



Article

# Defining a Social Role for Ports: Managers' Perspectives on Whats and Whys

Eduardo Batalha \*, Shu-Ling Chen, Hilary Pateman and Wei Zhang

Centre for Maritime and Logistics Management, Australian Maritime College, University of Tasmania, Maritime Way, Newnham, TAS 7248, Australia

\* Correspondence: eduardo.batalha@utas.edu.au

Abstract: It is undoubtedly true that ports can modify aspects of the regions where they are inserted in many different ways. Scholars have presented various perspectives on the influence of ports in society, including their roles according to their purpose. Surprisingly, in the age of sustainable development, the social roles of ports have not been explored in depth, and this offers an opportunity to increase the knowledge of this sector. This paper aims to investigate how managers in ports perceive their roles in the social dimension and why they think they should exist, presenting opportunities to align business objectives with the expectations of other stakeholders. Applying the content analysis technique, 28 interviews were conducted with managers in Brazilian ports and themes were developed to represent their views on social roles (5) and the reasons for adopting them (6). Overall, managers perceive social roles as part of the strategic business plan and present reasons to adopt them, ranging from compulsory to voluntary. Conclusions suggest that more needs to be done to expand the understanding of a pragmatic approach to social roles and to develop more focused actions according to the reasons for adopting social roles.

Keywords: ports; social roles; qualitative analysis; thematic analysis



Citation: Batalha, E.; Chen, S.-L.; Pateman, H.; Zhang, W. Defining a Social Role for Ports: Managers' Perspectives on Whats and Whys. Sustainability 2023, 15, 2646. https://doi.org/10.3390/su15032646

Academic Editor: Antonio Comi

Received: 15 November 2022 Revised: 24 January 2023 Accepted: 27 January 2023 Published: 1 February 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

#### 1. Introduction

According to ([1], p. 1) "social roles are a socially defined pattern of behaviour that is expected of persons who occupy a certain social position or belong to a particular social category". From the definition, an individual can have multiple roles in their day-to-day routine (e.g., professional occupation, carer, sports official) and these roles require conforming to social rules, also known as responsibilities (e.g., delivering projects, assisting a member of the family with a disability, ensure a game is played according to the rules of the competition). Therefore, in addition to the multiple possible roles, every role is related to specific responsibilities that need to be accounted for in a specific social context [1].

In a seminal work that reviewed how businesses could evaluate their performance in the social dimension, [2] defined the social role as the aspect that provided legitimacy to the enterprise's participation in the development of society. Suppose the word "persons" is replaced with "organisations" in [1]'s definition; organisations are expected to have a social behaviour based on the social role they need to conform to and their responsibilities for the impacts they create on individuals with their products or services. Following this logic, car producers have a social role in ensuring safe driving conditions with their products, alcoholic beverage producers are expected to alert consumers about the risks related to the abuse of their products, and public organisations must operate transparently and focus on the benefits to ratepayers.

Although the acceptance of organisations' participation in the social dimension has evolved over time, defining a social role for a business is still a challenge for practitioners and scholars. In some specific industries, public attention tends to be higher due to the visible impacts caused by products and services (e.g., dirty energy, deforestation, drug

Sustainability **2023**, 15, 2646 2 of 22

testing). In other cases, the evolving knowledge of society gradually demands more active social participation from organisations. For example, the increasing pressure on technology companies to avoid disseminating fake news and the excessive consumerism appeal to vulnerable individuals [3]. However, in some industries where public awareness is less, or the impacts created only affect a small portion of the population, a social role might not be their priority.

Nevertheless, considering the importance of sustainable practices nowadays, it is necessary to ensure that activities are not carried out at the cost of society's welfare. Even for those industries that do not attract attention in the media, it is vital to understand their social roles and develop corporate actions that align with stakeholders' expectations. From a long-term perspective, considering the changes in social values and the increasing scrutiny of ethical behaviours, defining a social role and understanding what motivates companies to adopt them is gradually becoming paramount. This can offer an opportunity to place an organisation in a position where future development happens in partnership with stakeholders instead of in a problematic environment where the legitimacy of the social role is questioned by society [4].

Ports are one of the industries that create social impacts for stakeholders, demanding a better understanding of their social roles. However, the literature has not yet allocated their social dimension the same importance as ports' economic and environmental dimensions. In a review of the literature, [5] found that the social dimension lacks development if considering publications about ports' sustainability performance. Although scholars have investigated aspects such as the adoption of corporate social responsibility reports [6,7] and the assessment of social impacts created by ports [8–15], overall the discussion of drivers and motivations for the adoption of social roles is missing. In addition, [2] recommended exploring incorporation of the social dimension by using the organisations' perspective to understand the underlying principles leading to their adoption as part of the business.

The investigation based on the perception of industry representatives is particularly important for two reasons. First, it provides an idea about the current comprehension of social roles by leaders in the port industry, which has not been directly explored in the literature. Their view can be compared with the knowledge in the literature and with other industries where the social dimension is better developed. Another important aspect is to consider that the decision-makers influence actions developed by these organisations. Therefore, what they understand their social responsibilities to be can influence how they translate their social roles into real actions.

### 2. Review of the Literature

The interface position between the sea and land gives ports unique business characteristics which can shape their roles in the social dimension [16–18]. For example, geographical factors impact the occupation of land, the natural environment or the region's economic activities, which can consequently affect communities, fishery businesses and other groups living in the region [19,20]. Therefore, as a significant infrastructure asset with the power to shape a region's economic, environmental and social aspects, ports should play a role in planning and supporting social and sustainable development in their region [21,22].

Despite the recognised development of the adoption of sustainable practices for ports over the time, the discussion of the social dimension needs to improve [5]. One of the ways to address this, according to [2], is investigating what moves their representatives to consider the social dimension with more attention through the understanding of their social roles. Traditionally, other dimensions (i.e., economic and environment) tend to have more attention due to their ease of measurement and there are interface areas where the socio-economic and the socio-environmental perspectives can be used to explore how ports can improve society's welfare. For example, ports are considered economic enablers for wealth generation and employment creation [23–26], and were credited with good social performance if the port could provide economic improvement for stakeholders [5]. However, some scholars, such as [27] and [28], have discussed that the validity of using

Sustainability **2023**, 15, 2646 3 of 22

employment or other economic indicators as a proxy for good performance has decreased over time as more operations have become automatised and fewer people benefited from employment options offered by the port. Therefore, if the impact of ports in the social dimension shrinks according to technological changes or any other industry innovation, the core question remains as to what the social role of ports is and why it has to be adopted. Having answered these two points, the organisations can plan the implementation of their plans according to the reality of their businesses and the needs of society.

There are other ways to analyse how ports can have a role in the development of sustainable practices. From an operational perspective, ports can be seen as having a social role in connecting information, trade and people's needs, linking global markets and enabling products and services to reach regions where other transportation models would not be able to do [13,29,30]. In this sense, some scholars argue that if the port functions efficiently, positive social impacts can be perceived by stakeholders [29,31,32], with these benefits spreading far beyond the location of the port [33–36].

Another social role linked to port characteristics is the capacity to create an environment for collaboration and innovation [6,13,37–40], which can contribute, for example, to the technological development of their region. For [41], this operational and economic aspect of ports' performance can provide socio-economic wealth to the region they serve, especially when value is added to services and products along the supply chain connected to them [42]. However, caution is needed when considering social roles from economic and operational perspectives. The authors of [43] (cited by [44], p. 461) suggested that changes in technology and the global trade axis must be taken into account to ensure that the perceived social roles are sustained in the long term.

The literature adds more about the social roles of ports by including a reference to their role in regional development [35,45–50], with ([27], p. 2) providing an example of how ports can "rise the welfare of citizens, enhancing social welfare in terms of income, employment, living environment, security and other aspects (macro-economic or social dimension)". The view of the ports as social developers includes different phases of port development. For example, during the construction phase of ports, jobs are created due to the demand for a workforce, but this can mean high levels of migration, placing pressure on communities in terms of housing, educational or health support infrastructure. These aspects might also continue during the operational phase, or new ones can arise when the ports leave the project phase and start to operate. Therefore, it is part of the social role of ports to ensure that negative impacts (e.g., overpopulation) are avoided for the sake of regional development objectives [51].

It is also a social role of ports to work towards attracting investments, improve the competitiveness of cities around them [36,52], and support social development through the transference of knowledge [53]. Ports also have a social role as leaders, offering specialised knowledge to society through difficult times [54,55], especially when these scenarios create tensions with stakeholders (e.g., natural catastrophes, marine accidents, health emergencies). The example of the actions promoted by the Port of Los Angeles to improve pollution control and prevent environmental issues with impacts on stakeholders' health demonstrates in practice what can be done to improve participation in the social dimension [56] As part of their leadership role, ports should be responsible for developing their managerial expertise to ensure they can handle issues related to the social environment where they are located [9,57].

Some scholars see the port as a guardian of cultural heritage for a region [20,58] and responsible for the care of stakeholders that interact with them [13,59]. This sense of care can be translated into actions, for example, to protect coastal regions [60] or to help prevent unwanted activities such as drugs and weapons smuggling [61,62]. One well-known example is the implementation of the International Ship and Port Security Code (ISPS Code), which focuses on the security of vessels, goods, people and countries [63]. A summary of the social roles of ports defined by scholars in the literature is presented in Table 1.

