

## Article

# The Impact of Sustainable Intellectual Capital on Sustainable Performance: A Case Study

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**Abstract:** Intellectual capital (IC) has become one of the most valuable resources of an organisation. Along with the increasing concerns for sustainable practices, a new concept has emerged: Sustainable IC (SIC). However, research on SIC is scarce, especially when addressing its relationship with sustainable organisational performance. Through a case study conducted on a small- and medium-size industrial orthopaedic footwear organisation, we aimed to assess how an organisation's internal stakeholders perceive the concepts of SIC, sustainability, and sustainable performance and to comprehend better the effect of SIC on the economic, social, and environmental dimensions of sustainable organisational performance. Evidence suggests that the stakeholders were not familiar with the SIC concept and overemphasised the environmental dimension when referring to both sustainability and sustainable performance concepts. Furthermore, it was found that the organisation's sustainable performance was affected by all its SIC components (human, structural, and relational). This study contributes to the development of two different but complementing areas of research: IC and sustainability. It also provides important managerial implications for industrial organisations concerned with their performance. Finally, generalisation for other situations should only be conducted in a theoretical fashion.

**Keywords:** intellectual capital; sustainability; sustainable intellectual capital; sustainable performance; SME; case study



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## 1. Introduction

In the so-called modern knowledge economy, intellectual capital (IC) has been playing a crucial role in the business, institutional, and academic fields, helping the transition towards innovative, competitive, and sustainable organisational development. In broader terms, IC can be defined as the set of skills pertaining to an organisation's employees, which, together with the organisational structure and the relationships with stakeholders, can express with some degree of reliability the organisational potential for value creation [1]. Thus, IC encompasses people and their capabilities (human capital), organisational culture and technology (structural capital), and relationships (relational capital), allowing organisations to obtain competitive advantages [2–4].

Intellectual capital is closely related to knowledge management, which can foster organisational sustainability in different dimensions (social, economic, and environmental). Consequently, it leads to the development of production systems that respect the natural and social balance of the global ecosystem [5]. Intellectual capital management can promote corporate sustainability activities. Its potential contribution to solving social and

environmental issues has been stressed in the past few years [3,6]. Nowadays, companies value certain aspects, such as the environmental awareness of consumers or the reputation resulting from an activity that leads to more sustainable production. The ability of companies to meet the sustainability challenge might determine their profits or even their survival [7]. Therefore, organisations are now contributing to their sustainable performance by exploiting all forms of capital and managing their IC with greater efficiency [5,8].

The importance of IC and the rising concern for sustainable practices has allowed a new concept to emerge: sustainable intellectual capital (SIC) [4]. SIC represents the sum of all intangible resources, capabilities, knowledge, and relationships related to environmental protection [4], although it can also encompass the social and economic dimensions.

Few studies have addressed this concept (SIC), and even fewer have related it to corporate sustainability and, more specifically, sustainable performance. Therefore, this is a study that aims to (1) assess the perception of several internal stakeholders of an industrial small- and medium-sized enterprise (SME) regarding the concepts of SIC, sustainability and sustainable performance and (2) improve comprehension of the effect of SIC on the sustainable performance of such a company. Regarding the second objective, the following research questions were formulated:

RQ1 How does sustainable human capital influence the organisation's sustainable performance?

RQ2 How does sustainable structural capital influence the organisation's sustainable performance?

RQ3 How does sustainable relational capital influence the organisation's sustainable performance?

This paper is the result of a case study conducted in a small and medium-sized industrial orthopaedic footwear company. This industrial company possesses specific characteristics, such as the obligation to comply with several environmental standards, which turns it into a valuable setting for studying the effect of SIC. The case study allows better comprehension of the relationship between SIC and sustainable performance by offering some illustrations of it.

The following section is devoted to the review of relevant literature. Then, the methodology adopted in the study is described. Section 4 is devoted to presenting and discussing the case study's findings. Finally, in Section 5, some concluding remarks and some cues for further research are offered.

## 2. Conceptual Background

### 2.1. Intellectual Capital

In recent decades, there has been an evolutive process at different levels, such as in technologies, information systems, or production processes, which has led to the so-called "knowledge economy." However, the perception that people are a major resource for organisations was crucial for such a change [9].

Nowadays, intangible resources are seen as a better "weapon" for organisations to achieve better performance when compared to tangible ones, allowing them to enhance their competitive advantage [10,11]. Edvinsson and Malone [12] consider these intangible resources to be assets that are not visible in the traditional accounting balance sheet but add value to the organisation. Among these intangible resources, intellectual capital (IC) stands out.

Although the term IC was coined in 1969 by John Kenneth Galbraith, only in the 1980s did it become an important topic in strategic management and accounting, prompting discussion among academics and practitioners. Since then, IC research has evolved, and nowadays, it is possible to distinguish four distinct phases [13]. The first phase of research on IC has been aimed at achieving a shared terminology around the concept of IC, leading to a common awareness of its potential [14]. The second phase of research on IC emerged in the new millennium, focusing on measuring and reporting IC [15]. While these two phases allowed the understanding of the IC concept and its impact on organisations'

development, a third phase focused on the practical application of IC and its implications for management [15]. Finally, the fourth phase of IC research aimed to broaden the concept to new contexts and, more recently, address the ecological, social, and demographic problems that society has been facing [16]. Therefore, this paper positions itself in this phase of IC research.

