015). Therefore, shaping and articulating the shared vision of the organization and creating members' value for its members is the key to generating organizational identity. Therefore, the following hypotheses are proposed:

H4: There is a positive impact of GSSV on GOI.

It was found in a Korean hotel industry that the organizational identification had a partial moderating effect in the relationship of CSV activities with hotel partners on the organizational loyalty of members(Lim, 2016). Therefore, the creation and sharing of green value might help shaping a green identity(Chulin & Hong, 2017). Consequently, the following hypothesis is proposed:

H5: There is a positive impact of GSValue on GOI.

2.5. Sustainability (Sus)

Since the Industrial Revolution in the second half of the 18th century, the world's population has grown from less than 1 billion to as many as 7.1 billion(Jianguo & Xiaochuan,

2014). There is no doubt that science and technology have been extensively promoted since the Industrial Revolution. The development of society and economy has dramatically improved the overall level of human material life; however, more environmental problems have also been accompanied(Wu, 2012). Humans domesticated plants and developed agriculture; domesticated animals and developed animal husbandry; settlement trade, division of labor and then created cities; followed by economic scale, industrialization, and modernization(William C. Clark, 2005).

Humans are not just domesticating individual populations or species but domesticating the entire ecosystem, the entire landscape, and even the entire biosphere (Clark et al., 2005; Kareiva et al., 2007; Weinstein & Turner, 2012; Wu, 2008). Nature is no longer "natural," and its "balance" has long been broken (Wu & Loucks, 1995). The earth system has been riddled with many environmental problems, including global climate change, a sharp decline in biodiversity, depletion of natural resources, and environmental quality. It's challenging the sustainability of human society. Therefore, how to continuously guarantee the basic structure and function of the earth's life-support system while meeting human development needs, namely "sustainable development" (Jerneck et al., 2011; Kates et al., 2001; Wu, 2006, 2010), becoming a major scientific and decision-making issue that has been widely concerned by academia and society questions (Bettencourt & Kaur, 2011; Kates, 2011; Wu & Wu, 2012).

The concept of sustainable development can be traced back to the core idea of Chinese classical philosophy "harmony between man and nature" (Wu, 2008). In the 1970s, when the problems of population, resources, ecology, and environment became worse and worse and widely known, sustainable development prevailed (Jianguo & Xiaochuan, 2014). However, from 1987 when the United Nations World Commission on Environment and Development formally defined sustainable development, to the first Earth Summit on Sustainable Development held by the United Nations in Rio de Janeiro, Brazil in 1992, to the second held in Johannesburg, South Africa in 2002. The 2012 Earth Summit, and the third Earth Summit on Sustainable Development, which returned to Rio de Janeiro, Brazil, in 2012, clearly show that the United Nations and governments worldwide have attached great importance to sustainable development for more than 20 years. As the scientific basis and operational guide for sustainable development, sustainability science emerged in the early 21st century.

There are more than one hundred definitions of sustainable development, but the most widely accepted is undoubtedly the World Commission on Environment and Development (WCED) definition in 1987 (Jianguo & Xiaochuan, 2014). In a report titled Our Common Future, WCED formally defined sustainable development for the first time as "meeting the needs of contemporary humans without compromising the ability of future generations to meet their own needs"; sustainable development is also "a process of change in which resource utilization, investment orientation, technological development, and policy changes are coordinated to continuously promote the potential to meet human needs now and, in the future," (*Report of the World Commission on Environment and Development*, n.d.). The WCED report further pointed out that meeting basic human needs is the most important; economic development and equal sharing of resources are necessary; effective participation of stakeholders can promote equality; development is limited, and the carrying capacity of the environment must be considered; Environmental resource characteristics, management systems, and socioeconomic status quo all affect the sustainability of a region or the world.

In 1999, the National Research Council (NRC) published a report entitled "Our Common Journey: A Transition Toward Sustainability," which discussed issues related to sustainable development. Various perspectives and the interrelationship between development and persistence (National Research Council, 1999). The NRC report follows the concept of the WCED report, pointing out that sustainable development is aimed at "achieving long-term coordination between social development goals and environmental limits"(Jianguo & Xiaochuan, 2014). The Johannesburg Declaration on Sustainable Development issued at the Earth Summit on Sustainable Development in 2002 further elaborated on the concept of the "three pillars" or "triple bottom line" of sustainable development, namely Sustainable development should simultaneously consider three aspects of environmental protection, economic development, and social equality.
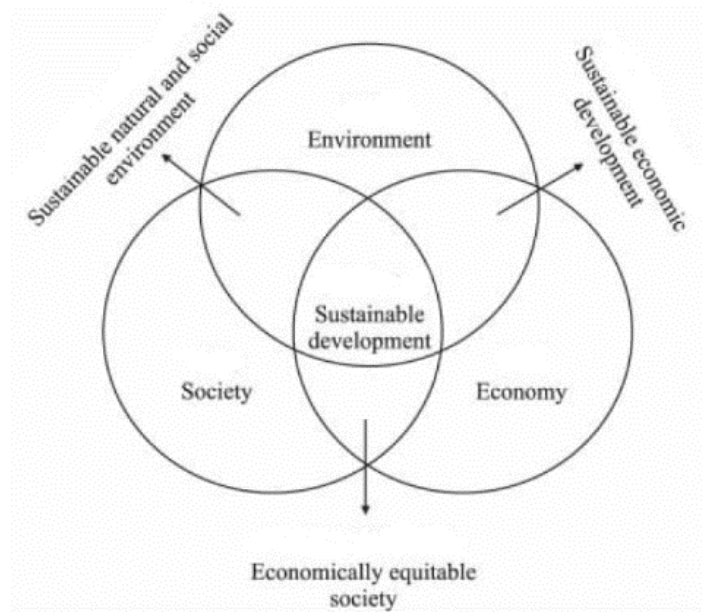
Figure 4. Dimensions of corporate social responsibility.