Sustainability **2023**, 15, 2646 4 of 22

**Table 1.** Social roles of ports in the literature.

Social Role	Description	References
	Care about regional development and the impact created on stakeholders.	[16–20]
	Consider the impact of the sustainability performance approach on the development of the region	[21,22]
Regional developer	Spread benefits of its operational functions beyond the area close to the ports	[33–36]
	Promote a collaborative and innovative environment	[6,13,37–40]
	Transfer knowledge	[53]
	Overall regional development	[35,45–50]
	Mitigate negative social impacts	[51]
	Socio-economic role related to job creation	[5,23–28]
Economic enabler	Create wealth for the region	[41]
	Serve as a connection point for regions around the globe	[13,29,30]
Supply-chain connector	Strive to become an efficient functional organisation	[29,31,32]
	Contribute to different supply chains development	[42]
	Contribute to different supply chains development	[42]
Composato citizanshin	Adopt a leadership position concerning social development	[54–56]
Corporate citizenship	Develop managers to act in the social dimension	[9,56]
	Preserve the cultural heritage	[20,57,58]
	Support the security of the coastal region	[60-63]

Overall, the literature review shows that although scholars have discussed ports' roles from various perspectives, studies that specifically discuss their roles in the social dimension remain scarce. Therefore, the first question this paper aims to answer is

# Q1—What are the social roles of ports?

The roles presented in the literature help guide the examination of the social participation of ports, which is a starting point of this analysis. However, it is also beneficial to understand why organisations think they should have a social role in order to clarify what promotes their participation in society's development. Therefore, the second question this paper aims to answer is

## Q2—Why should ports adopt a social role?

The joint investigation of social roles and reason was suggested by [2] as part of the strategy to support organisations' development of social outcomes and assess their performance in the social dimension. To answer the two research questions proposed, this study explored managers' perspectives as the source of data which complemented previous studies which discussed ports' social roles and the reasons managers consider it important to adopt a social role [64–67].

Sustainability **2023**, 15, 2646 5 of 22

#### 3. Methodology

This qualitative study adopted telephone interviews between October and December 2018 with Brazilian managers in the port industry to investigate the social roles of ports. Brazil was selected as the country of analysis based on the opportunity to explore the potential source of conflict between infrastructure development and society in Brazil. A purposeful sampling strategy was used to recruit port managers due to their relevance as key informants [68] and their influential position with the power to represent the organisation's point of view about the business' social roles [69,70]. The selection of participants was based on the list of ports provided by the National Agency of Waterborne Transportation (ANTAQ) in Brazil, accounting for two-hundred and five (205) enterprises authorised to operate in the country at the time of the interviews. From the total number of ports from each economic region in the list (i.e., N, NE, S, SE), a minimum of 10% was conveniently selected to ensure the view capable of representing the whole country [71,72]. Figure 1 details the number of authorised ports per region, the targeted number of participants and the total number of interviews performed per region. In addition, Table 2 presents the details about the sample managers who were interviewed in the study. Overall, 28 interviews were conducted and considered a sufficient number to ensure the validity of the data for exploratory studies [64,73,74].

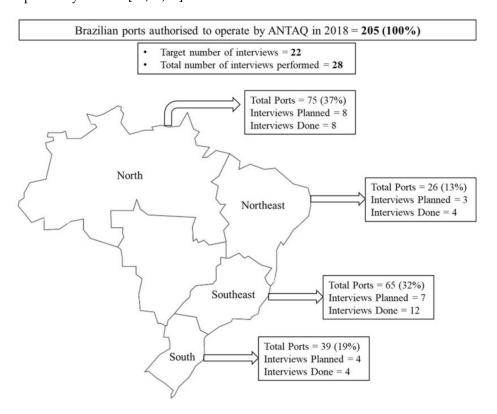


Figure 1. Interviews planned and achieved per region.

The average years of experience in the port industry reported by participants were eleven years, with a standard deviation of six years, where the most experienced manager reported thirty-six years and the least experienced one year in the role. According to [75], it is valuable to have participants with experience and influential positions, as these characteristics make them key informants about the topic under analysis. Moreover, all the participants (100%) reported at least a bachelor's degree in different areas of knowledge, with sixteen (57%) having management specialisation courses in different business schools, ten (36%) with a master's degree, and two (7%) with a PhD degree. According to [76], participants with an academic background tend to share richer insights and offer a deeper view of the topic under exploration.

Sustainability **2023**, 15, 2646 6 of 22

**Table 2.** Description of interviewees' profile.

ID	Region	Gender	Designation	Academic Background /Highest Level	Type of Cargo Handled	Port Ownership Nature	Experience (Years)
Tint_01	S	male	Chief Executive Officer	Merchant Marine Academy/MBA	Container, grains	Private	19
Tint_02	SE	male	Social Communication Coordinator	Business Administration/Master's degree	General cargo	Public	7
Tint_03	S	male	HSE and Sustainability Corporate Manager	Mechanical Engineer/Business specialisation	Container, general cargo	Private	11
Tint_04	S	male	Safety Health Environment Manager	Environmental and Sanitary Engineer/Business specialisation	General cargo/container/bulk	Public	6
Tint_05	S	male	Institutional and Environmental Management	Business Administration/Master's degree	General cargo/container/bulk	Private	17
Tint_06	SE	male	Institutional Relations Manager	Business Administration/Business specialisation	Solid bulk	Private	11
Tint_07	SE	female	Social Responsibility and Licensing Manager	Chemical Engineer/Master's degree	Solid bulk	Private	10
Tint_08	NE	female	Chief Compliance Officer	Degree in Education/PhD	General cargo/container/bulk	Public	4
Tint_09	N	male	Safety Health Environment Manager	Forest Engineer/Master's degree	Solid bulk	Private	23
Tint_10	NE	male	Port Executive Manager	Metallurgical Engineering/MBA	Solid bulk	Private	19
Tint_11	SE	male	Sustainability and Legal Director	Law degree/Business specialisation	General cargo/bulk/support	Private	1
Tint_12	SE	male	Corporate Communications Coordinator	Degree in Journalism/MBA	Container, general cargo	Private	6
Tint_13	SE	female	Port Superintendent Director	Business Administration/MBA	Solid bulk	Private	14
Tint_14	SE	male	Human Rights Manager	Economy Degree/Masters	Solid bulk	Private	9
Tint_15	SE	male	Social responsibility and Institutional Relations Manager	Degree in Law/MBE	General cargo/bulk/support	Private	5
Tint_16	SE	male	Health and Safety, Environmental and Quality Manager	Degree in Oceanography/Master's degree	Liquid bulk	Private	10
Tint_17	N	male	Operations General Manager (Port)	Metallurgical Engineering/Business specialisation	Solid bulk	Private	1
Tint_18	SE	male	Port Operations Manager	Industrial Engineer/MBA	Solid bulk, liquid bulk	Private	12
Tint_19	SE	male	CEO and COO	Metallurgical Engineering/Master's degree	Solid bulk	Private	12
Tint_20	N	male	Sustainability and Institutional Relations Manager	Business Administration/MBA	Solid bulk	Private	36
Tint_21	N	male	Sustainability Manager	Business Administration/Business specialisation	Solid bulk	Private	3
Tint_22	N	female	Communication and Community Relations Coordinator	Business Administration/MBA	Solid bulk	Private	5
Tint_23	N	male	Sustainability Manager	Civil Engineering Degree/PhD	Solid bulk	Private	8
Tint_24	SE	male	Port Operations Manager	Mechanical Engineer/Business specialisation	Solid bulk	Private	30
Tint_25	N	male	Port general Manager	Business Administration/Master's degree	Liquid bulk	Private	5
Tint_26	N	male	Logistics General Manager	Mechanical Engineer/MBA	Solid bulk	Private	10
Tint_27	NE	female	Social Responsibility Analyst	Degree in Social Service/MBA	Energy production	Private	6
Tint_28	NE	male	Environment and Safety General Manager	Environmental Control Technology/Business specialisation	Solid bulk	Private	11

Sustainability **2023**, 15, 2646 7 of 22

During interviews, participants were presented with a semi-structured interview script with open-ended questions and requested to answer what would be, in their point of view, the social role of a port and the reasons to adopt a social role from an organisation's perspective [77,78]. The interviews were recorded, transcribed using the VERBATIM format, and participants' approval was sought to ensure data validity and confidentiality [79].

NVivo 12 was used in the data analysis, ensuring audit trail, consistency and traceability [80,81]. An initial data reduction was performed in the conventional content analysis (CCA) to label the answers under codes representing the conceptual ideas embedded in participants' answers [82]. The authors reviewed the initial codes thoroughly and discussed the terms presented to ensure a consensus was achieved [83–86]. At the end of the qualitative analysis, similar codes were grouped to form themes representing the answer to the research questions presented to participants during the interviews [87,88]. After merging the codes, the authors discussed the themes to ensure a consensus about what they represented was reached [79,89].

#### 4. Analysis Results

The content analysis findings grounded on the interview data are presented in sequence.

## 4.1. The Social Role of Ports

This section presents the content analysis results to the question of what ports' social role (Q1) is.

Five themes were created from the answers to the question, 'What is the social role of ports?' (Table 3). The labels provided to the themes and the number of participants referring to them, respectively, were 'Develop the regional social environment' (N = 9), 'Adapt port processes to achieve social objectives' (N = 8), 'Improve the economic status of the region' (N = 4), 'Act as a leader in the social dimension' (N = 3) and 'Maximise port economic capabilities to provide social betterment' (N = 3).