Despite this evolution, IC remains a complex concept for which still there is no standardised definition. For example, Stewart [17] conceptualised IC as intellectual material, such as knowledge, information, intellectual property, and experiences that can be used to generate wealth. More recently, Sardo et al. [18] defined IC as encompassing knowledge-based activities and processes, which contribute to innovation, value creation, competitive advantages and far-reaching benefits for firms, ultimately adding value for stakeholders. Additionally, a meaningful definition comes from [19], which addresses an organisation's IC as "the immaterial sources of value related to employees' capabilities, the organisation's resources and processes, and the relationships with its stakeholders" (p. 26).

Currently, there is no agreement on the definition of IC or the classification of its dimensions. The literature often points to a classification into three dimensions: human capital (HC), structural capital (SC), and relational capital (RC) [17,20]. Despite this fact, in their study, Ferenhof et al. [21] suggest that the main IC dimensions not only encompass the human, structural, and relational capitals but also the social capital, which is more oriented towards society. However, this paper adopts the traditional taxonomy composed of three dimensions (HC, SC, RC). In addition, it adopts [19]'s IC definition, which encompasses these dimensions. Finally, it should be stressed that such dimensions should be seen interrelatedly [22].

The issue of IC has attracted the attention of several scholars and researchers around the world, and in 2008, a new concept was introduced by Chen [4]: sustainable intellectual capital (SIC) or "green IC." This concept, which integrates IC with environmental concerns, has been explored very little in IC literature [11]. Chen [4] defined SIC as intangible resources, capabilities, skills, and knowledge related to environmental protection and innovation at both the organisational and individual levels. In broader terms, it encompasses all the knowledge that an organisation reserves to stimulate the environmental management process and thus obtain a competitive advantage [23–25]. Therefore, companies create and add value to their products or services by offering environmentally friendly products or services [26].

Chen [4] applied the traditional IC taxonomy to this new concept. Therefore, SIC can encompass three dimensions: sustainable human capital (SHC), sustainable structural capital (SSC), and sustainable relational capital (SRC). SHC can be defined as employees' knowledge, skills, abilities, capabilities, experiences, attitudes, wisdom, and creativity regarding environmental protection or greener innovation [4,24,25]. SHC can be created through the development of more sustainable skills. Most environmental management has focused on developing activities such as training that can help stimulate employees' environmental knowledge, thus enabling organisations to develop greener innovations [24]. Additionally, organisations should promote satisfaction in the workplace to improve employees' performance and create HC [27], namely sustainable HC. HC can help organisations to recognise their intangible resources and use them to implement more sustainable activities. Greater prominence of SHC results in more sustainable organisations, as greater awareness and increased knowledge about environmental and sustainability issues makes these organisations more competitive [25].

According to [28], individuals are not the only ones responsible for environmental issues. SC can assist organisations in driving processes and systems to facilitate the development of the knowledge needed to create organisational capabilities. A well-established culture supported by effective management systems is essential for the strategic decision-making process. Therefore, sustainable human resource management and the development of an environmental culture can be crucial to potentiate an organisation's sustainable performance [24]. Hence, SSC can be conceptualised as the organisational resources, such

as management systems, computer systems, organisational processes, management philosophy, organisational culture, patents, copyrights, brands, information technology, or management mechanisms, related to environmental protection or ecological innovation in the firm [4,24,25] (Chen, 2008; Yong et al., 2019; Yusliza et al., 2020). Green innovation can be a crucial factor in achieving corporate sustainability [4].

Stakeholders' expectations (and especially clients' ones) have been changing. Aside from the concerns regarding products, prices, or services, stakeholders are increasingly focusing on other issues, such as organisations' sustainable environmental behaviours. Since the customer is at the core of the competitive environment that drives organisations, some authors, such as [6], consider the RC the most important IC dimension. An organisation's environmental behaviour can shape its clients' perceptions of it. Therefore, it can be claimed that SRC is based on iterative relationships between the organisation and its customers, suppliers, and other partners, with a focus on environmental aspects, something that may provide such an organisation with an important competitive advantage [4,23–25].

## 2.2. Sustainability and Corporate Social Responsibility

According to [29], the recognition of the human impact on the environment emerged in the mid-1960s. Since then, the concept of sustainability has evolved. Sustainability represents the evolution of society towards a fairer and richer world in which the natural environment and cultural achievements are preserved for future generations [30].

Currently, there has been a change in social awareness in the sense that companies should not make a profit at any cost and should bear in mind the potential impact of their activities. Therefore, they must consider all the economic, environmental, and social collateral effects that may impact society [31]. Organisations are key in inhibiting global unsustainability [32]. Sustainability is now associated with corporate business strategies, aiming to benefit stakeholders while improving people's lives and protecting the environment [32,33]. In fact, over time, companies have begun to recognise their responsibility in sustainability issues due to their negative impacts on society and the environment [32]. Therefore, the most widely used definition of corporate sustainability is adapted from the sustainable business development definition. Corporate sustainability can be defined as the adoption of business strategies and activities that consider the needs of the company and its stakeholders today while protecting the human and natural resources needed for the future [34]. It can also be conceptualised as a business strategy that drives corporate growth and long-term profitability by mandating the inclusion of environmental and social issues in the business model [35].