Reconciling the interconnectedness of environment, economy, and society is the focus and difficulty of sustainable development and understanding the relationship between the three often involves "strong sustainability" and "weak sustainability") The main difference between the two perspectives is how the "substitutability" between human-made or manufactured capital and natural capital is viewed (Figure 4). Specifically, the strong sustainability view argues that artificial capital (such as machines, tools, buildings, and infrastructure) and natural capital (referring to natural resources and ecosystems) are complementary and that environmental sustainability must be guaranteed to prevent damage to Economic development at the expense of the environment is unsustainable; the view of weak sustainability holds that the relationship between artificial capital and natural capital is a substitute for each other. Therefore, if the total capital does not decrease, a region with a deteriorating environment but a developed economy is also "sustainable" (Daly et al., 1995). Weak sustainability is not sustainable in the long run. And strong sustainability does not advocate extreme "environmentalism"; it emphasizes the importance and necessity of environmental sustainability. It is impossible to achieve long-term economic and social sustainability without environmental sustainability (Daly et al., 1995; Herman E. Daly & John B. Cobb, 1991; Jianguo & Xiaochuan, 2014; Wu, 2008).The extreme view of strong sustainability believes that the development and utilization of ecosystems should be eliminated, which is unrealistic, so it is called "absurdly strong sustainability" in the literature (Daly et al., 1995; Herman E. Daly & John B. Cobb, 1991; Jianguo & Xiaochuan, 2014; Wu, 2008). Strong and weak sustainability perspectives have important implications for

understanding and assessing sustainable development.

The theory of sustainable development of enterprises has not been put forward for a long time, but it is closely related to people's lives(Boons et al., 2013; Hart, 1997). From a macro perspective, the coordinated development of the economy or the environment is comprehensively analyzed, and enterprises are included as the main body in the research scope(Hart, 1997). With further development of the market economy, enterprises' competition of economic interests has been carried out. Many enterprises have excessively utilized resources and caused significant environmental damage to pursue more special interests, thus producing various adverse effects(Boons et al., 2013; Hart, 1997; Yang & Yan, 2020). These negative effects cannot be eliminated simply by relying on the power of the government, and an interconnected support system needs to be established from the perspective of sustainable development(T.-W. Chang, 2020; Hart, 1997; Lin & Darnall, 2010). Whether it is the economy or innovation ability, it reflects the competitiveness of enterprises, and the strengthening of human ecological and environmental protection awareness also allows environmental factors to constitute the framework for the survival and development of enterprises(Boons et al., 2013; Hart, 1997). Suppose an enterprise wants to maintain an appropriate operating state and profitability in the future competitive field. In that case, it needs to be aware of sustainable development in the long-term development process(Boons et al., 2013; Daly et al., 1995; Hart, 1997).

Enterprises play a vital role in society, and some enterprises are more significant than some governments(Angela, 2017; Hart, 1997). For example, Amazon's revenue in 2019 was $281 billion: more than Pakistan's GDP. Some enterprises now have so much power that can choose to create a better life for all or a few. Society is also pushing companies to invest in sustainability(Hart, 1997). Many governments, citizens and other stakeholders want to see companies concerned for their communities(Angela, 2017; Daly et al., 1995; Hart, 1997). Not doing so could mean losing the social license to operate, which is society's trust in the company(Angela, 2017; Boons et al., 2013; Daly et al., 1995).

What's more, companies can also take benefit from being green and environmentally friendly in the long time running(Baumgartner & Rauter, 2017; Daly et al., 1995; Yang & Yan, 2020). Evidence support that is easy to be found. E.g.:Reducing waste, for example, by investing in high-effective energy, often make savings. More and more investors have started to use high "ESG" (environmental, social and governance) rating

companies to manage risk. Creative and dedicated people are looking for employers who are committed to sustainability, and if that commitment is genuine, they're even willing to accept lower salaries(Boons et al., 2013; Hart, 1997).