**Table 3.** The social roles of ports.

ID	Theme Description	Coding	Participants' References (N)
SR.1	Develop the regional social environment	To leverage the regional development To support the development of the region To leverage the regional development To connect with its region to generate value To act as the vector of regional development To develop the strong points of the region To contribute to the social development To take care of the region where the port is To create shared value	9
SR.2	Adapt ports' processes to achieve social objectives	To have experts in the social area To operate in a sustainable way To match investments with the real demand in the social area To grow sustainably To act proactively in managing external and internal stakeholders To act with respect and proactivity To understands the impacts caused by its operations To respond to demands arising from its operations	8
SR.3	Improve the economic status of the region	To generate income and wealth To generate income for those involved in the port activity To create indirect jobs To generate wealth for the region where it is installed	4
SR.4	Act as a leader in the social dimension	To act as a society leader To connect companies and actions in the social area To lead by example	3
SR.5	Maximise port's economic capabilities to provide social betterment	To act as an efficient and safe supply chain link To act as an efficient hub in the region where it operates To generate benefits for stakeholders based on cargo flow efficiency	3

Sustainability **2023**, 15, 2646 8 of 22

## 4.1.1. Port as a Regional Developer of the Social Environment

Codes in the theme 'develop the regional social environment' included references made to ports' role in promoting regional development leverage (N = 2), supporting the regional development (N = 3), creating value by connecting important stakeholders to the region (N = 2), developing a social environment by using the strong capabilities of the region (N = 1) and practising duty of care towards stakeholders in their regions (N = 1).

Participants expressed their view of the port as an important actor in supporting the actions linked to its activities concerning regional development leverage. Interviewee\_09 was more generic when they stated that "the role of the port is to help to leverage the development of the region". At the same time, Interviewee\_05 was more specific, stating that "the role of the port is to leverage the region by improving its supply chain with reflection in the whole regional productive chain".

To become part of regional development, Interviewee\_11 stated that

"ports must be connected to the region where they are, and they must become part of the social context of the region, allowing their existence to create value for the social environment where they are inserted."

The regional development perspective should place the port as part of the community "taking care of the social aspects of the region where it is installed and helping the local communities" (Interviewee\_21) and to "create shared value to all the stakeholders connected with the business" (Interviewee\_23). However, an interesting statement below was provided by Interviewee\_08 about how the social development role is sometimes misunderstood.

"Often, the regional development role is miscomprehended with the role of the public entities that should be in charge of the welfare of the city inhabitants. The port tries to offer help and becomes solely responsible for matters such as school education or health assistance. Therefore, a clear separation of the social role of the port does not create a dependency that the business later cannot sustain. In this case, once resources become scarce, it becomes the port's responsibility if people do not have schools or health services available. "

#### 4.1.2. Adapting Ports' Processes to Achieve Social Objectives

For the theme 'Adapt ports' processes to achieve social objectives', codes referred to having experts in the social dimension inside their organisation (N=1); defining principles linked to how to operate sustainably (N=2); matching port financial investment plan with the social demands of their region (N=1); maintaining a sustainable relationship with their internal and external stakeholders (N=1); acting with respect and proactivity (N=1); and, understanding and responding to the social impacts caused by their operations (N=2).

As stated by Interviewee\_06, the social role of adapting ports' processes to achieve social objectives is represented by the fact that

"managers (of ports) need to be absolutely aware of the transformations they are creating in the surroundings, and they need to respect those who live in the area and adapt the port processes to do what is expected by stakeholders."

Similarly, Interviewee\_12 stated that

"the port needs to grow, become productive and respect the stakeholders and the natural environment where they are located. This transformational mentality has to come from the highest levels of the organisation and be cascaded to the lower levels."

The adaptation was necessary by "adjusting the port sustainability discourse to the level of investment in the social dimension, avoiding promoting superficial actions only used to improve the corporate image'" (Interviewee\_10). This adjustment was possible by "hiring managers and employees with a comprehensive view of the port social role to implement real actions to benefit stakeholders" (Interviewee\_01). However, the port should

Sustainability **2023**, 15, 2646 9 of 22

not wait for the need to adjust its processes and had to be proactive in considering the internal and external stakeholders, in the view of Interviewee\_15. This idea was supported by Interviewee\_19, who stated that

"the port or any other organisation must understand the impact that it causes on the surrounding society. These can be economic, environmental, or anything disturbing the region's social balance. This is the biggest role that the port has in the social dimension. Once these impacts are known, the port can adapt its actions to cope with the stakeholders' demands."

## 4.1.3. The Improvement of the Economic Status of the Region

The improvement of a region's economic status was a port's social role identified based on statements such as "the main role of the port is to create income by improving its economic activity and employing people in the surroundings" (Interviewee\_25) or the idea of economic development generating income and wealth (N = 2), and the creation of jobs related to the operation of the port (N = 1).

The economic impact as a social role becomes even more important for stakeholders in remote regions because, as indicated by interviewee\_27, these areas are remote and usually need basic assistance from the public authorities. Therefore, by simply having the port activity in the region, direct and indirect jobs can be created that somehow allow people to improve their socio-economic condition.

## 4.1.4. The Leadership Role

Interviewees considered the leadership role in the social dimension as ports acting as a leader in society (N=2); and as an orchestrator of actions in the social dimension, also with regards to other companies in the region (N=1). Interviewee\_07 stated that the leadership role was relevant because he "perceived that the port needs to be a leader in society. There is no space anymore to manage without taking what is expected by society into consideration." As Interviewee\_27 pointed out:

"The port is part of the production chain that includes many other industries. Especially in the case where the port is a cluster of different enterprises, I see the social role of the port as a leader to promote solutions for the common problems that affect the stakeholders around it. "

With a stronger statement, Inteviewee\_28 summarised the leadership role by stating that "the social role of the port is a leadership role. Leadership by example.'

### 4.1.5. Maximise the Port's Economic Capabilities to Provide Social Betterment

Three (N = 3) participants considered that the social role of the port was to maximise its core functions as the means of providing social betterment for the region, as the port being able to explore its capabilities as an efficient link in the supply chain (N = 2) and improve the cargo flow (N = 1). In the view of participants, this social role is different from improving a region's economic situation because it focuses on the use of the function of the port to promote social betterment. While economic activity can be improved by other players involved in port activity, maximising the function of ports is related to the organisation's internal management. The port is a link in the supply chain, and the port's optimisation as an asset should be considered. If this link does not work correctly, it is impossible to meet society's demands (Interviewee\_02). Complementarily, Interviewee\_10 stated that the social role of the port is to establish a cargo flow, generating benefits for stakeholders. The following statement from Interviewee\_03 comprehensively explains this role.

"Considering the function of the port to concentrate cargo, the high traffic of vessels and vehicles created by its activities can affect the stakeholders negatively. Therefore, it is necessary to optimise the way the port operates to ensure that no risks are created for the community in terms of the safety of people

Sustainability **2023**, 15, 2646 10 of 22

and the protection of the natural environment. So the level of services has to match the requirements that balance the economic, environmental and social benefits created. "

# 4.2. Reasons for Adopting a Social Role

Although investigating the social roles from the managers' perspectives is important, understanding why they adopt their social roles is also necessary. Analysing what managers think to be their social roles in combination with the reasons they should adopt them offers the opportunity to investigate what motivates them to adopt specific actions in the social dimension. This section presents why ports should adopt a social role (Q2) based on the content analysis of participants. According to Table 4, participants considered that ports should adopt their social roles as part of their businesses because they have natural social accountability (N = 22); can foster stakeholders' support (N = 6); should take into consideration of strategic port development (N = 5); prevent problems from escalating (4); comply with laws and regulations (N = 2); and need to offer a return for the exploitation of natural resources (N = 2).

**Table 4.** Reasons for adopting a social role.

ID	Theme	Coding	Participants Reference (N)
M.1	Social accountability	Because it is not acceptable to refuse social participation Because ports are part of people's lives Because ports have great strategic importance and influence power Because ports impact societies, change their behaviour and must minimise impacts Because the port is essential in the supply chain development Because this should be part of the natural behaviour of the company	22
M.2	Stakeholders' support	Because it is necessary to have society on your side in difficult moments Because the port needs the social license	6
M.3	Strategic development	Because it improves the port image and reputation Because it promotes higher engagement from employees Because this is necessary for survival Because there is a trend for more demand for social performance	5
M.4	Prevention of problems escalation	Because external factors can become a problem Because society complaints can turn into more significant problems Because there is a risk that social problems escalate to something bigger	4
M.5	Compliance with laws and regulations	Because there is law enforcement in place	2
M.6	Return for the exploitation of resources	Because the company needs to return to society the profit from the exploration of natural resources Because the wealth must be shared	2

## 4.2.1. The Social Accountability of the Port

All participants considered the acceptance of natural social accountability was the reason for ports to adopt a social role. However, the perspective of social accountability differed among participants. Nine participants thought that the ports are socially accountable because they need to be responsible for mitigating the negative impacts they create in their region. As stated by Interviewee\_02

"It is inevitable. Every enterprise, considering its size, creates impacts that affect the stakeholders around it. These impacts can occur differently and modify how people around the port leave. Fixing this disturbance becomes, therefore, part of the port's responsibility."

Six interviewees suggested that social accountability should be a given part of the natural behaviour of ports. Three interviewees thought that ports had to acknowledge Sustainability **2023**, 15, 2646 11 of 22

their accountability because they are strategically important and influential businesses with the power to shape the social dimension of the region where they are located. Two interviewees saw social accountability emerging from the idea that ports are part of people's lives. At the same time, one referred to the social importance of ports in developing supply chain operations. Another interviewee understood ports as simply being unable to avoid participating in the social development of their local region. As stated by Interviewee\_22, "firstly I think the port should be committed (to social responsibilities) and from this ensure that activities (to manage the social dimension) are done correctly, respecting the social environment".

