

# Corporate Responsibility in the Port Sector: The Institutional Theory Perspective

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## Abstract

Corporate responsibility is not a new concept in seaports, as a result of the important role that ports play in local communities. In the last decades, however, ports have increasingly undertaken costly efforts to improve their image, as part of their corporate responsibility profile. The most discernible characteristic of this new image is that ports aim at appearing environmentally aware and sustainable. Nevertheless, the degree of adoption of green practices varies substantially among ports and globally, as some limit their efforts to respond to local community pressure or normative requirements, while others actively pursue green strategies. Corporate responsibility, and in particular its environmental dimension, however, appears to be likely to keep on increasing in importance over time.

This manuscript offers an explanation of the drivers behind such renewed interest in green strategies and corporate responsibility for ports, making use of the arguments developed in the context of institutional theory. Institutional theory focuses on the processes by which certain social structures are accepted as defining recommended social behaviours by firms. Such structures include of course norms, but also unwritten rules, routines or social constructs. Although there is an emerging literature on corporate responsibility and environmental sustainability in the port sector, institutional theory has never been applied to investigate the motivational forces behind the endorsement of such concepts in port authorities' strategies.

The paper develops a conceptual model that explains the sources of pressure that shape the corporate responsibility and environmental strategies of ports. The deriving conceptual framework is accompanied and empirically validated through several examples drawn from major ports around the world. The paper argues that the processes of vertical integration along supply chains, and the increasing competitive focus on port-centric logistics tend to strengthen the importance of corporate responsibility and in particular of environmental performance in ports. Furthermore, the paper argues in favour of a correspondence between the degree of port agility and the corporate responsibility profile of the port. Managerial and policy implication are also discussed.

*Keywords:* port management; institutional theory; corporate social responsibility; green ports; environmental management.

## 1. Introduction

Ports are characterised by substantial external effects (Dinwoodie, Tuck, and Knowles 2012, 263) and it is not surprising that they are concerned with their environmental and social impacts. On the one side the increasing societal attention on the impacts of port operations, has induced port authorities naturally to take action to protect local communities and society in general from the negative external effects of the port. Port authorities have thus been entrusted with the task of managing port development and balancing the benefits and costs deriving from port activities (Verhoeven 2010, 247-270). On the other side, this renewed interest in the environmental and societal impacts of ports exerts pressure on port authorities also in other ways.

Firstly, port authorities are entrusted, as public bodies and as maritime authorities, to translate national, regional and global (environmental) regulation (Chlomoudis and Pallis 2002, xiv, 231; Verhoeven 2010, 247-270). As such, port authorities themselves are subjected to increasing regulatory pressure, as they need to comply with regulation and ensure that adequate facilities, procedures and other requirements are available to the firms operating in the ports to ensure compliance. In addition, in many parts of the world, port authorities, as governmental agencies, are under the scrutiny of the media and the public opinion. They are, in fact, expected to operate in the public interest and ensure transparency of decision-making.

Secondly, neglecting to account for the external costs of port operations and developments can have dramatic consequences for the port as operations are interrupted and port developments are delayed, in some cases for years. Furthermore ports often benefit from public resources, and port investments often transfer external costs to local communities (Benacchio et al. 2001). When developments are privately funded, adequate risk management strategies are a necessity in order to ensure viability of the project (Meersman 2005; Ho and Ho 2006; Yap and Lam 2013). Overlooking the external impacts of port infrastructure development can substantially delay port projects (as in the case of the Deurganckdock in Antwerp) with substantial cost overruns, or even result in project abandonment. This in turn may affect the competitiveness of the port (Van de Voorde and Winkelmann 2002) and have required port authorities to learn to carefully manage stakeholder relations (Dooms and Verbeke 2007), and ensure that environmental and social matters are addressed, and when necessary compensation measures put in place.

A third issue is related to competitiveness, the enhancement of which could be considered one of the main objectives of port authorities (Meersman and Van de Voorde 2010). Since port competitiveness increasingly depends on the competitiveness of the chain where the port operates (Goss 1990), it is advisable for port authorities to stimulate the development of logistics activities that can favour the port (Heaver 1995). A paradigm has been proposed that places ports as elements in value driven chain systems (Robinson 2002) and has been the origin of prolific research in the area of port-centric logistics (Mangan, Lalwani, and Fynes 2008). But as correctly pointed out by some authors (Adams et al. 2009), this paradigm implies the necessity for ports and in particular container terminals to actively promote environmental sustainability and green management practices (Lun 2011).