But Sustainability is not just about making money(Hart, 1997). It's also a vision that executives who run powerful businesses want to see in the world they create. They imagine a world where everyone can thrive, living on a planet that is resilient and rich in biodiversity. They don't want to live in a world where only a few are doing well while others live in disease and waste(Boons et al., 2013; Hart, 1997).

Many terms exist to describe a company's social and environmental initiatives. Corporate Social Responsibility (CSR) is the most common; others include Environmental, Social and Governance (ESG), Shared Value, Triple Bottom Line and Managing Environmental Impact(Hart, 1997; Thorne et al., 2017). "Sustainability" is the most complete and influential of these related concepts. This is because sustainability requires managers to take a "systems view". A systems outlook recognizes that companies are part of a more extensive social and environmental system, systems change, and actions today must consider the future.(John Elkington, 2018)

Corporate Social Responsibility emphasizes the ethical responsibility of companies(Carroll, 1999; Mozes et al., 2011). However, what is ethical to one person or company may not be considered ethical by another. For example, some people believe that the minimum wage is responsible, while others believe that a higher "living wage" is a moral choice(Song et al., 2019). Corporate Sustainability emphasises science-based principles of corporate action. A corporate sustainability lens will determine the wages people can afford to meet their basic needs, which will vary from place to place. Furthermore, CSR is not about intergenerational equity; it is more about the present.

It has been proved that GSSV has a positive effect on green product psychological ownership(T.-W. Chang, 2020). When members of group have a high level of green product psychological ownership, they will pay more attention to green product and take measures spontaneously to improve green management.(T.-W. Chang, 2020). Therefore, the following hypothesis is proposed:

H6: There is a positive impact of GSSV on Sus.

With the fast development of globalization, life chances on the different continents

are more closely interconnected than ever before. It is therefore even more important to act jointly on the basis of shared values.(Angela, 2017).It has been proved in lots of different dimensions that creating shared value does great effect on sustainability, for example in ecosystem area (Yang & Yan, 2020), in farming industries(Biswas-Tortajada & Biswas, 2015) and hotel industries(Fernández-Gámez et al., 2019). Based de research and result above, the following hypothesis is made:

H7: There is a positive impact of GSValue on Sustainability

CHAPTER III.   : METHODOLOGY

Based on the literature review conducted and the assumptions presented in the previous section, Figure 5 presents the research model developed for this academic investigation.
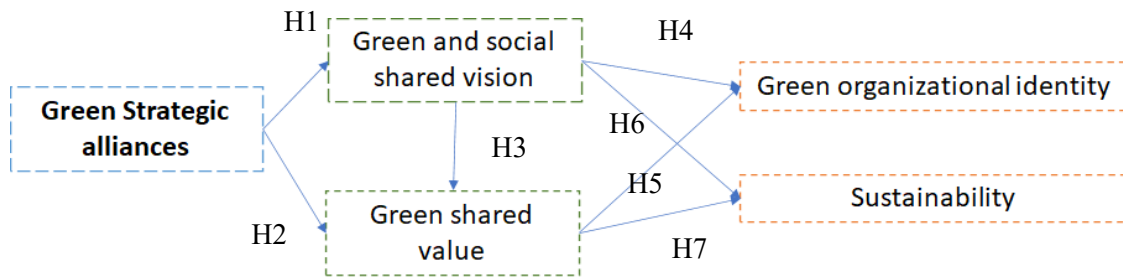

Figure 5. Proposed conceptual model and study hypotheses. Source: own elaboration.

3.1. Questionnaire platform

To carry out this study, quantitative analysis was used, in which a questionnaire was prepared using a Chinese internet platform. From December 15, 2021, to December 16, 2022, the questionnaire in the appendix (Appendix 1) is available in electronic format for quantitative data access, please visit the following link:

https://www.wjx.cn/vj/wFEnjMw.aspx.

This method was chosen because it keeps researchers at a distance, without any kind of influence, and allows to obtain data of higher precision and quality (Mattar, 1996). Furthermore, given that measures due to COVID-19 have been fluctuating, collecting data online is beneficial.

The sampling method for this survey was no probabilistic because the probability of selecting each case from the general population was unknown (Dworkin et al., 2009). The sample type was chosen for convenience as it is cheap, efficient and easy to implement (Jager et al., 2017). That is, there were no options for accessibility or convenience, and the questionnaire provided answers on the Internet.

The research sample of this study is composed of sources such as random push from Internet platforms, friend introductions, and previously accumulated work relationships. The respondents to the questionnaire were middle-level leaders or managers in the environmental, marketing, human resources, manufacturing or R&D departments of Chinese companies. To maximize the effective survey response rate, the researcher sends a message or email to each interviewed company before sending out the questionnaire, explaining the purpose of the survey and the content of the questionnaire, and confirming the position and function of the respondents. Respondents were asked to fill out the questionnaire via an internet platform within two weeks. In this study, the literature was referenced when designing the questionnaire.