Closely related to the concept of sustainability is the one of corporate social responsibility (CSR). Howard R. Bowen developed this concept in 1953 with the publication of the book *Social Responsibilities of the Businessman*. The authors of [36] defined CSR as the managers' obligations to follow policies, make decisions, and follow practices conducive to society's goals and values. However, this concept has evolved, and a link has been established between CSR and stakeholders' long-term interests. The continuous shift in CSR literature has flowed from an ethical orientation to a performance orientation, where the role of stakeholders is considered crucial to business performance [37]. CSR aims to promote business practices that should be compatible with sustainable development [31,38]. It can be considered a specific consequence of business activities, where practices are established voluntarily and marked by the economic, legislative, ethical, and discretionary expectations that society has for the company [31].

Corporate social responsibility is largely based on the triple bottom line (TBL) concept. According to this concept, sustainable development seeks to balance three dimensions: economic, environmental, and social [39]. Žak [39] define the TBL as the production of goods and services that make use of non-polluting processes and conserve natural resources; that are safe and healthy for employees, the community, and consumers; and that are both economically viable and socially rewarding. Therefore, CSR can be conceptualised as an effective strategy grounded in the organisation's commitment to maximising long-term

economic, social, and environmental well-being through business practices, policies, and resources [40,41]. Accordingly, another aspect worth mentioning relates to organisations' growing need to disclose their activities' social, environmental, and economic impacts. Several factors, such as their reputation, require organisations to adopt ethical conduct and constant dialogue between stakeholders. Some studies have made explicit the importance of investing in CSR to create intangible resources, such as reputation, relations with the external environment, or employee motivation [42].

### 2.3. Sustainable Intellectual Capital and Sustainable Performance

CSR is considered an indicator of organisational success and a potential means of achieving sustainable development. However, CSR is grounded in three dimensions—economic, social, and environmental—when referring to sustainable development. In recent years, researchers have begun to relate the concepts of CSR and sustainability to the economic, social, and environmental performances of companies [43]. Global sustainability performance can be reported as a strategic tool for corporate management and communication once assessed and accounted for [44]. Therefore, it is essential to differentiate between economic, environmental, and social development to better understand the overall sustainability performance. The authors of [44] consider “sustainability performance” a new and overlooked term. They define sustainability performance “as the aggregate negative or positive bottom line of economic, environmental and social impacts of an entity against a defined baseline” (p. 253). More specifically, economic performance should illustrate an organisation's economic impact on society. Environmental performance is related to the organisation's impact on natural systems, ecosystems, soil, air, and water. It encompasses the performance related to the consumption of, for example, raw materials, water, or energy. Still, it also addresses other potential problems, such as waste production or waste and gas emissions. Finally, social performance refers to the impacts of the organisational activity on the social systems in which it operates. Social performance encompasses the concern with labour practices and decent work and the consequences of organisations' actions on the community or the product.

Corporate sustainability performance mainly focuses on the environmental, social, and economic performances of sustainable development. However, many researchers have considered financial performance to be the proxy for a company's performance. Therefore, the relationship between corporate sustainability performance and firm performance is still not well understood [45]. Alvino et al. [46] analysed how IC characteristics can promote entrepreneurship based on sustainable and smart development and remain in line with the Sustainable Development Goals and sustainable performance. They show that IC's potential development is related to the concept of long-term value and thus to the 2030 Agenda for Sustainable Development.

According to [47], intangible resources are less expensive, facilitating sustainable performance, especially in companies with scarce resources [3]. Combined with other elements of innovation, IC can improve processes, convey information, and stimulate relationships, with positive effects on environmental and social performance. IC can foster a cultural change in organisations and civil society towards a commitment to sustainability [46].

That is, CI contributes to achieving sustainable performance for organisations.

According to [25], Sustainable Intellectual Capital (and its dimensions) and sustainable performance (environmental, social and economic) are closely related. In their study, they found that SIC positively influences economic, environmental, and social performance. Organisations cannot ignore their activities' environmental and social impacts in today's world. It is crucial to explore the interrelationship between SHC, SSC, and SRC and corporate sustainability.

#### 2.3.1. Sustainable Human Capital and Sustainable Performance

Human resources are crucial to developing corporate sustainability since HC helps improve an organisation's performance across its three dimensions (economic, environ-

mental, and social). In addition, a positive relationship between knowledge creation and employees' behaviours can be found [48,49]. However, regarding the specific case of SHC, several studies did not find evidence of a significant relationship between this dimension and the sustainable growth of an organisation. For example, Omar et al. [50] assessed the relationship between SHC and business sustainability in Malaysian manufacturing SMEs. Still, they did not find any evidence of a positive effect of SHC on business sustainability. Similarly, [51], by studying non-financial firms in India, did not notice any evidence of a significant relationship between CHS and sustainable organisational growth.

SHC creates ethical principles and an organisational culture related to the company's sustainable value. Therefore, CSR strategies can positively influence the SHC of companies in different ways. Firstly, by being more sensitive to environmental and social issues, companies can attract employees who have a predisposition to acquire more knowledge. Secondly, CSR strategies can lead to human resource practices, such as developing environment-related activities or the attribution of rewards to achieve objectives related to social and environmental commitment. Finally, CSR tends to improve the employees' morale and working conditions, creating an environment that may foster new sustainability-related ideas [52]. Therefore, effective implementation of CSR practices benefits HC efficiency and can have positive implications for sustainable performance [52].