Finally, given the deregulation trends that have characterised the sector since the 1980s (Baird 2000), port authorities have been increasingly acquiring the characteristics of private enterprises, and, in some cases, they operate and behave as such (Brooks 2004). Deregulation has an important consequence on port authorities, as they need to become more accountable of their decision and of their corporate image. Such accountability, together with increasing competition among ports, makes port marketing a compelling issue (Cahoon 2007). In this respect port authorities have to behave similarly to private enterprises, and even more as multinationals as some of them are active globally as terminal operators and investors.

As a result of these various forms of pressure, in the last decades it can be observed that ports have increasingly undertaken costly efforts to improve their image as part of their corporate responsibility (CR) profile. The degree of adoption of CR practices varies substantially among ports and globally, as some ports limit themselves to respond to local community pressure or normative requirements, while others actively pursue CR actions. There have been few references to environmental sustainability in ports and terminals (Denktas-Sakar and Karatas-Cetin 2012; Lun 2011; Lam and Van de Voorde 2012) that are discussed more in detail in the next section. Some authors have discussed CR in the context of ports (Dooms and Verbeke 2007) or have investigated the role of environmental performance for the competitive positioning of ports (Haezendonck 2000, 69-81). This is surprising as corporate responsibility appears to be likely to keep on increasing in importance over time and has been the subject of extensive research in other areas.

Most research efforts in studying CR can be found in the areas of strategic management, supply chain management and sustainability (Carbone, Moatti, and Vinzi 2012; Aguinis and Glavas 2012; Pelozo and Shang 2011). In a recent survey (Aguinis and Glavas 2012, 932-968), the authors surveyed 588 journal articles and 102 books on CR, and highlight the extent to which CR literature has advanced, but also notice the need for research to focus on the processes and underlying mechanisms through which CSR actions and

policies lead to particular outcomes. The authors also highlight the importance of multilevel analysis that encompasses how CR affects industries, organisations and individuals.

One way of looking at these issues is by making use of the paradigms developed by institutional theory (Brammer, Jackson, and Matten 2012). Institutional theory focuses on the processes by which certain social structures are accepted as defining recommended social behaviours by firms (DiMaggio and Powell 1983; Dacin, Goodstein, and Scott 2002). Such structures include of course norms, but also unwritten rules, routines or social constructs. In particular institutional theory enables research to account for the diversity of CR, i.e. how it is implemented across countries, and the dynamics of CR, how its implementation changes from country to country (Brammer, Jackson, and Matten 2012).

The use of institutional theory allows also contributing to another issue highlighted by Auguinis and Glavas(2012, 932-968): the lack of the research investigating CR at the individual level, or, as the authors call it, *the microfoundation* of CR. Institutional theory, in fact, with its focus on the legitimation acknowledges that organisations and individuals within organisations seek recognition and are shaped invariably by habits and traditions. CR attitudes are deeply rooted in individual upbringing, organisation cultures and national epics and role models. These themes can only marginally find space in this manuscript, but the port authorities are strongly characterised by the culture of the country where the port is located, and are traditionally being rooted in the local community, the port city and the close port hinterland.

Although this study is not the first to look at the use of institutional theory in the area of CR (Matten and Moon 2008; Bondy, Moon, and Matten 2012), and is not the first to apply institutional theory to ports (Lu and Koufteros 2013; Lun et al. 2008) it is the first to look at CR in seaports using institutional theory. Seaports are an interesting example, not only for their dual nature of public bodies with private firm characteristics, but also as they are deeply rooted in the local normative and social context, but at the same time need to maintain an international focus. Many port authorities are active internationally and differ on how environmental and social imperatives are implemented in different parts of the world.

A full appreciation of how ports implement CR globally would require a cross-sectional approach and could provide the basis for interesting research. Before such approach can be applied, however, port management research needs to further develop the conceptual constructs on which to base quantitative analysis. As ports differ among each other and comparisons need to be made carefully, more research is needed on case studies and conceptual models. This paper represents a first step towards such conceptualisation. Its main contribution resides in combining institutional theory and CR in the port sector in the hope to stimulate further research in this area. The paper also contributes to the existing theory of port as logistics service providers, highlighting how if ports aim at strengthening the competitive position of the chains where they operate, a CR orientation is critical.

The paper is structured in four sections. This introduction outlined the relevance of corporate responsibility in ports and introduced the conceptualisations that will be dealt with in more detail in the other sections. Section two analyses the emerging literature on CR in the port sector, highlighting how the analysis so far has focused on the environmental dimension of CR. Section three introduces institutional theory and develops a set of hypotheses linked to the applicability of CR to the port sector. Section four summarises the major findings of the paper, indicates areas for further research and concludes.