3.2. Operationalization of concepts and variables

Lots studies in management use the questionnaire as the main instrument for collecting data in an organized, efficient and previously structured way. Each person (respondent) is asked to answer the same set of questions (Dworkin et al., 2009), recording the responses and the data obtained (Rego Monteiro da Hora et al., 2010). The advantages of using the questionnaire are: (1) being able to collect a large amount of data, (2) saving

time, (3) reducing the risk of misinterpretation of the data, (4) anonymous responses and (5) less pressure to obtain answers (Mattar, 1996).

Using the Internet platform as a data collection tool for scientific research is more beneficial than traditional face-to-face filling out paper questionnaires: (1) obtaining more respondents, (2) saving time (3) lower implementation costs (manpower and material resources and funding), (4) higher completion and (5) easier later data collection (Liliana Vasconcellos & Fernando Ascenção Guedes, 2007). Respondents have more time to answer the questionnaires in a more comfortable manner with high quality (Liliana Vasconcellos & Fernando Ascenção Guedes, 2007).

In a brief introduction, respondents were asked to cooperate, stating that the questionnaire was designed to collect data within the scope of the research work being carried out by the Faculty of Economics of the University of Coimbra. Furthermore, the confidentiality and anonymity of the information provided is clearly stated and there is no right or wrong answer. The response time is no limited, and finally, a brief explanation of how to complete the questionnaire.

To characterize the respondents, in the first part (control questions), questions of a personal and/or professional nature were selected: age, education, seniority, and rank. Questions about companies which respondents worked in were asked: location, maturity, number of workers, and sector of activity.

In the second part, the questionnaire was developed from existing and formally published academic articles to be able to manipulate the indicators using different indicators. The translation of variables and indicators from English into Chinese is crucial because the consulted articles were developed at an international level. According to Bell, Bryman, and Harley (2018), to measure a concept, different aspects or components of the concept must be considered.

3.3. Sampling

To test the proposed investigation model and the hypotheses, the data was collected through a structured questionnaire applied to all kinds of companies in China. The survey took three months in 26 provincial-level administrative regions in China（Guangdong, Fujian, Henan, Shandong, Hebei, Jiangsu, Beijing, Zhejiang, Shanghai, Liaoning, Sichuan, Shaanxi, Shanxi, Inner Mongolia, Jiangxi, Heilongjiang, Hubei, Chongqing, Anhui, Guizhou, Hunan, Taiwan, Tianjin, Xinjiang, Hainan, Gansu and there are also some overseas Chinese companies), among them, the eastern coastal areas accounted for 42%. Due to the epidemic, companies in various regions could not be systematically visited, and questionnaires could only be conducted through the Internet and agents. According to the calculation of the questionnaire platform, a total of 303 valid questionnaires were collected, and each questionnaire took an average of 13 minutes.
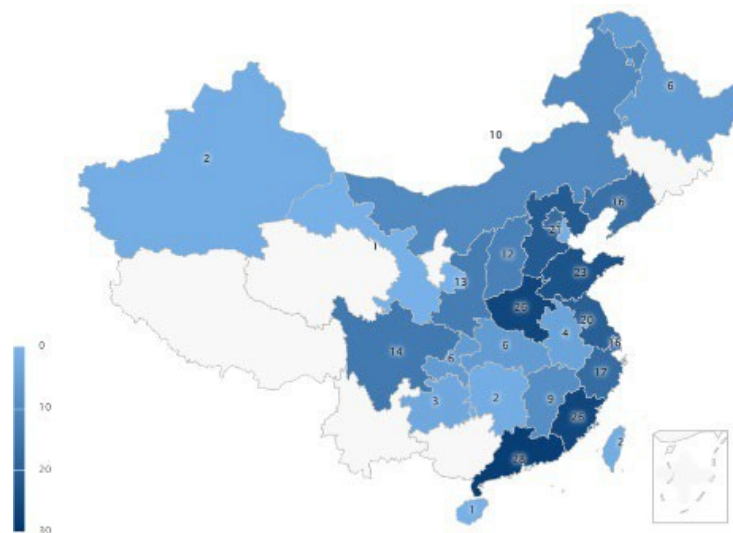
Figure 6. Geographical distribution diagram.
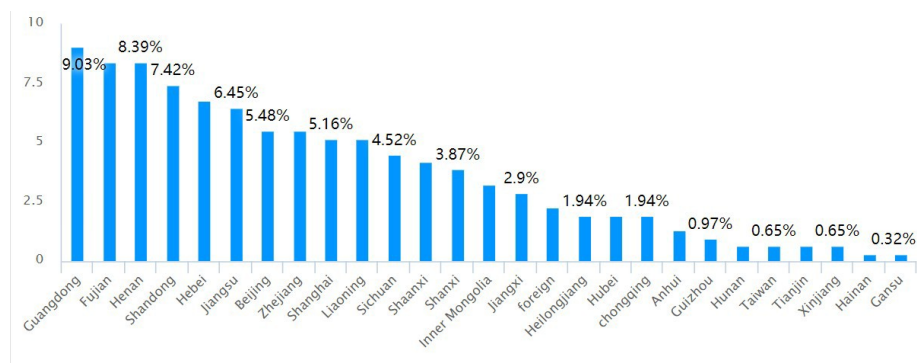
Figure 7. Answer Source Proportional Bar Chart.