A similar view was provided by Interviewee\_16, who stated that

"Impacts created by the port are significant, and they refer to the land use, impact on the region's economic activities, and impact on stakeholders' quality of life. The port transforms the region where it is installed, and this transformation can echo far away to the regions connected by the port activity. Therefore, the port is accountable for ensuring that these changes can mutually benefit all those linked to its activities."

## 4.2.2. The Need for Stakeholders' Support

The theme of stakeholders' support was another reason for ports to adopt social roles. It was developed based on codes representing ports' need for society's support when facing a difficult moment and for the so-called 'license to operate' granted through stakeholders' acceptance of the port operating in the region. According to Interviewee\_05,

"we must have the overall stakeholders, internal and external, supporting the organisation. It must be avoided that they have a negative opinion about the business. Otherwise, the organisation can be affected during licensing processes and, for example, face barriers with plans to expand the port activities in the region'."

Regarding the social license to operate, Interviewee\_09 indicated that the social license to operate had become a matter of survival. Stakeholders' support is the key to the license to operate. As he stated:

"In the past, the social dimension was considered a *pro-forma* aspect of the business, oriented to compliance with laws and regulations. Today, the support of stakeholders helps with the legal licenses to operate but also ensures that the port can exist with the consent of those affected by its activities. "

## 4.2.3. Strategic Development

The theme of strategic development representing a factor leading to the adoption of social roles was developed based on interviewees' understanding of ports' challenges and the need to play a social role in overcoming these challenges. The codes supporting this theme include the need to overcome new challenges in the business environment (N=2), the increasing pressure for more demands related to social performance (N=1), the need to prepare the organisation for promoting employees' higher engagement (N=1), and the benefits that could be achieved by improving a port's reputation (N=1). Interviewee\_11 stated that it is vital to consider the social role of the port strategically, because

"looking at what happened in the last years, the adoption of the social roles shifted from a *pro-forma* approach to a survival need. The former model in which we needed to comply with regulations is in the past. Nowadays, we can only survive in the long run if stakeholders issue the enterprise's social license to operate."

## 4.2.4. Prevention of Problems Escalation

The theme of prevention of problems escalation was built on concerns expressed by participants that external issues easily manageable but ignored by a port can quickly turn into big problems and on the belief that "society's complaints can become a significant barrier to port operations and development" (Interviewee\_14).

Sustainability **2023**, 15, 2646 12 of 22

A wider view of how issues can escalate was provided by Interviewee\_23, who stated

"If you do not have the social dimension of business managed initially, the port operations will be impacted and suffer the consequences in a later stage. It can occur in the form of interruptions to the operations caused by public demonstrations that block access to the port, legal interruptions imposed by local authorities or even the reduction in investments caused by the negative image of the business. Overall, no problem or issue should be ignored; otherwise, the risk of becoming unmanageable is too high."

## 4.2.5. Compliance with Laws and Regulations

Compliance was mentioned as a factor influencing the adoption of social roles, based on the idea that ports must follow the existing laws and regulations (2), as the legal aspect cannot be simply ignored. According to Interviewee\_04, in the Brazilian context, "unfortunately the adoption of social roles usually occurs only when authorities impose legal requirements (e.g., licenses)".

#### 4.2.6. Return for the Exploitation of Resources

Two interviewees referred to the need for adopting a social role is to offer a return to society from exploiting the natural resources in the region. Interviewee\_27 emphasised the need to adopt a social role as a matter to promote a society development linked to economic equality and Interviewee\_25 exemplified how this can occur as follows.

"the company uses natural resources that belong to the state, in other words, to society, and transforms that into profit to a certain group of stakeholders. This is unacceptable unless the benefits are shared with the overall people affected by the port activity."

#### 5. Discussion of Findings

Once the thematic analysis finished, clusters of themes were created to support key ideas emerging from the data analysis. The clustering of themes is not considered a further reduction in the thematic analysis in this case, as the themes defined previously have specific elements characterising them individually. Instead, the clustering was used to indicate how the perceptions of Brazilian port managers convey the status of the comprehension around social roles and the reasons to adopt them. Finally, the themes of social roles and reasons to adopt social roles were included in the discussion.

#### 5.1. The Social Accountability of Ports

The themes emerging from the initial analyses suggest that managers perceive the port as an entity accountable for the social development of the region where they are. Three themes were clustered to support the idea of social accountability, including developing the regional social environment (SR.1), improving the economic status of the region (SR.3) and acting as a leader in the social dimension (SR.4). Altogether, the ideas behind these themes indicate that managers perceive ports' social role as part of their core duties, not an ad-hoc activity or a by-product of their existence. Although the term social development was defined by managers using different perspectives (e.g., economic development, welfare of stakeholders), participants understood ports as assertive actors in the social dimension that must work towards improving the region where they are and not passive players who only follow directives or react when something happens. Scholars such as [90,91] discussed how ports in different parts of the world (e.g., Europe and Asia) already adopt sustainability principles as part of their corporate planning, looking after the involvement of stakeholders. From a more social-oriented perspective, there is still a gap to be filled [5]. Still, the sense of accountability presented by Brazilian port representatives is a mindset that can be noticed elsewhere.

The accountability from a social development perspective aligns with references from the previous literature to sustainability initiatives created by ports. Scholars have already Sustainability **2023**, 15, 2646 13 of 22

presented how regional development inducted by ports occurs, using, for example, the improvement of the local infrastructure as one of the benefits created for a region [46–48,52,92]. In line with SR.3, another social benefit created by ports is the creation of wealth and economic development with local residents employed by organisations or emerging business opportunities that can be created [93–95]. In these examples, it is undeniable that the port directly or indirectly inducts social development and it is positive to see decision makers in ports emphasising these as their roles.

However, the reference to social accountability also leaves open questions about to which extent this development benefits a broader range of stakeholders (e.g., community members or the broader society) in the same way it benefits the organisation and its representatives. The author of [96] defined social development as "a process of planned social change designed to promote the well-being of the population as a whole within the context of a dynamic multifaced development process". The United Nations Development Program (UNDP) refined the concept of social development as human development by

"expanding the richness of human life rather than simply the richness of the economy in human beings live. It is an approach that is focused on people and their opportunities and choices [97]."

The statements provided by participants referred to the improvement of road accesses, the attraction of investments or the creation of jobs as some of the benefits inducted by the port, demonstrating an economic or materialistic view of social development. The analysis of the elements presented in the data suggests that managers' understanding of ports' social accountability as a developer of the social environment, although important, is limited and should be more inclined towards the definitions provided above. To make social accountability more comprehensive, managers' views around social development should include, for example, reducing poverty, supporting school attendance, promoting gender equality and others [96].

When the view of social development is expanded and includes more than economic or infrastructure development, ports' social accountability gains more legitimacy, especially if the leadership role (SR.4) is put into practice. However, caution is necessary to ensure that ports take care of the initiatives within the organisation's reach without assuming duties that belong, for example, to the government. As stated by participants in this study, becoming a reference in the broader view of social development, leading by example and using knowledge to benefit society are some skills and knowledge that ports can possess, and their representatives should use them to become more socially social embedded. The authors of [98] emphasised the importance of improving corporate knowledge by developing leaders focusing on the strategic approach to social development and supporting stakeholders to understand more about what organisations do in the sustainability realm. In the case of Brazilian ports, the main challenge is to ensure that leaders can absorb the knowledge related to the social dimension and adopt it as part of the organisation's core activities.

The multi-stakeholder view should also be promoted as part of accountability in the social dimension. For example, when discussing the theme of social development, managers often referred to their responsibilities by looking at the external stakeholders (e.g., community members). In addition, their comments emphasised the difficulty of engaging with these groups and the resources necessary to execute the social development actions focused on those outside the organisation. Interestingly, the reference to internal stakeholders, who can also be part of the community, did not reach the same level of importance as the external stakeholders. For example, it is common in Brazil that large organisations offer benefits to their employees, including private health insurance, education support, meals offered in the company, bonus salary and others that are not thought of, or at least not mentioned, in the managers' perspective to be initiatives that affect the region's social development. Therefore, leaders need to improve their understanding of social development and ensure their organisations are aware of their positive impact, working harder to improve their practices as part of the organisation's culture. This does not eliminate the

Sustainability **2023**, 15, 2646 14 of 22

need to care about external stakeholders and invest in initiatives that benefit them. Instead, the internal and external views complement each other and provide a platform to support the sense of accountability that ports consider in the region's social development.

# 5.2. The Capacity to Use the Best of the Port's Skills in the Social Dimension

Participants also referred to social roles the organisation need to adapt to provide social benefits as part of their core activities (SR.2) and maximise the port's economic capabilities to provide social betterment (SR.5). The reference to adapt the port in the results is something referred in the literature as a pathway to lead the ports to the necessary changes in sustainability management, investing more emphasis on the social dimension of businesses [5,99]. As referred by Interviewee\_16,

"Ports can hire professionals that can offer a different understanding of the social dimension. These professionals can bring new ideas on board and educate the organisation about what needs to be done in the social dimension. The biggest challenge in this sense is to ensure that funds and resources are secured to guarantee that this can become a sustained action carried out by the organisation. "

The need to adapt and educate the organisation corroborates the previous discussion on expanding the ports' functions beyond their economic dimension and converging the external and internal focus to develop their actions. The authors of [100] reinforced the need to transform the organisation's mindset as part of the current port business environment, including, for example, the social dimension in the analysis of the overall performance in the sustainability approach. In this case, the label of 'good performer' must comprehend aspects of the social dimension (e.g., gender equality in the workforce, employees supported by enterprise agreements), with periodic assessments that can indicate how the organisation is performing if compared to players inside and outside of the port industry. Therefore, capacitating employees at all levels to understand the importance of social indicators and how to assess them is crucial to achieving the expected sustainable results by using the know-how and skills available in the organisation. The authors of [101] propose an approach where the port should also consider capturing this knowledge while selecting their managers, using these in a later stage these employees to propagate their sustainability skills inside the organisation.