### 2.3.2. Sustainable Structural Capital and Sustainable Performance

An organisation with strongly entrenched SC potentially has a robust collaborative environment that can motivate employees and other stakeholders to transfer and absorb more knowledge. Conversely, an organisation with deficient systems and procedures tends not to be able to achieve its full performance potential [11]. The company's instituted policies and structure are crucial for implementing and achieving corporate sustainability [25]. Organisations need an organisational structure to implement CSR strategies [28]. Some studies show evidence of a positive influence of SSC on firm performance [53,54]. For example, Delgado-Verde et al. [55] found a positive effect of SSC on the development and innovation of environmental products. Additionally, CSR strategies can foster the creation of SC, such as organisational capabilities, processes, organisational culture, or image, and consequently improve their performance [4].

### 2.3.3. Performance of Sustainable Relational Capital

Finally, RC enables the exchange of information between the organisation and its stakeholders and thus allows companies to hold relevant information. Thus, the greater the interactions with stakeholders, the better the habits and practices of an organisation [11]. Collaboration is crucial to fostering knowledge sharing and environmental awareness, stimulating the transition to a more sustainable society. Therefore, knowledge sharing and collaboration are essential for adopting sustainable practices [56,57]. Omar et al. [50] concluded that SRC has a positive and significant relationship with corporate sustainability. Similarly, in their research on industrial firms in Korea, Xu and Wang [3] suggest that IC positively affects corporate sustainability, stressing the importance of RC.

From another point of view, RC can be influenced by CSR activities, namely due to stakeholders' expectations regarding social and environmental issues. Thus, RC should be well managed for the organisation to obtain competitive advantages [24,58]. Well-managed environmental and social aspects can develop the organisation's culture and image and foster its commitment towards sustainability [59].

## 3. Methodology

Company X is a Portuguese manufacturing SME founded in 1999 and is owned by two international companies. It produces orthopaedic footwear for both adults and children. This product is specific and customisable and is intended primarily for the disabled and diabetics with severe pathological deformities. Currently, all of Company X's shoes are made in Portugal, relying on a workforce of about 200 employees.

This article aims to assess the perception of Company X's several internal stakeholders regarding the concepts of SIC, sustainability, and sustainable performance and to improve comprehension of the effect of SIC on its sustainable performance. Thus, a single in-depth case study was adopted to attain the aforementioned objectives. One of the advantages of this method is to provide an assessment and understanding of unique, rare, and atypical organisations. Such is the case of Company X. Furthermore, there is a lack of understanding of the complex phenomenon (i.e., the relationship between SIC and sustainable performance) [60,61].

#### *Contextualisation of the Organisation and Methodological Framework of the Research*

The complexity of the organisation and the diversity of the participants required the adoption of different sources for collecting data, specifically semi-structured interviews, document analysis, and direct observation. The use of such sources allowed the triangulation of the data, which makes the study more consistent, according to [61]. Yin [61] considers these the most commonly used data sources in case studies. Semi-structured interviews, which have a conversational nature, should be grounded in a script. Documents, such as emails, letters, minutes, or mass media articles, are also considered important information sources. Finally, direct observation is very often used to assess both the context and behaviours that occurred during the interviews or in other circumstances [61].

The data were collected between July and August 2021. Eleven semi-structured interviews were conducted with the CEO; a Finance and Information Technology Manager (FITM); a Marketing Manager (MM); an R&D Manager (RDM); a Continuous Improvement Manager (CIM); a Quality Manager (QM); a Supply Chain Manager (SCM), an Environment, Hygiene, and Safety Manager (EHSM); a Human Resources Manager (HRM); a Plant Manager (PM); and a Finance Team Leader (FT). It should be stressed that the EHSM is also responsible for the finishing area of a specific product: modular concept orthopaedics. These interviewees were chosen due to their deep knowledge of the organisation's different areas, thus providing us with important illustrations of how Company X's SIC is interrelated with its sustainable performance. While searching for illustrations, the interviews also aimed to capture the stakeholders' perceptions regarding the concepts of SIC, sustainability, and sustainable performance. The semi-structured interviews were held at the company's facilities, supported by a previously elaborated script. Their duration ranged from 18 to 45 min. All the interviews were recorded and then transcribed. In addition, notes were taken during those interviews. The interview's theme and objective were presented at the beginning of the interview.

Document analysis was also conducted. The individual project application report and information retrieved from the company's website were used to characterise the organisation, and an auditing checklist was used for illustrative purposes. Finally, direct observation was used. It allowed for contextualising the organisation and for assessment of the interviewees' behaviours: receptivity, confidence, curiosity, importance, and enthusiasm regarding the theme under discussion.

The qualitative data were analysed through a content analysis, which allowed us to organise and categorise it. The data were divided into pre-defined categories and subcategories of analysis considering the concepts in question—SIC, sustainability, and sustainable performance—and the effect of SIC on sustainable performance. For example, illustrations found in the interviews were allocated to each category and subcategory depicted in Table 1.

Two authors analysed and discussed the interviews, notes, and documents to prevent possible bias. In contrast, the observation data were analysed by one author, although discussed with the other members of the research team.