The average age of final sample of 303 valid respondents was 34.4 years old, with an average tenure of 6.7 years in various positions (e.g., teacher, customer service, administration, manager, business service, accounting). Of all respondents, 89% had a bachelor's degree and 22% had a master's degree or higher. The companies surveyed came from the whole society (financial industry, healthcare, electricity, banking, internet, transportation, education, etc.), 86% were small companies (less than 1,000 employees), and 2% were medium-sized companies (1,000 to 2,000 employees), and 12% are large enterprises (more than 2,000 employees).

		China companies
Service		95
Industry		196
Size		
-	Small (less than 50 employees)	11%
-	Medium (between 51 and 250)	43
-	Large	45
Respondents		
-	Direction	18
-	Management	56
-	Operational	26
Time in company		
-	More than 25 years	22
-	10-25 years	45
-	5-9 years	69
-	Less than 5 years	169
	Total	303

Table 1 – Sample profile

3.4. Measurement

Measurement was based on scales developed and tested in previous investigations, respecting the original structure and formulation introducing the necessary adjustments. This meant translating the questionnaire from English into Chinese, which made it easier for respondents to understand it. Scale items are

shown in Table 2. A seven-point Likert scale was used, and participants were

instructed to score each item from 1 ("strongly disagree") to 7 ("strongly agree")

construct	Dimensions	Item	Loadings
Green Strategic Alliances (Ferreira et al., 2021; Schilke & Cook, 2013)	Inter-organizational coordination:	(1) Activities undertaken with alliance partners are well coordinated.	0.854
		(2) There are guarantees that the work tasks align with the alliance partners.	0.865
		(3) There are guarantees that the work performed coincides with the work of the alliance partners.	0.895
	Portfolio coordination	(4) There is a great deal of interaction with alliance partners in most decisions.	0.849
		(5) There are guarantees of adequate coordination between the activities of the different alliances.	0.883
		(6) The company determines areas of synergy in the alliance portfolio, including green alliances.	0.888
		(7) Some guarantees identified interdependencies between alliances, including "green alliances."	0.902
		(8) Potential overlaps between different alliances, including "green alliances," are evaluated.	0.870
	Inter organizational learning	(9) The company can learn from alliance partners, including "green alliances."	0.829
		(10) The company has management skills to absorb new knowledge from alliance partners, including "green alliances."	0.847
		(11) The company has good routines to analyze information obtained through alliance partners, including "green alliances."	0.869
	Alliance proactiveness	(12) The company can successfully incorporate new information acquired from alliance partners into existing knowledge, including "green alliances."	0.871
		(13) The company strives to anticipate competitiveness by entering new alliances, including "green alliances."	0.860
		(14) Often, the company approaches other companies with alliance proposals, including "green alliances."	0.876
		(15) Compared to the competition, the company is more proactive and agile in finding new alliance partnerships, including "green alliances."	0.898
	Alliance transformation	(16) We actively monitor the environment to identify opportunities for partnerships, including "green alliances."	0.896
		(17) The company is willing to set aside contractual terms to improve alliances' results, including "green alliances."	0.860
		(18) When an unexpected situation arises, the company prefers to modify an alliance agreement by including "green alliances" rather than insisting on the original terms.	0.917
		(19) The company is flexible in the face of requests to change its alliances, including "green alliances."	0.896
Sustainability	Economic	(1) The company takes action to reduce costs in	0.826

(Bacinello et al., 2020)		(2) The company carries out waste management actions to obtain profits.	0.827
		(3) The company carries out actions to manage derived technologies.	0.837
		(4) The company takes action to reduce water costs.	0.869
		(5) The company takes action to reduce energy costs.	0.888
		(6) The company has economic value creation processes.	0.844
	Social dimension	(7) The company pays attention to corporate reputation management.	0.857
		(8) The company advertises its social actions.	0.847
		(9) The company carries out actions to promote executive education and learning.	0.873
		(10) The company manages equal opportunities.	0.832
		(11) The company manages working practices and focuses on good practices and conditions.	0.895
		(12) The company presents the management of social actions.	0.879
		(13) The company has processes for creating social value.	0.791
	Environment dimension	(14) The company has actions aimed at managing environmental legislation.	0.863
		(15) The company focuses on managing "clean" technology.	0.865
		(16) The company manages environmental issues, focusing on minor use of available resources.	0.875
		(17) The company promotes sustainable actions to use natural resources.	0.870
		(18) The company presents actions to encourage environmental programs.	0.848
		(19) The company presents actions to treat effluents and waste to minimize air, water, and soil impacts.	0.867
		(20) The company presents processes for creating environmental value.	0.848
Green shared value (chen et al., 2015a, 2020)		(1) A commonality of environmental and social goals exists in the company.	0.900
		(2) A total agreement on the strategic environmental and social direction of the organization.	0.906
		(3) All members of the organization are committed to environmental and social strategies.	0.932
		(4) Employees of the organization are enthusiastic about the collective environmental and social mission of the organization.	0.908
Green and social shared vision (Fontoura & Coelho, 2020)		(1) The benefits arising out of the relationship are shared between both organizations.	0.788
		(2) In emergency situations, both firms rely on the support of the other part.	0.785
		(3) The management and corporate styles of the firms are similar.	0.803
		(4) There is transparency in negotiations.	0.812
		(5) There are proposals for projects aiming to reduce costs.	0.802
		(6) There is a priority in the assistance related to other buyers.	0.787
		(7) There is a priority in offering innovations related to other buyers.	0.830