Learning in the sustainability dimension can lead the port, in this case, to the ability to maximise its economic capabilities to provide social betterment (SR.5). When participants refer to providing social betterment as part of the port's social role, their thoughts echo in the literature with scholars such as [102]. The latter demonstrated that community participation in the overall planning could help organisations maximise their contribution in the social dimension and improve the positive perception of stakeholders about how the port impacts those around it. With the understanding of the reach of the social betterment that can be achieved, managers can, for example, direct the use of funding reserved for social actions and work towards increasing the organisation's awareness about the stakeholders' expectations regarding the use of port resources to improve the social environment. Knowing what is expected can help managers to understand where their knowledge can be used to reinforce their social role in the region, offering efficiency and positive perception as a return for the resources invested [103].

# 5.3. The Strategic Reasoning for Adopting Social Roles

Considering the reasoning behind the adoption of social roles, the stakeholders' support (M.2), the strategic development (M.3) and the prevention of problems escalation (M.4) illustrate how the strategic thinking related to the adoption of social roles is already part of managers mindset in Brazilian ports.

In the words of Interviewee\_05,

"The question now is not if ports will need to look at the social dimension of businesses but how they will lead the initiative and put together financial and Sustainability **2023**, 15, 2646 15 of 22

human resources to manage the social impacts created. From a strategic point of view, the proactive approach can prevent authorities and other stakeholders from overreacting if an issue affects them. In other words, it is better to build strategic alliances in advance than wait and see what can happen."

From a strategic perspective, scholars such as [104] have shown how the support of stakeholders becomes an important asset for any organisation looking forward to establishing a long-term relationship where future developments have support instead of facing community reaction. Although the strategic view around social roles is becoming more often discussed by scholars in the port area, the topic is not a novelty in the overall business literature. One of the points mentioned by interviewees is the difficulty sometimes in defining specific goals, which can turn the strategic view of the social roles into something tangible for stakeholders' understanding. [105] suggested incorporating sustainability principles (i.e., sustainable development goals—SDG) as a solution to ground more sustainable objectives, which include the social dimension, so that strategy and goals can be understood. Another advantage of using elements of the SDG is the opportunity to compare initiatives on a global scale as an international organisation proposes them. The data collected in this study confirm that the strategic view is present but does not suggest how this is implemented and what challenges exist to make them effective in ports routine. Although managers understand that strategically it is important to have social participation and accept their roles in the social dimension, as discussed previously, they do not have clarity about what they currently do or what could be further developed to improve stakeholders' support in preparation for difficult situations.

An additional point refers to an idea from [106], who urged leaders in ports to consider the long-term view as part of their strategic approach to sustainability and social roles. The lack of a long-term view was pointed out by participants in the study as a barrier to success with regard to their adoption of social roles as results take a long time to be perceived or even measured by the organisation. The long-term view is essential to show that the organisation legitimately adopts the social roles and considers them a long-term strategy that requires timely engagement and consultation with stakeholders to ensure the outcomes are positive for both sides.

## 5.4. The Moral Responsibility Motivation

Reasons related to social accountability (M.1) and return for the exploitation of resources (M.6) suggest managers' view towards moral reasoning, especially as it relates to returning to society some of the benefits obtained by ports due to the use of resources available in the region. The author of [107] compares this moral or voluntary adoption as an outcome of the social pressure channelled towards positive outcomes for society and stakeholders. However, for businesses such as ports, ensuring that moral responsibility is embedded in the organisations' culture remains a challenge [102]. One of the examples where the level of organisational adoption of social objectives can be assessed is in whether or not there is an adoption of a vision, mission and values statement where the social role is present and used to guide policies and procedures [5].

The author of [108] sets a parallel between moral motivation with aspects related to corporate citizenship, ethical businesses and corporate governance. The scholar corroborates the idea that this motivation should arise from the organisation's desire to contribute to social development and make this part of its nature and not as something done for the sake of attending regulatory requirements or, worst case, used as greenwashing.

Overall, moral motivation needs additional exploration in the port literature to unveil how businesses incorporate the voluntary adoption of social roles as part of their moral obligations. Although scholars have depicted its importance and how it improves the relationship with stakeholders, a deeper investigation into how ports incorporate their social roles as part of their values could help confirm if the assertions of Brazilian and worldwide managers are really true.

Sustainability **2023**, 15, 2646 16 of 22

### 5.5. The Compulsory Reasons to Adopt a Social Role

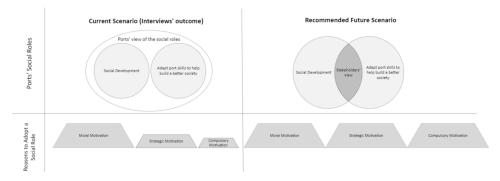
Last, but not least, the non-voluntary adoption of social roles (M.5) was also presented by participants. Similar to environmental performance, there is an embedded perception that regulatory power tends to drive social role adoption. The authors of [109] have discussed how difficult it has been for Brazilian companies to adopt a concrete and long-last framework of sustainable objectives. Examples of challenges include broadening the view of sustainability (i.e., the inclusion of the social dimension) and the continuity of actions in the long-term horizon.

The challenges presented by [109] align with the findings of [5] and suggest that even in the regulatory space, there is a lot that needs to be done to start creating a framework that supports, at least at the bare minimum, the social dimension as part of ports' performance. It is interesting to notice that participants in this study have a very generous and positive view about why their organisations need to adopt social roles, leaving regulatory aspects with few references. However, at this stage, it is impossible to confirm which of these reasons would have priority if managers were asked to rank in importance in their agendas.

## 5.6. Current and Future Scenarios Analysis

Overall, the view of social roles and the reasons supporting them show that managers in ports reflect the thoughts of [2] and [110]. These articles emphasised the positiveness of having the institutional (i.e., at a business level) and organisational (i.e., in the port area level) social roles included as part of their social performance evaluation, enabling the fulfilment of the three dimensions of sustainability practices development. Undoubtedly, this can only be possible after the acceptance of the social roles as part of the organisational culture, which can enable the adoption of positive behaviours of stakeholders with the port. The qualitative outcomes deriving from participants' data in this study suggest that in the Brazilian context, accountability for social development and adapting port skills to perform in the social dimension are the main roles that ports should have. Although inconclusive, the evidence presented in the discussion session indicates this is the predominant view of the sample of leaders participating in the interviews.

As part of the contributions of this study, two elements must be considered. Following the ideas presented by [107], in the Brazilian context, there is a need to consider the inclusion of stakeholders in developing actions that align with what the port thinks is important and what society expects in terms of social development and the use of the port know-how in the social dimension. The social role legitimacy referred to by [5] can only be achieved if the actions developed within the scope of the social roles meet the requirements or demands of stakeholders in contact with the port. Figure 2 represents the inclusion of stakeholders as an intersection point between social development and port skill adaptation.



**Figure 2.** Current scenario and future recommendation for the adoption of social roles in Brazilian ports.

The second point of concern relates to the understanding of social development. It needs to be expanded beyond the economic view, as this was commonly referred to by participants in this study as their main social role. Studies such as [35] have shown that

Sustainability **2023**, 15, 2646 17 of 22

even in areas where economic participation is not the biggest role of the port, they can still be of huge importance in the social context by, for example, allowing the connection of remote regions with the rest of the world. The broader view of social development needs to be considered by managers. If so, it can add more value to what the port can do, looking beyond the usual idea of social improvement being represented by economic growth. The broader view is also important because, as presented by [57], ports can contribute more to the social development of the regions than merely relying on economic factors for social embedment. The point made by [57] reflects the current trend in Brazil, where more automation is used (e.g., automated container gates use), fewer people are employed and the migration of a specialised workforce leaves few opportunities for local stakeholders. Understanding social development as defined by [96] and listening to stakeholders must be addressed as part of port leaders' current and future generations' professional development.

Finally, for the reasoning behind supporting the adoption of social roles (i.e., why they should be adopted), the recommendation is to ensure that equal treatment is given to the strategic, moral and compulsory motivations. Although these reasons provided by participants are still relevant since the time they were discussed by [2], data suggest that some have more priority over others. In a context of continuous exposure and access to information, it becomes difficult to hide from stakeholders what drives the social participation of the port. Depending on which type of actions the companies are involved with, it can become questionable as to whether the heavily emphasised moral obligations have equal importance when compared with actions deriving from other reasons (e.g., compulsory or strategic). The equalisation of importance between the three must exist to ensure legitimate participation in social development. Although easy to say, the equality between moral, compulsory and strategic reasons can be considered the most important outcome of the ports' power to transform their surroundings. In Figure 2, the abovementioned ideas are represented as the suggested scenario based on the findings from this study and the recommended future scenario where the moral, strategic and compulsory reasons support the development of actions of ports with regard to the social dimension.