**Table 1.** Codification.

Theme	Categories	Subcategories
SIC Perception	Sustainable Human Capital Sustainable Structural Capital Sustainable Relational Capital	
Sustainability and Sustainable Performance Perception	Economic Practices Economic Performance Environmental Practices Environmental Performance Social Practices Social Performance	
The Effect of SIC on Sustainable Performance	The Effect of SHC on Sustainable Performance	SHC and Economic Performance SHC and Environmental Performance SHC and Social Performance
	The Effect of SSC on Sustainable Performance	SSC and Economic Performance SSC and Environmental Performance SSC and Social Performance
	The Effect of SRC on Sustainable Performance	SRC and Economic Performance SRC and Environmental Performance SRC and Social Performance

Source: Prepared by the authors.

## 4. Findings and Discussion

### 4.1. Perception of SIC, Sustainability, and Sustainable Performance Concepts

The case study provided evidence of a lack of knowledge regarding the IC concept, especially sustainable intellectual capital. However, after the interviewer briefly explained what IC and SIC meant (also to proceed with the interviews), it was found that the basic idea behind the SIC concept was implicit in most interviewees' answers. For example, it was the HRM who stated "[t]he concept itself, and in this way, I had never heard of it ( . . . ). What is implied in the concept is not new. We already have that perception. [However] ( . . . ) attributing a name to this concept [is different] ( . . . ) is the first time [I have] come into contact with it." Similarly, the FITM claimed that "when a person understands what each term means, there are areas that are perfectly familiar to me."

The findings also suggest that before the concept of SIC was made clear by the interviewer, the stakeholders emphasised the human dimension of IC. They mistook the concept (SIC) for one of its dimensions (SHC). As stated by the RDM, "if I were to work for [another] company now, I would already have [skills regarding] sustainability because I already do it on a personal level." The organisation's internal actors had no perception of the SIC concept, associating it indirectly with the human dimension, thus contracting the literature that often points to a three-dimensional classification (see, for example, [17,20]). Therefore, they were also unaware of the need for interaction between the IC dimensions to create value, as [22] suggested. However, it should be highlighted that the SCM stated that "SIC is the intangible capital, but ultimately it will be the company's concern regarding the [environmental] resources that they have at their disposal." This claim is in line with [4]'s definition of SIC as integrating IC with environmental aspects.

When respondents were asked if they were familiar with the sustainability and sustainable performance concepts, they all expressed their understanding. However, findings show a greater focus on environmental sustainability and, to a lesser extent, on the economic dimension. For example, the MM argued that "maybe the environmental area ( . . . ) is the one where I am most used to hearing the concept of sustainability or even in the economic area ( . . . ). But I am familiar with the concept." Another example came from the HRM, who stated that "sustainability is the company carrying out its activity without harming the environment ( . . . ). [It is] everything we do daily, from turning off the lights, separating



the rubbish ( . . . ) and respecting the environment so that we do not harm the activity we are developing.”

Therefore, the findings show that the company’s internal actors mistook sustainability for one of its dimensions: the environmental one. Sustainability was not perceived as a construct encompassing different and interrelated dimensions, as suggested by several authors, such as [32] or [35]. While these authors consider corporate sustainability a business strategy to stimulate economic growth, requiring the inclusion of environmental and social dimensions, Žak [39] suggests a balance between these dimensions (environmental, social, and economic). Accordingly, to proceed with the interviews, the interviewer needed to clarify the concept of sustainability. Hence, interviewees could express their perception of the company’s performance considering the different dimensions of sustainability (economic, environmental, and social) in a more rigorous manner. Economic performance was perceived as efficiency in production processes, focusing on waste reduction. As the PM puts it, “it is [our concern] to think about these issues and innovate. ( . . . ) For example ( . . . ) at this moment, a series of actions are underway that aim to lead to a concept: ( . . . ) the zero waste or zero cost concerning the waste that the company generates.” The reduction in waste management costs, the adaptation of technologies for profitable application, and the differentiation of products/processes for environmental protection are some of the economic performance key measures addressed by [11].

Furthermore, there was a unanimous perception regarding the organisation’s concerns towards environmental issues. In Company X, different environmental initiatives, such as going paper-free or water and energy saving (through solar panels) were being addressed. However, the focus on waste and solutions to reduce it was present in most answers. This focus was addressed by the EHSM, who claimed that “here, environmental performance is a little bit measured in the resources and waste that we produce.” Another example came from the CIM, who argued that “we have to reduce waste and we have targets. One target for this year is a 20% reduction in the waste we generate.” The FITM assumed the importance of decreasing waste and establishing best practices. Thus, the interviewees’ perceptions are in line with [11]’s study, in which indicators such as reducing waste or energy consumption are used to measure an organisation’s environmental performance. Non-polluting processes that conserve natural resources should be adopted to produce goods (see [39]).

Waste reduction and management were seen as crucial in economic and environmental performance. The FT and the CIM stated that the company was committed to incurring costs and making investments to positively impact the environment.

Finally, most interviewees stressed the importance of the employees’ well-being regarding the social dimension, giving examples of several initiatives and forms of valorisation and recognition, such as career monitoring, employee integration programmes, or health-care programs. As the FITM put it, “[w]e are a company that is extremely concerned with the employees. ( . . . ) it is much more than the salary. [There is] a fundamental relational component and proximity with the employee that does not exist in many companies.” The interviewees’ perception is in line with [11,39]. These authors stress the importance of employees’ health and safety to measure social performance. As claimed by the organisation’s CEO, although several efforts have been made, “we can do much more.”