	(8) There is quality conformance to products and services.	0.815
	(9) There is rapid confirmation of buyer orders.	0.800
	(10) There is financial health.	0.762
	(11) There is flexibility to meet requests for changes.	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.	0.869
	(2) The company's top managers, middle managers, and employees have a sense of pride in the company's environmental goals and missions.	0.879
	(3) The company's top managers, middle managers, and employees feel that the company has carved out a significant position with respect to environmental management and protection.	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.	0.870
	(5) The company's top managers, middle managers, and employees are knowledgeable about the company's environmental traditions and cultures.	0.865
	(6) The company's top managers, middle managers, and employees identify strongly with the company's actions with respect to environmental management and protection.	0.849

Table 2 - Measurement Scal

3.5. Model

Table 3 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 (Joseph F. Hair, 2010). 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).

Construct	X1	X2	X3	X4	X5	CR	AVE
Green Strategic Alliances (GSA)	**0.968**					0.95	0.64
Green and Social Shared Vision (GSSV)	0.657	**0.951**				0.95	0.75
Green Shared Value (GSValue)	0.630	0.417	**0.951**			0.95	0.83
Green Organizational Identity (GOI)	0.728	0.491	0.512	**0.947**		0.95	0.75
Sustainability (S)	0.730	0.494	0.578	0.645	**0.973**	0.98	0.73

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

Table 3 - Square Correlations, Cronbach´s Alpha,
Composite Reliability and Average Variance Extracted

3.6. Common method variance

To reduce the risk of common method variance, we used some procedural methods postulated by (MacKenzie et al., 2001): (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; (4) 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. The resulting adjustment indices show that the model did provide a good adjustment for the data:

The resulting adjustment indices show that the model did provide a good adjustment for the data: CMIN/DF=1.294; IFI=0.984; TLI=0.972; CFI=0.972; RMSEA=0.031.

3.7. Findings

The results in Table 4 support our hypotheses. Green Strategic Alliances is positively related to Green and Social Shared Vision ($\beta = 0.665$, $p < 0.001$), therefore Hypothesis 1 is supported. The path association between Green Strategic Alliances and Green Shared Value is positively related ($\beta = 0.653$ $p < 0.001$), supporting Hypothesis 2. Green and Social Shared Vision doesn't show a positive relationship with Green Shared Value ($\beta = -0.018$, $p = 0.791$), which indicates that Hypothesis 3 is not supported. Green and Social Shared Vision shows a positive relationship with Green Organizational Identity ($\beta = 0.346$, $p < 0.001$), indicates that Hypothesis 4 is supported. Green Shared Value also shows a positive relationship with Green Organizational Identity ($\beta = 0.381$, $p < 0.001$), indicates that Hypothesis 5 is supported. In the end, Green and Social Shared Vision has positive path associations Sustainability ($\beta = 0.315$, $p < 0.001$), also Green Shared Value has positive path with Sustainability ($\beta = 0.458$, $p < 0.001$), supporting Hypothesis 6 and 7. The structure model fit: CMIN/DF=1.396; IFI=0.963; TLI=0.961; CFI=0.963; RMSEA=0.036

Hypothesis	Relationship	SRW	C.R.	P	Supported/Not supported
H1	GSA -->GSSV	0.665	5.521	***	Supported
H2	GSA --> GSValue	0.653	1.294	***	Supported
H3	GSSV --> GSValue	-0.018	-0.265	0.791	Not supported
H4	GSSV --> GOI	0.346	5.976	***	Supported
H5	GSValue --> GOI	0.381	6.674	***	Supported
H6	GSSV --> Sus	0.315	5.551	***	Supported
H7	GSValue --> Sus	0.458	7.908	***	Supported

Table 4 - Results of the Structural Model

CHAPTER IV.   : DISCUSSION, CONCLUSION AND
IMPLICATION

4.1. Discussion and conclusion

If alliance members truly share a common vision, they will be connected by a collective desire for better sustainability. The main purpose of this study is to explore the relationship between green alliance strategy and green organizational identity and sustainability, through the effect of GSValue and GSSV in Chinese industry. Although previous studies have highlighted GSValue-related issues, no studies have been conducted in this context of China. This study employs three concepts that have been proposed—GSVALUE, GSSV, and GOI—to explore their relationship to green strategic alliances and sustainability.