#### 6. Conclusions and Further Research

The literature describes different roles of ports, and undeniably, these infrastructure assets have importance in shaping the physical and social landscape of the regions where they are located. However, roles purely focused on sustainability's social dimension seem challenging to define. In addition to the difficulty in observing the social roles' concrete outcomes for the region, it is also questionable as to how the benefits are shared equally between stakeholders and the companies.

One of this paper's most important objectives in revealing the ports' social roles is to provide the organisations' leadership with insights about how they can perform better in the social dimension of sustainability. The views offered by managers provide an understanding of what they think to be important and why, from their point of view, social roles should be adopted. However, their view needs to be aligned with other stakeholders' points of view, which can also reveal how aligned the motivations to adopt social roles are. This has practical impacts on the actions developed by organisations as they can become more effective in their actions and with their resources invested in something that can provide a win-win relationship. If, from one side, stakeholders can benefit from this effectiveness, ports will also have a better environment to thrive as they, in theory, will face a more supportive environment to develop their business plans.

From a manager's perspective, the paper presented how decision-making individuals perceive the different social roles of ports. With increasing emphasis, they highlight the ports as inductors of social development and the need to adapt the operations to a world where the management of the social dimension cannot be relegated to a secondary layer of importance. However, it is questionable as to whether the adoption of social roles occurs as part of a core principle of the organisation, as often the answers provided were inclined to relate to the economic benefits of ports. Although the study's outcomes disclosed that

Sustainability **2023**, 15, 2646 18 of 22

managers see the importance of accepting the leadership role in the social dimension, little was explored or revealed about the actions promoted by their organisations in the social dimension. One innovative outcome based on the intent of adopting the social roles versus the reality of the actions promoted is the opportunity to develop the strategic view of the port, regarding the social dimension with the same level of importance as the economic and environmental dimensions. This can be done, for example, during the creation of the vision, mission and values statements, which will later be cascaded to the more tactical level of the organisation (e.g., leadership development training and internal campaigns).

One interesting point is the conflict between the perceived moral obligation to adopt social roles and the non-voluntary adoption of social roles. Although managers perceive the social roles as a moral commitment to be adopted, they also suggested that what has been adopted so far is partially related to the need to comply with regulations in place (e.g., licensing mitigation actions). The conflict between moral obligation and voluntary adoption highlights how legitimate the adoption of social roles might be or when it is used simply as a greenwashing tool. One of the actions that can be created to fill this gap is the development of audits or assessment processes that look at indicators in the social dimension in line with what is expected in terms of social roles for ports. The definition of indicators and the assessment must include the view of other stakeholders and, when possible, be conducted by a neutral part to show how ports carry out their social responsibilities in line with their social roles.

The paper leaves space for exploring other aspects related to the social roles of ports. Further understanding of the meaning of social development needs to be explored to confirm to what extent different aspects from the economic ones are also considered part of the port's accountabilities. As the social development concept is fluid and overreaching, more needs to be explored about which perspectives are included in it from a multi stakeholders' point of view. The outcomes of this analysis can be used for developing internal training strategies in the port industry or, from a wider approach, gain more importance in the curriculum of the academic courses that are the basis of professionals' career development.

Also, additional research must be conducted with external stakeholders (e.g., community members, regulatory bodies and non-government organisations) to present the social roles they perceive for ports and how the distinct views can be used to achieve common goals. Including different stakeholders' views is necessary because it will provide diverse perspectives and identify where there is alignment or where there is a gap that has to be filled by ports with regard to the social dimension. Although traditional methods can be used to explore the point of view of external stakeholders (e.g., public hearings, focus groups), the availability of internet tools can also help assess how the organisation is seen by its counterparts. Examples of these tools can include electronic surveys or social-media content analysis.

Last but not least, the reasons for adopting a social role could be tested using quantitative scales to analyse how managers rank them in importance when they can respond anonymously. The anonymous quantitative analysis could reveal how altruistic managers can be while talking about themselves and their organisations regarding the social roles compared to the anonymous disclosure of the importance of each role. This specific analysis, compared with the findings of this study, could highlight what is really behind the reasoning for adopting a social role using statistical tools to support the results.

**Author Contributions:** Conceptualization, E.B., S.-L.C. and H.P.; data curation, E.B.; formal analysis, E.B., S.-L.C. and W.Z.; funding acquisition, S.-L.C.; Investigation, E.B., S.-L.C., H.P. and W.Z.; methodology, E.B., S.-L.C., H.P. and W.Z.; project administration, E.B. and S.-L.C.; resources, E.B. and S.-L.C.; software, E.B.; Supervision, S.-L.C., H.P. and W.Z.; validation, E.B., S.-L.C. and H.P.; Visualization, W.Z.; writing—original draft, E.B. and S.-L.C.; writing—review and editing, E.B. and S.-L.C. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

Sustainability **2023**, 15, 2646 19 of 22

**Institutional Review Board Statement:** This project was approved by the Social Science Ethics Committee at the University of Tasmania under the registered number H0017643.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy restrictions (GDPR).

**Conflicts of Interest:** The authors declare no conflict of interest.

#### References

- 1. Bosak, J. Social Roles. In *Encyclopedia of Evolutionary Psychological Science*; Shackelford, T.K., Weekes-Shackelford, V.A., Eds.; Springer International Publishing: Cham, Switzerland, 2018.
- 2. Wood, D.J. Corporate Social Performance Revisited. Acad. Manag. Rev. 1991, 16, 691–718. [CrossRef]
- 3. Bodaghi, A.; Oliveira, J. The theater of fake news spreading, who plays which role? A study on real graphs of spreading on Twitter. *Expert Syst. Appl.* **2022**, *189*, 116110. [CrossRef]
- 4. Sachs, S.; Kujala, J. Stakeholder Engagement in Humanizing Business. In *Humanising Business: What Humanities Can Say to Business*; Dion, M., Freeman, R.E., Dmytriyev, S.D., Eds.; Springer International Publishing: Cham, Switzerland, 2022.
- 5. Lim, S.; Pettit, S.; Abouarghoub, W.; Beresford, A. Port sustainability and performance: A systematic literature review. *Transp. Res. Part D-Transp. Environ.* **2019**, 72, 47–64. [CrossRef]
- Vanelslander, T. Port CSR: Innovation for economic, social and environmental objectives. Soc. Responsib. J. 2016, 12, 382–396.
   [CrossRef]
- 7. Acciaro, M. Corporate responsibility and value creation in the port sector. Int. J. Logist.-Res. Appl. 2015, 18, 291–311. [CrossRef]
- 8. Messner, S.; Becker, A.; Ng, A.K.Y. Seaport adaptation for climate change—The roles of stakeholders and the planning process. In *Climate Change and Adaptation Planning for Ports*; Adolf, K.Y., Ng, A.B., Cahoon, S., Chen, S.-L., Earl, P., Yang, Z., Eds.; Routledge: Oxfordshire, UK, 2016; Chapter 2; p. 14.
- 9. Aerts, G.; Dooms, M.; Haezendonck, E. Stakeholder management practices found in landlord port authorities in Flanders: An inside-out perspective. *Int. J. Shipp. Transp. Logist.* **2015**, *7*, 597–620. [CrossRef]
- 10. Lam, J.S.L.; Li, K.X. Green port marketing for sustainable growth and development. Transp. Policy 2019, 84, 73–81. [CrossRef]
- 11. Dooms, M. Stakeholder Management for Port Sustainability: Moving From Ad-Hoc to Structural Approaches. In *Green Ports*; Rickard Bergqvist, J.M., Ed.; Elsevier: Amsterdam, The Netherlands, 2019.
- 12. Ha, M.H.; Yang, Z.; Notteboom, T.; Ng, A.K.Y.; Heo, M.W. Revisiting port performance measurement: A hybrid multi-stakeholder framework for the modelling of port performance indicators. *Transp. Res. Part E Logist. Transp. Rev.* **2017**, *103*, 1–16. [CrossRef]
- 13. Notteboom, T.; Winkelmans, W. Dealing with Stakeholders in the Port Planning Process. Across the Border: Building upon a Quarter of Century of Transport Research in the Benelux; De Boeck: Antwerp, Belgium, 2003.
- 14. Geerts, M.; Dooms, M. Sustainability Reporting for Inland Port Managing Bodies: A Stakeholder-Based View on Materiality. *Sustainability* **2020**, *12*, 1726. [CrossRef]
- 15. Lozano, R.; Carpenter, A.; Sammalisto, K. Analysing Organisational Change Management in Seaports: Stakeholder Perception, Communication, Drivers for, and Barriers to Sustainability at the Port of Gävle. In *European Port Cities in Transition: Moving Towards More Sustainable Sea Transport Hubs*; Carpenter, A., Lozano, R., Eds.; Springer International Publishing: Cham, Switzerland, 2020.
- 16. Olivier, D.; Slack, B. Rethinking the Port. Environ. Plan. A Econ. Space 2016, 38, 1409–1427. [CrossRef]
- 17. Lee, P.T.W.; Wu, J.Z.; Suthiwartnarueput, K.; Hu, K.C.; Rodjanapradied, R. A Comparative Study of Key Critical Factors of Waterfront Port Development: Case Studies of the Incheon and Bangkok Ports. *Growth Chang.* **2016**, *47*, 393–405. [CrossRef]
- 18. Klimek, H.; Michalska-Szajer, A.; Dąbrowski, J. Corporate social responsibility of the Ports of Szczecin and Świnoujście. *Sci. J. Marit. Univ. Szczec.* **2020**, *61*, 99–107.
- 19. Jung, B.-M. Economic Contribution of Ports to the Local Economies in Korea. Asian J. Shipp. Logist. 2011, 27, 1–30. [CrossRef]
- Andrade, M.J.; Costa, J.P. Touristification of European Port-Cities: Impacts on Local Populations and Cultural Heritage. In European Port Cities in Transition: Moving Towards More Sustainable Sea Transport Hubs; Carpenter, A., Lozano, R., Eds.; Springer International Publishing: Cham, Switzerland, 2020.
- 21. Sakalayen, Q.; Chen, P.S.L.; Cahoon, S. The strategic role of ports in regional development: Conceptualising the experience from Australia. *Marit. Policy Manag.* **2017**, *44*, 933–955. [CrossRef]
- 22. Nogué-Algueró, B. Growth in the docks: Ports, metabolic flows and socio-environmental impacts. *Sustain. Sci.* **2020**, *15*, 11–30. [CrossRef]
- 23. Goss, R.O. Economic policies and ports: The economic functions of ports. Marit. Policy Manag. 1990, 17, 207-219. [CrossRef]
- 24. Van Der Lugt, L.M.; De Langen, P.W.; Hagdorn, L. Value capture and value creation in the ports' business ecosystem. In Proceedings of the IAME 2007 Conference Proceedings, Athens, Greece, 4–6 July 2007.
- 25. Van Der Lugt, L.M.; De Langen, P.W.; Hagdorn, L. Strategic beliefs of port authorities. Transp. Rev. 2017, 37, 412–441. [CrossRef]
- 26. Marner, T.; Klumpp, M. Employment effects and efficiency of ports. *Int. J. Comput. Aided Eng. Technol.* **2020**, 12, 480–494. [CrossRef]
- 27. Musso, E.; Benacchio, M.; Ferrari, C. Ports and Employment in Port Cities. Int. J. Marit. Econ. 2000, 2, 283–311. [CrossRef]