#### *4.2. The Effect of Sustainable Intellectual Capital on Sustainable Performance*

The second objective of this paper is focused on understanding the effect of SIC and sustainable performance. More specifically, it is intended to assess how SHC, SSC, and SRC influence the organisation’s sustainable performance.

##### *4.2.1. The Effect of Sustainable Human Capital on Sustainable Performance*

The findings suggest that SHC creation affects the organisation’s sustainable performance in broader terms, as well as regarding each dimension (economic, environmental, and social). All interviewees considered SHC an important dimension, giving examples

of how it was created over time. Some examples were training actions provided by the organisation, employees' empowerment, or knowledge dissemination among them, which aimed to increase their awareness of the theme and develop their knowledge on environmental issues, creating new skills. In the monthly meetings, "there is the [so-called] environment note" (FITM). In these meetings, "employees are sensitised to [the issue] of waste reduction" (RDM). According to the FT, "in general meetings, the manufacturing director always has a small amount of time dedicated to something related to environmental protection." The CEO said, "it is all about educating people as much as possible and influencing [their] behaviours." According to the MM, "[there has been] a great investment in educating people regarding the environment, [such as through] training sessions on how to separate waste (. . .)." He also claimed that "people had some doubts, and many were quite pertinent." According to the QM, "we [placed] several posters showing how many planets we have already consumed in terms of natural resources so that the employees can be aware [of the environmental problems]." Over time, the company has been enhancing its employees' "green" knowledge base through different means (i.e., creating SHC) to improve its sustainable performance.

The findings also show the organisation's importance in fostering employees' knowledge of waste and residues reduction and the continuous search for solutions, which could potentially impact the organisation's economic, environmental, and social performance. It is important to stress that the different sustainable performance dimensions are inter-related. In fact, according to the RDM, there is a relationship between SHC and both economic and environmental dimensions. In his words, "[employees] are very encouraged [to develop knowledge] about environmental issues (. . .). For example, concerning waste separation, we already had [training activities conducted by a specialised organisation] or people are told how much we pay for collecting waste in monthly meetings. (. . .) at an economic level, people must be aware that the more [materials] we [throw away], the more money we are also [throwing away]." Additionally, "employees are sensitised to reduce water consumption, something which simultaneously impacts the monthly invoice," says the EHSM.

Furthermore, SHC can affect the sustainable social performance of organisations. The PM exemplified how fostering employees' environmental knowledge may result in social benefits for them. He illustrated this relationship by claiming that "we have this annual cost [with environmental issues], and we want to close it to zero. [If employees have more environmental knowledge and can be] more effective (. . .) I [can] bring this issue to the table [by] saying that if we spend an average of 1000 € per year, I intend to spend an average of 500 € (. . .). Probably I will invest the remaining 500 € in improving your working conditions or other types of social equipment so that you can have better conditions during your downtime (. . .), or I will improve the general conditions of the common spaces".

Therefore, in broader terms, this "is part of the individual to change his behaviour (. . .). [Organisational] performance will become greater the more impact we have at the individual level (HRM). The results mentioned above are in line with [48,49]. They consider a positive relationship between employees' behaviours and knowledge, and sustainable organisational performance improvement in its three dimensions, despite [50] or [51] suggesting that such a relationship is not significant.

#### 4.2.2. The Effect of Sustainable Structural Capital on Sustainable Performance

The findings show that all interviewees stressed the importance of SSC to foster the organisation's sustainable performance. Several illustrations regarding SSC creation were provided. Most of them focus on the organisational culture, operational procedures, environment protection system (which encompasses the management policies and the environmental certification), or investments made in intangibles such as software, allowing for a reduction in waste. The FITM stated that "at Company X, these [environment] themes are part of its culture." He also stressed the importance of "looking for better [environmental] processes, better [environmental] routines, and better products, which

have a [great] impact.” He also stated that “[environmental] certification itself is a major point.” “Green” operational procedures and environmental management policies are also preoccupations in Company X. For example, as claimed by the RDM, the company almost demands that its customers place their orders online instead of using paper. In fact, “the company has policies to reduce paper and encourage the use of IT means to do so” (FT). In the PM’s words, “one of the major goals of Lean methodology is the reduction of waste.” According to this interviewee, “on a day-to-day basis, if there are no effective environmental policies and standards that people [have to follow], then [our environmental goals] end up losing strength and expression ( . . . ). I do not want [this] to happen ( . . . ). People have to be prepared to [be sustainable].” In fact, there is some evidence of employees’ efforts towards such a goal. In the FT’s words, “the production people themselves are careful during long stoppages. ( . . . ) they turn off the lights and machines, and there are sensors installed so that the ovens turn off at the end of the day and there is no waste.” Finally, SSC was created through investment in new software. As the FITM claims, “[the automatic cutting machine] does a better grouping ( . . . ) of a certain number of orders for a better allocation of skin.” According to the CIM, the company works greatly with waste analysis systems.