Based on previous research findings, we developed a research framework for sustainability under a strategic alliance to discuss its relationship with GSValue, GSSV, and GOI. The empirical results show that green strategic alliances are positively correlated with GSValue and GSSV, which is mutually confirmed with the research of Khalid & Larimo (2012). However, GSValue and GSSV are not positively correlated, which contradicts the research conclusions of Andriopoulos (2001) or Halbesleben (2003), further research is needed. But under the whole research framework, it can be seen that green strategic alliances affects both GOI and sustainability through GSValue and GSSV. Therefore, obtaining resources and cooperation through green strategic alliances will help to improve the sustainability and GOI.

4.2. Theoretical implications

This study mainly aims to study the impact of green social shared vision and green shared value as intermediary variables on sustainability and green organizational identity in Chinese enterprises through green strategic alliances. On a theoretical level, several previous studies using Taiwanese SMEs as samples(C. H. Chang & Chen, 2013b; T.-W. Chang, 2020; T.-W. Chang & Hung, 2021). We found there is a broad applicability of some studies even in the larger mainland Chinese market. In addition, this study explores that at the macro level of China, some previous studies on GSValue, GSSV, and GOI may have broad applicability. For example, under the alliance theory, GSValue and GSSV have a positive effect on GOI(C. H. Chang & Chen, 2013b; T.-W. Chang & Hung, 2021; Y. S. Chen et al., 2014). In addition, it also verifies the applicability of some previous studies under the alliance theory. In addition, unexpectedly, this study did not demonstrate a positive effect between GSValue and GSSV in the macro context of China(Andriopoulos, 2001; Halbesleben et al., 2003; Hoe,

2007). It can be seen from this that many international research conclusions need to be further confirmed and improved when studying China-related issues.

4.3. Managerial implications

By taking Chinese enterprises as samples, this research finds the positive effects of green strategic alliances on the identity and sustainability of green organizations, which can serve as a reference for some small and medium-sized Chinese enterprises. Under the background of globalization, small and medium-sized enterprises lack green competitiveness due to their own lack of funds, lack of technology, lack of experience and other factors, and consumers are more inclined to buy green products. Therefore, small and medium-sized enterprises can form Green strategic alliances can enhance their own green competitiveness and contribute to the sustainable development of enterprises.

In addition, we must admit that China's current economic model is not only dominated by market competition, but also has the government's macro-control. Therefore, at the government level, small and medium-sized enterprises and large enterprises can be encouraged to implement green development strategies, mainly through the following aspects: 1) To formulate a reasonable and feasible sustainable development system. Through comparison, measurement, regulation and other means, separate specific standards for specific industries, conduct periodic dynamic evaluations of enterprises in the industry, and publish evaluation results to spur backward enterprises; 2) Further improve the green management system and regulations, Put forward specific rigid requirements and norms; 3) Give certain praise and affirmation to large enterprises that actively help small and medium-sized enterprises; 4) Pay attention to popularizing and improving the green values and sustainable development concepts of the public.

4.4. Limitations and directions for future research

On the level of samples, this study, the samples are not aimed at specific industries such as manufacturing, forestry, new energy, etc. Therefore, in specific industries, whether the conclusions of this study are still valid still needs to be further confirmed. The sample of research wasn't random. Sample is not random We used our connections and personal relations of former work. It might have effect on the result of research. Our study needs

further research to proof its board applicability. Also geographically, China has a vast territory. In fact, China's economic center is in the southeastern and central coastal areas, and the western region is relatively backward in economy. Whether the conclusions of this study are still valid in specific regions of China still needs to be further confirmed.

On the level of research methods, causality cannot be inferred because it is cross sectional. in future studies, longitudinal studies should be used to complete the analysis and establish a clear causality. Also, in further studies variables like entrepreneurial orientation, dynamic capabilities, learning orientation, among others, could be used as mediators to better capture the essence of the problem.

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APPENDIX 1

Questionnaire

How green strategic alliances influence sustainability and green organization

Dear Management,

As part of a research work being carried out at the Faculty of Economics of the University of Coimbra, and which aims to study the themes of social responsibility and innovation, we would like to request your collaboration by completing this questionnaire.

When answering the questionnaire, we ask you to mark with a cross (x) or a circle (O) the answer that you consider most correct or appropriate in relation to each of the statements. It should be noted that there are no right or wrong answers, and we only ask for your true opinion.