Sustainability **2023**, 15, 2646 20 of 22

28. Martin-Soberon, A.M.; Monfort, A.; Sapina, R.; Monterde, N.; Calduch, D. Automation in port container terminals. *Xi Congr. De Ing. Del Transp.* **2014**, *160*, 195–204. [CrossRef]

- 29. Le, X.Q.; Vu, V.H.; Hens, L.; Van Heur, B. Stakeholder perceptions and involvement in the implementation of EMS in ports in Vietnam and Cambodia. *J. Clean. Prod.* **2014**, *64*, 173–193. [CrossRef]
- 30. Chen, Y.; Chao, Y.; Yang, D. Port recentralization as a balance of interest. Res. Transp. Bus. Manag. 2020, 34, 100374. [CrossRef]
- 31. Mangan, J.; Cunningham, J. Irish Ports: Commercialisation and Strategic Change. Bus. Strategy Rev. 2008, 11, 51-60. [CrossRef]
- 32. Castellano, R.; Ferretti, M.; Musella, G.; Risitano, M. Evaluating the economic and environmental efficiency of ports: Evidence from Italy. *J. Clean. Prod.* **2020**, *271*, 122560. [CrossRef]
- 33. Rodrigue, J.P.; Comtois, C.; Slack, B. The Geography of Transport Systems; Routledge: New York, NY, USA, 2013.
- 34. Panayides, P.M.; Song, D.W. Port integration in global supply chains: Measures and implications for maritime logistics. *Int. J. Logist. Res. Appl.* **2009**, *12*, 133–145. [CrossRef]
- 35. Chen, S.L.; Nguyen, H.O.; Cahoon, S.; Sakalayen, Q. Regional port development: The case study of Tasmanian Ports, Australia. In Proceedings of the International Association of Maritime Economists 2012 Conference, Taipei, Taiwan, 6–8 September 2012; pp. 1–18.
- 36. Schubert, D. Spatial Restructuring of Port Cities: Periods from Inclusion to Fragmentation and Re-integration of City and Port in Hamburg. In *European Port Cities in Transition: Moving Towards More Sustainable Sea Transport Hubs*; Carpenter, A., Lozano, R., Eds.; Springer International Publishing: Cham, Switzerland, 2020.
- 37. De Castro, N. Os desafios da regulação do setor de transporte no Brasil. Rev. Adm. Pública 2000, 34, 119–141.
- 38. Cahoon, S.; Pateman, H.; Chen, S.-L. Regional port authorities: Leading players in innovation networks? *J. Transp. Geogr.* **2013**, 27, 66–75. [CrossRef]
- 39. Paixão, A.C.; Bernard Marlow, P. Fourth generation ports—A question of agility? *Int. J. Phys. Distrib. Logist. Manag.* **2003**, 33, 355–376. [CrossRef]
- 40. Acciaro, M.; Renken, K.; El Khadiri, N. Technological Change and Logistics Development in European Ports. In *European Port Cities in Transition: Moving Towards More Sustainable Sea Transport Hubs*; Carpenter, A., Lozano, R., Eds.; Springer International Publishing: Cham, Switzerland, 2020.
- 41. Bichou, K. Port Operations, Planning and Logistics; Informa Law from Routledge: London, UK, 2009.
- 42. Santos, A.M.P.; Salvador, R.; Guedes Soares, C. A dynamic view of the socio-economic significance of ports. *Marit. Econ. Logist.* **2017**, 20, 169–189. [CrossRef]
- 43. Gripaios, P.; Gripaios, R. The impact of a port on its local economy: The case of Plymouth. *Marit. Policy Manag.* **1995**, 22, 13–23. [CrossRef]
- 44. Dooms, M.; Haezendonck, E.; Verbeke, A. Towards a meta-analysis and toolkit for port-related socio-economic impacts: A review of socio-economic impact studies conducted for ports. *Marit. Policy Manag.* **2015**, *42*, 459–480. [CrossRef]
- 45. Sakalayen, Q.; Chen, P.S.L.; Cahoon, S. Investigating the strategies for Australian regional ports' involvement in regional development. *Int. J. Shipp. Transp. Logist.* **2016**, *8*, 153–174. [CrossRef]
- 46. Sakalayen, Q.; Chen, P.S.L.; Cahoon, S. A place-based approach for ports' involvement in regional development: A mixed-method research outcome. *Transp. Policy* **2022**, *119*, 16–31. [CrossRef]
- 47. Wang, C.J.; Ducruet, C. New port development and global city making: Emergence of the Shanghai-Yangshan multilayered gateway hub. *J. Transp. Geogr.* **2012**, 25, 58–69. [CrossRef]
- 48. Terenteva, K.; Vagizova, V.; Selivanova, K. Transport Infrastructure as a Driver of Sustainable Development of Regional Economic Systems. *Acad. Strateg. Manag. J.* **2016**, *15*, 85–93.
- 49. Bottasso, A.; Conti, M.; Ferrari, C.; Tei, A. Ports and regional development: A spatial analysis on a panel of European regions. *Transp. Res. Part A-Policy Pract.* **2014**, *65*, 44–55. [CrossRef]
- 50. Ferrari, C.; Merkii, O.; Bottasso, A.; Conti, M.; Tei, A. Ports and Regional Development: A European Perspective; OECD Publishing: Paris, France, 2012.
- 51. Song, L.L.; Van Geenhuizen, M. Port infrastructure investment and regional economic growth in China: Panel evidence in port regions and provinces. *Transp. Policy* **2014**, *36*, 173–183. [CrossRef]
- 52. Kotowska, I.; Mańkowska, M.; Pluciński, M. Socio-economic Costs and Benefits of Port Infrastructure Development for a Local Environment. The Case of the Port and the City of Świnoujście. In *European Port Cities in Transition: Moving Towards More Sustainable Sea Transport Hubs*; Carpenter, A., Lozano, R., Eds.; Springer International Publishing: Cham, Switzerland, 2020.
- 53. Merk, O.; Hilmolai, O.P.; Dubarle, P. *The Competitiveness of Global Port-Cities: The Case of Helsinki, Finland*; OECD Regional Development Working Papers, No. 8; OECD Publishing: Paris, France, 2012.
- 54. Cheon, S.H. The economic-social performance relationships of ports: Roles of stakeholders and organisational tension. *Sustain. Dev.* **2017**, 25, 50–62. [CrossRef]
- 55. Zhang, Q.; Zheng, S.; Geerlings, H.; El Makhloufi, A. Port governance revisited: How to govern and for what purpose? *Transp. Policy* **2019**, 77, 46–57. [CrossRef]
- 56. Xiao, G.; Wang, T.; Chen, X.; Zhou, L. Evaluation of Ship Pollutant Emissions in the Ports of Los Angeles and Long Beach. *J. Mar. Sci. Eng.* **2022**, *10*, 1206. [CrossRef]
- 57. De Langen, P.W. Towards a Better Port Industry: Port Development, Management and Policy; Routledge: Oxfordshire, UK, 2020.