Furthermore, the findings suggest that the organisation’s SSC impacts its environmental performance. Such effects are suggested by the SCM, who argued that “the structural [component] of a company has everything to do with [its] sustainable performance. If the company did not have a structure and would not be organised, the waste or the consumption of natural resources would be much greater.” The general concern regarding the reduction of waste was again present. The interviewees stressed different factors that foster Company X’s environmental performance, such as the “paper’s reduction” or the use of more technological mechanisms linked with a transition to 100% recycled material adoption. According to the RDM, “at the production level, information is transferred through tablets so that we have less printing”.

Furthermore, the Lean methodology implemented in the organisation greatly contributed to improving not only its environmental performance but also its economic one. Through this methodology, the different company areas started to be audited according to indicators such as quality, hygiene, and safety, or the environment and waste. Therefore, the auditing results for the “finishing” area (provided in May 2021) allowed for obtaining suitable illustrations regarding the effects of SSC on the organisation’s sustainable performance. Sustainable practices, such as waste reduction, positively affected its environmental performance. In addition, along with waste concerns, improving the quality of the final product while attending to environmental issues positively influenced the organisation’s economic performance. Finally, health and safety items showed concern for the well-being of the employees in their workplace. In general terms, the results were favourable for the audited area, showing the employees’ commitment to continuous improvement. The whole organisation (including this area) gradually aims to achieve the best scores. This fact is in line with [11], who state that an organisation with a solid embedded structural capital that fosters a collaborative environment can motivate employees and stakeholders to absorb more knowledge and thus improve the organisation’s performance.

The findings are also in line with [53,54], who consider that SSC has a positive effect on firm performance (on its three dimensions), and with [25], who state that the policies and structure of an organisation are essential for implementing and achieving corporate sustainability.

#### 4.2.3. The Effect of Sustainable Relational Capital on Sustainable Performance

As with the SIC dimensions mentioned above, all interviewees considered SRC important. The interviews provided insights into how SRC is created and how it affects the company’s sustainable performance. Several means are used to develop SRC. However, the efforts made to disclose Company X’s environmental practices with the aim of strengthening its image should be stressed. These efforts were mainly made by the company’s marketing and communication department. According to the MM, “very often, we post

[on social media] the initiatives we undertake, such as [replacing] a machine [with] a more efficient one or publicising a new packaging." The importance of the marketing department was also highlighted by the PM, who provided other illustrations: "for example, when the solar panels were installed, this [fact] was widely disseminated ( . . . ) so that the community could see what we were doing. Three years ago, we held events to separate waste and clean the factory ( . . . ). These [events] were also publicised on social networks so that people could see our [environmental] concerns."

Furthermore, there is evidence that at a relational level, although some partners do not value Company X's environmental practices, most of them do. The FITM stated that "there are clients who value it ( . . . ) and others not so much. However, [most clients] are very pro-sustainability. ( . . . ) Obviously, we are interested that clients appreciate all [our efforts]." The PM gave the following example: the company used plastic film to pack the product. Due to environmental concerns, they started to adopt cellulose paper. However, it was necessary to explain to the clients the reasons behind this change, and the clients understood. In fact, a German client congratulated the company for its environmental efforts. As the PM put it, "the German market [has] great concerns at the environmental and social levels. [They care about] the way we treat our employees, about cleaning [or about] the waste we generate." This illustrates how company X's reputation improved and, consequently, its SRC. However, the findings also suggest the existence of relational barriers, which can potentially hinder the organisation's environmental performance. An illustration regarding the choice of more sustainable materials is provided. According to the RDM, "[Company X's] customers are very traditional. For them, good shoes ( . . . ) have to be made in leather. [They are not] very sympathetic to new sustainable [products]". This fact means that SRC creation is also affected by the type of customer, something which is in line with [24,58,59]. These authors suggest that SRC reflects stakeholders' expectations about environmental issues.

The case study also suggests that, from an economic perspective, the concerns regarding developing products with more sustainable raw materials are not rewarding for both the company and the customer since they are more expensive and have a short life span. For customers, the issue of the durability of orthopaedic footwear is crucial due to their specific needs and potential reimbursements by insurance companies. Nevertheless, "although the demand for this type of alternative in orthopaedic footwear is not usual for the company, this is a path to explore" (QM). As the QM explained, "it is not normal at all, especially in orthopaedic footwear, to have these alternatives. Our clients, with whom we deal, have [only made a few orders] (...) not as much as the other shoes." Therefore, it is perceived that there is some investment in SRC. However, it does not translate into a good economic performance, something that is not in line with authors such as [50] or [3], who stress the positive relationship between SRC and sustainable economic performance.

Finally, materials that are not reused to produce footwear (such as leather, soles, or other leftovers) are donated to other institutions and schools. According to the RDM, Company X even suggests to its clients to recycle their shoes when they stop using them or even pick clothes or footwear to donate, such as what is done in the northern countries. This fact converges with the social dimension of sustainable performance, thus suggesting that the existing relationships with third parties improve the organisation's social performance. Therefore, on the one hand, the company does not have the cost of destroying the raw material. On the other hand, it complies with the principles of reusing and recycling materials and engaging with the community.

The findings, summarised in Table 2, are partially in line with the literature. Although there should be a positive relationship between SRC and sustainable performance according to [3,50], the case study provided evidence of positive effects of SRC on sustainable performance, except for the economic dimension, which, as already mentioned, was due to the specific type of product and client. However, by sharing ideas and fostering collaboration toward sustainable practices, Company X has been contributing to stimulating environmen-

tal awareness and knowledge among partners and promoting a more sustainable society (see [56,57]).