The information provided is strictly confidential and anonymous. Research to be carried out by:
- Beatriz Lopes Cancela, PhD student in Business Management at the Faculty of Economics of the University of Coimbra (beatrizlopesdoutoramentofeuc@gmail.com).
- Bai Xuesong
- Prof. Doctor Arnaldo Coelho, Faculty of Economics, University of Coimbra.
- Prof. Doctor Elisabete Neves, Coimbra Business School.

The success of this study depends on your collaboration. Thanks

SECTION I

Filling instructions:

The next questions are of a personal and/or professional nature. Short answers are intended.
- Age _____
- Education_____
- Career_____ _____
- Seniority in the company _____ _____
- Hierarchical level_____ _____

Questions about the company.
- Location_____ _____
- Company seniority _____
- Number of employees _____ _____
- Sector_____ _____

SECTION II

Filling instructions:

To respond to the following statements, we ask that you focus on existing practices in the company in which you work. Read the following sentences and rate each one, selecting from 1 to 7 on the scale, according to your degree of identification with each description.

1 – Strongly Disagree
2 – Disagree
3 – Somewhat Disagree
4 – Neither Agree nor Disagree
5 – Somewhat Agree
6 – Agree
7 – Strongly Agree

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Actions to reduce costs in materials management.							
Actions with waste management for revenue generation.							
Actions for management of derived technologies.							
Actions to reduce water costs							
Actions to reduce energy costs.							
Process of creating economic value.							
Corporate reputation management.							
Advertising of social actions.							
Actions to promote education and organizational learning.							
Management of equal opportunities in the company.							
Management of labor practices and good working conditions.							
Management of social actions in the company.							
Process of creating social value.							
Actions aimed at the management of environmental legislation.							
Management for clean technology management.							
Management of environmental issues with less use of available resources.							
Sustainable actions for the use of natural resources.							
Actions to encourage environmental programs.							
Actions to treat effluents and waste with lower emissions in air, water, and soil.							
Process of creating environmental value.							
Top managers, middle managers and employees of the organization are proud of its history regarding environmental and social management and protection.							
Top managers, middle managers and employees of the organization are proud of its environmental and social objectives and missions.							
Top managers, middle managers and employees think that the organization has maintained a significant position for environmental and social management and protection.							
Top managers, middle managers and employees of the organization think that the organization has formulated well-defined environmental and social objectives and missions.							
Top managers, middle managers and employees of the organization are knowledgeable about its environmental and social tradition and culture.							
Top managers, middle managers and employees of the organization identify that it provides considerable attention to environmental and social management and protection.							
With business partners, the benefits arising out of the relationship are shared between both organizations.							
With business partners, in emergency situations, both firms rely on the support of the other part.							
With business partners, the management and corporate styles of the firms are similar.							
With business partners, there is transparency in negotiations.							
With business partners, there are proposals for projects aiming to reduce costs.							
With business partners, there is priority in the assistance related to other buyers.							
With business partners, there is priority in offering innovations related to other buyers.							
With business partners, there is quality conformance to products and services.							
With business partners, there is rapid confirmation of buyer orders.							
With business partners, there is financial health.							
With business partners, there is flexibility to meet requests for changes.							
There is commonality of environmental and social goals in the company.							
There is total agreement on the company's strategic environmental and social direction.							
All members in the company are committed to the environmental and social strategies of the company.							
The company's employees are enthusiastic about the collective environmental and social mission of the company.							

Our activities with R&D alliance partners are well coordinated.						
We ensure that our work tasks fit with those of our R&D alliance partners very well.						
We ensure that our work is synchronized with the work of our R&D alliance partners.						
There is a great deal of interaction with our R&D alliance partners on most decisions.						
We ensure an appropriate coordination between the activities of our different R&D and "green alliances".						
We determine areas of synergy in our R&D alliance portfolio, including "green alliances".						
We ensure that interdependencies between our R&D alliances are identified, including "green alliances".						
We judge whether there are overlaps between our different R&D alliances, including "green alliances".						
We have the capability to learn from our R&D alliance partners, including "green alliances".						
We have the managerial competence to absorb new knowledge from our R&D and "green" alliances partners.						
We have adequate routines to analyze the information obtained from our R&D and "green" alliance partners.						
We can successfully incorporate in our existing knowledge new information acquired from our R&D and "green" alliances partners.						
We strive to preempt our competitiveness by entering R&D alliance opportunities, including "green" alliances.						
We often take the initiative in approaching firms with R&D alliance proposals, including "green" alliances.						
Compared to our competitors, we are far more proactive and responsive in finding and "going after" R&D partnerships, including "green alliances".						
We actively monitor our environment to identify R&D partnership opportunities, including "green" alliances.						
We are willing to put aside contractual terms to improve the outcome of our R&D and "green" alliances.						
When an unexpected situation arises, we would rather modify an R&D and "green" alliance agreement than insist on the original terms.						
Flexibility, in response to a request for change, is characteristic of our R&D and "green" alliance management process.						

We appreciate your cooperation