Sustainability **2023**, 15, 2646 21 of 22

58. Gómez, M. El impacto sociocultural de las transformaciones en el puerto de Barcelona. *Revista Transporte y Territorio* **2015**, 12, 16–29. [CrossRef]

- 59. Barnes, R.; Rosello, M. Fisheries and maritime security: Understanding and enhancing the connection. In *Maritime Security and the Law of the Sea*; Edward Elgar Publishing: Cheltenham, UK, 2020.
- 60. United States Environmental Protection Agency. Ports Primer: 2.1 The Role of Ports. 2017. Available online: https://www.epa.gov/ports-initiative/ports-primer-21-role-ports (accessed on 11 December 2017).
- 61. Oliveira, L.; Cepik, M.; Brites, P. O pré-sal e segurança do Atlântico Sul: A defesa em camadas e o papel da integração sul-americana. *Capa-Revista Da Egn* **2016**, 20, 139–164.
- 62. Kopela, S. Tackling maritime security threats from a port state's perspective. In *Maritime Security and the Law of the Sea*; Edward Elgar Publishing: Cheltenham, UK, 2020.
- 63. Yeo, G.-T.; Pak, J.-Y.; Yang, Z. Analysis of dynamic effects on ports adopting port security policy. *Transp. Res. Part A Policy Pract.* **2013**, *49*, 285–301. [CrossRef]
- 64. Creswell, J. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches; SAGE Publications Inc.: Thousand Oaks, CA, USA, 2009.
- 65. Creswell, J.; Clark, V. Designing and Conducting Mixed Method Research; SAGE: Thousand Oaks, CA, USA, 2007.
- 66. De Vaus, D. Research Design in Social Research; SAGE: Thousand Oaks, CA, USA, 2001.
- 67. Saunders, M.; Lewis, P.; Thornhill, A. Research Methods for Business Students; Pearson Education Limited: Essex, UK, 2009.
- 68. Mitchell, V.-W. Using Industrial Key Informants: Some Guidelines. Mark. Res. Soc. J. 1994, 36, 1–5. [CrossRef]
- 69. Duarte, F. Working with Corporate Social Responsibility in Brazilian Companies: The Role of Managers' Values in the Maintenance of CSR Cultures. *J. Bus. Ethics* **2010**, *96*, 355–368. [CrossRef]
- 70. Herzig, S.E.; Jimmieson, N.L. Middle managers' uncertainty management during organisational change. *Leadersh. Organ. Dev. J.* **2006**, 27, 628–645. [CrossRef]
- 71. Robinson, O.C. Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qual. Res. Psychol.* **2013**, 11, 25–41. [CrossRef]
- 72. Moser, C.A.; Stuart, A. An Experimental Study of Quota Sampling. J. R. Stat. Soc. Ser. A-Stat. Soc. 1953, 116, 349–405. [CrossRef]
- 73. Johnson, R.B.; Onwuegbuzie, A.J.; Turner, L.A. Toward a Definition of Mixed Methods Research. *J. Mix. Methods Res.* **2016**, *1*, 112–133. [CrossRef]
- 74. Mason, M. Sample size and saturation in PhD studies using qualitative interviews. *Forum Qual. Soc. Forum Qual. Soc. Res.* **2010**, 11, 8.
- 75. Zhao, H.D.; Zhou, Q.Y. Exploring the Impact of Responsible Leadership on Organizational Citizenship Behavior for the Environment: A Leadership Identity Perspective. *Sustainability* **2019**, *11*, 944. [CrossRef]
- 76. Harvey, W.S. Strategies for conducting elite interviews. Qual. Res. 2011, 11, 431–441. [CrossRef]
- 77. Burke, L.A.; Miller, M.K. Phone interviewing as a means of data collection: Lessons learned and practical recommendations. *Forum Qual. Soc. Forum Qual. Soc. Res.* **2001**, *2*, 7.
- 78. Jacob, S.A.; Furgerson, S.P. Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *Qual. Rep.* **2012**, *17*, *6*. [CrossRef]
- 79. Leung, L. Validity, reliability, and generalizability in qualitative research. J. Fam. Med. Prim. Care 2015, 4, 324–327. [CrossRef]
- 80. Bazeley, P.; Jackson, K. Qualitative Data Analysis with NVivo; Sage Publications Limited: London, UK, 2013.
- 81. Maguire, M.; Delahunt, B. Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *AISHE-J All Irel. J. Teach. Learn. High. Educ.* **2017**, *9*, 335.
- 82. Hsieh, H.F.; Shannon, S.E. Three approaches to qualitative content analysis. *Qual. Health Res.* **2005**, *15*, 1277–1288. [CrossRef] [PubMed]
- 83. Mason, J. Qualitative Researching; Sage: Thousand Oaks, CA, USA, 2017.
- 84. Silverman, D. Interpreting Qualitative Data; Sage Publication Inc.: Thousand Oaks, CA, USA, 2015.
- 85. Gibbs, G. Analysing Qualitative Data; Sage Publications Ltd.: London, UK, 2007.
- 86. Sandelowski, M.; Barroso, J. Classifying the findings in qualitative studies. Qual. Health Res. 2003, 13, 905–923. [CrossRef]
- 87. Desantis, L.; Ugarriza, D.N. The concept of theme as used in qualitative nursing research. West. J. Nurs. Res. 2000, 22, 351–372. [CrossRef]
- 88. Given, L.M. The Sage Encyclopedia of Qualitative Research Methods; Sage Publications: Los Angeles, CA, USA, 2008.
- 89. Temple, B.; Young, A. Qualitative research and translation dilemmas. Qual. Res. 2004, 4, 161–178. [CrossRef]
- 90. Kong, Y.; Liu, J. Sustainable port cities with coupling coordination and environmental efficiency. *Ocean Coast. Manag.* **2021**, 205, 105534. [CrossRef]
- 91. D'amico, G.; Szopik-Depczynska, K.; Dembinska, I.; Ioppolo, G. Smart and sustainable logistics of Port cities: A framework for comprehending enabling factors, domains and goals. *Sustain. Cities Soc.* **2021**, *69*, 102801. [CrossRef]
- 92. Jouili, T.A. Impact of Port Infrastructure, Logistics Performance, and Shipping Connectivity on Merchandise Exports. *Int. J. Comput. Sci. Netw. Secur.* **2019**, 19, 259–264.
- 93. Cong, L.Z.; Zhang, D.; Wang, M.L.; Xu, H.F.; Li, L. The role of ports in the economic development of port cities: Panel evidence from China. *Transp. Policy* **2020**, *90*, 13–21. [CrossRef]

Sustainability **2023**, 15, 2646 22 of 22

94. Sakalayen, Q. The Strategic Role of Australian Regional Ports in Regional Development. Doctoral Dissertation, University of Tasmania, Launceston, Australia, 2014.

- 95. Burskyte, V.; Belous, O.; Stasiskiene, Z. Sustainable development of deep-water port: The case of Lithuania. *Environ. Sci. Pollut. Res. Int.* **2011**, *18*, 716–726. [CrossRef]
- 96. Midgley, J. Social Development: Theory and Practice; Sage Publications Ltd.: London, UK, 2014.
- 97. United Nations Development Program U.N.D.P. What Is Human Development. 2022. Available online: https://hdr.undp.org/about/human-development (accessed on 15 August 2022).
- 98. Markota Vukić, N.; Omazić, M.A.; Pejic-Bach, M.; Aleksić, A.; Zoroja, J. Leadership for Sustainability: Connecting Corporate Responsibility Reporting and Strategy. In *Research Anthology on Developing Socially Responsible Businesses*; Information Resources Management Association, Ed.; IGI Global: Hershey, PA, USA, 2022.
- 99. Styliadis, T.; Angelopoulos, J.; Leonardou, P.; Pallis, P. Promoting Sustainability through Assessment and Measurement of Port Externalities: A Systematic Literature Review and Future Research Paths. *Sustainability* **2022**, *14*, 8403. [CrossRef]
- González Laxe, F.; Martin Bermúdez, F.; Martin Palmero, F. Good Practices in Strategic Port Performance. Trans. Marit. Sci. 2022, 11, 207–218. [CrossRef]
- 101. Tezcan, Ö.; Kuleyin, B. A New Perspective on Selecting Port Managers. In *Handbook of Research on the Future of the Maritime Industry*; Senbursa, N., Ed.; IGI Global: Hershey, PA, USA, 2022.
- 102. Felício, J.A.; Batista, M.; Dooms, M.; Caldeirinha, V. How do sustainable port practices influence local communities' perceptions of ports? *Marit. Econ. Logist.* **2022.** [CrossRef]
- 103. Dentchev, N.A. Corporate social performance as a business strategy. J. Bus. Ethics 2004, 55, 397–412. [CrossRef]
- 104. Freeman, R.E. Strategic Management: A Stakeholder Approach; Cambridge University Press: Cambridge, UK, 1984.
- 105. Katuwawala, H.C.; Bandara, Y.M. System-based barriers for seaports in contributing to Sustainable Development Goals. *Marit. Bus. Rev.* **2022**, *7*, 255–269. [CrossRef]
- 106. Becker, A.; Caldwell, M.R. Stakeholder perceptions of seaport resilience strategies: A case study of gulfport (Mississippi) and providence (Rhode Island). *Coast. Manag.* **2015**, *43*, 1–34. [CrossRef]
- 107. Baron, D.P. A Positive Theory of Moral Management, Social Pressure, and Corporate Social Performance. *J. Econ. Manag. Strategy* **2009**, *18*, 7–43. [CrossRef]
- 108. Rendtorff, J.D. The Concept of Business Legitimacy. In *Responsibility and Governance*; Crowther, D., Seifi, S., Wond, T., Eds.; Springer: Singapore, 2019.
- 109. Strapazzon, C.L.; Wandscheer, C.B. Brazilian Legal Time of Sustainable Development: A Short Term View in Contrast with Agenda 2030. In *Universities and Sustainable Communities: Meeting the Goals of the Agenda 2030*; Leal Filho, W., Tortato, U., Frankenberger, F., Eds.; Springer International Publishing: Cham, Switzerland, 2020.
- 110. Wood, D.J. Measuring Corporate Social Performance: A Review. Int. J. Manag. Rev. 2010, 12, 50–84. [CrossRef]

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.