**Table 2.** Summary of the findings.

Objectives	Concepts/Questions	Findings
Perception of several internal stakeholders of an industrial SME enterprise regarding the following concepts:	SIC	The organisation's internal actors had no perception of the SIC concept, indirectly relating it to the human dimension. They were unaware that IC dimensions need to be interrelated to create value.
	Sustainability	Findings show that the company's internal actors mistook sustainability for one of its dimensions: the environmental one. Sustainability was not perceived as a construct encompassing different and interrelated dimensions.
	Sustainable Performance	Most internal stakeholders stressed the importance of economic and social issues. However, there was a unanimous perception regarding the organisation's concerns towards the environmental issues. Waste reduction and management were seen as crucial in economic and environmental performance
Comprehension of the effect of SIC on the sustainable performance of an industrial SME enterprise	SHC's Effect on Sustainable Performance	SHC affects sustainable performance in broader terms. A positive relationship was found between employees' behaviours, knowledge, and sustainable organisational performance improvement in its three dimensions (economic, environmental, and social).
	SSC's Effect on Sustainable Performance	The organisation's SSC is essential for implementing and achieving corporate sustainability. SSC positively impacts firm performance (on its three dimensions).
	SRC's effect on Sustainable performance	A positive relationship between SRC and sustainable performance was found, except for the economic dimension (which was considered not rewarding for both the company and the customer).

Source: Prepared by the authors.

## 5. Concluding Remarks

This paper's goal is twofold: assess the perception of several stakeholders of an industrial SME regarding the concepts of SIC, sustainability, and sustainable performance and understand the effect of SIC on the sustainable performance of an industrial company. A single case study was conducted and analysed in depth to attain this goal.

Regarding the first objective, it was found that the different internal stakeholders were not familiar with the concept of IC and SIC. Concerning the concepts of sustainability and sustainable performance, all interviewees seemed familiar with them. However, they placed a greater emphasis on the environmental dimension when compared with the economic and social ones. It was concluded that these actors were not aware of the importance of addressing those three dimensions in an interconnected way nor of the significance of such interrelationship for strategic matters and performance measurement, as suggested by [32,35,39].

The first research question of the second objective was intended to understand the effect of SHC on the organisation's sustainable performance. It was concluded that all interviewees considered SHC important for achieving good sustainable performance. The creation of SHC, through training actions, awareness-raising initiatives, and other incentives, had a positive effect on economic and environmental performance. A great concern

was also noticed regarding efforts to reduce waste and residues. While these actions potentiate a reduction in costs, they simultaneously have an impact at an environmental level. Finally, evidence of a positive influence of SHC on social performance was provided. The actions carried out by the employees through the environmental skills they have acquired have resulted in social benefits, such as improved working conditions.

The second research question of the second objective was intended to understand the effect of SSC on the sustainable performance of the organisation. All interviewees considered SSC an important element for achieving good sustainable performance. Several examples illustrated the creation of SSC in the organisation, such as the improvements in the production processes, the investments in software, the well-established environmental management policies, or the existing “pro-environment” culture. These factors positively influenced the environmental dimension of sustainable performance. Furthermore, adopting a Lean methodology provided evidence regarding the influence of SSC on the economic and social dimensions of sustainable performance, namely through an improvement in the product’s quality and the concerns for employees’ health and safety. Thus, it can be concluded that SSC positively influences the company’s sustainable performance in all its dimensions. Yusoff et al. and Yusliza et al. [11,25] suggest that an organisation with efficient systems and procedures, good environmental management policies, and a well-established structure allows a full implementation and achievement of sustainable performance.

The third research question of the second objective was to understand the effect of SRC on the Sustainable Performance of the organisation. SRC was considered an important element for achieving good sustainable performance. Several examples of SRC creation were identified, namely the substantial investment in the organisation’s image. Through the case study, it is possible to conclude that this dimension influences the organisation’s social performance through different means, such as donations of discontinued raw materials (which no longer have any use for the company) to schools and other institutions. These actions also affect the environmental and economic dimensions of sustainable performance.

The organisation complies with the environmental principles of reusing and recycling its materials, and it does not incur costs to destroy such materials. Thus, the importance of SRC in improving sustainable performance should be stressed.

This paper contributes to the development of research on SIC and sustainability and sustainable performance. It allows for interrelating two different but complementary areas of knowledge, thus filling a gap in the literature on intellectual capital. More specifically, it contributes to better comprehension of the relationship between SIC and sustainable performance in an industrial company and their actors’ perceptions of this issue. This study allows managers to understand better the relationship between SIC and sustainable performance from a management-oriented perspective. Hence, this paper may provide such managers with insights to better guide their organisations to make them more economically, environmentally, and socially sustainable and thus more competitive.

This research is not without limitations. The interviewees did not correctly acknowledge the SIC and sustainability concepts, requiring the researcher to briefly introduce these concepts. Furthermore, despite the validity of the interpretations provided in the context of the case study, generalisation for other situations should only be conducted in a theoretically framed manner. As a suggestion for future research, understanding why some organisations implicitly implement and interrelate the concepts focused on this study, despite not fully knowing them, is recommended. In addition, further research should assess how sustainable performance can influence organisations’ SIC. Finally, similar studies in different industrial and non-industrial sectors (such as financial organisations) should be conducted.

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