## **2. CR in the port sector: definitions and literature review**

### *2.1. The green port and the sustainable port concepts*

CR is not a new concept in seaports, as a result of the important role that they play in shaping the developments and sustainability of local communities. In the last decades, however, ports have increasingly undertaken costly efforts to improve their image, as part of their CR profile. Since port authorities are typically public bodies, they are traditionally not seen as falling within the scope of CR studies. CR is, in fact,

generally defined as voluntary (Carroll 1999), and given the public nature of most port authorities (Brooks 2004; Verhoeven 2010) it would be expected that CR should be part of their nature.

Port governance reforms and port competition, however, are modifying the nature of port authorities, that are required to pursue growth, efficiency and financial independence along traditional public functions and interests (Juhel 2001; Brooks 2004). As private capitals increasingly play a role in ports, and as ports around the world become corporatized, ports need to supplement their public task, such as the provision of infrastructure as a public good, with financial and managerial considerations typical of the private sector (Baird 2004). As competition increases and hinterlands become contestable (Ng 2006; Notteboom, Ducruet, and De Langen 2009), ports try to attract new customers and have to make larger efforts to main the old ones. Moreover, the need to convince the public of the need for new infrastructure and the increasing attention paid by society to the negative external effects of ports and shipping, calls for ports to become better stakeholders' managers (Dooms and Verbeke 2007).

As a result ports need to look for legitimacy from the local communities and the public opinion, and at the same time from their customers and users. In this respect ports behave as private companies and it is not surprising that then they need to engage in marketing, promotion (Cahoon 2007) and, as we argue, improve their CR profile. This has resulted in a large set of initiatives aiming at bringing the local communities closer to the harbour, such as the popular *Hafengeburtstag* (port birthday) in Hamburg, or the *Haven Dagen* in Rotterdam. This image is strengthened by marketing and communication efforts and by the improvements that port waterfronts have been going through in Amsterdam (Wiegman and Louw 2011), Hamburg (Grossmann 2008), the USA (Hoyle, Pinder, and Husain 1988) and many other ports in Asia and Europe (Ducruet 2007).

The most discernible characteristic of this new image is that ports aim at appearing environmentally aware and sustainable. Being identified as a *green port* is clearly a valuable strategy as ports need to counteract the negative effects of pollution from vessel and cargo handling operations, congestion from the use of hinterland transport network and the negative impacts of infrastructure developments (Lam and Van de Voorde 2012). Nevertheless, the degree of adoption of green practices varies substantially among ports and globally, as some limit their efforts to respond to local community pressure or normative requirements, while others actively pursue green strategies. Corporate responsibility, and in particular its environmental dimension, however, appears to be likely to keep on increasing in importance over time.

Notwithstanding this increasing importance the literature in the area of sustainability in the port sector is at most scant and *green port* definitions are rather ambiguous (Lam and Van de Voorde 2012; Acciaro, Ghiara, and Cusano 2013; Adams et al. 2009). The magazine and event organisers *GreenPorts* indicate as part of the scope of green ports that of "*balancing environmental challenges with economic demands*" (GreenPorts 2013). The ESPO initiative called *EcoPorts* (ESPO 2012), aims at creating a "*level playing field on port environmental management in Europe through the sharing of knowledge and experience between port professionals [...] in line with the principles of voluntary self regulation*" (EcoPorts 2013).

From these statements we can infer that the concept of green port is rooted in the triple bottom line principle, that entails the inclusion of social, economics and environmental goals from a microeconomic standpoint (Elkington 1997; Henriques and Richardson 2012). We can also infer that green ports go beyond regulation as voluntary action is encouraged, and that environmental management has the potential of distorting the level playing field, favouring some players with respect to others as the implementation of stringent environmental practices may disadvantage the port. It is interesting to observe that this last statement is supported in some CR literature, which identifies CR practices as costly and therefore detrimental to the firm competitiveness<sup>1</sup>.

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<sup>1</sup> This attitude is observed also in the container shipping industry (see Michele Acciaro, "Pricing in Sustainable Global Container Transport," *International Journal of Decision Sciences, Risk and Management* 3, no. 3, 2011) where, while on the one side CR practices are well established, on the other side are perceived as adding costs and thus making offers less attractive to those shippers more sensitive to price differentials.

We can define green ports as those ports engaging in the proactive development, implementation and monitoring of practices aiming at reducing the environmental impacts of the port at a local, regional and global level beyond regulatory compliance. They engage in innovation and research with the objective of balancing environmental challenges with economic performance. Green ports are concerned, among other issues, with resource preservation, air/water/soil pollution reduction and control, limitation on the impacts on the fauna and flora, as well as climate change mitigation and adaptation.

The green port concept stems primarily from the need for ports to improve their environmental performance as a result of local communities and port users increasing demand for environmental accountability. Logistics service providers are more and more concerned with the sustainability and performance of their supply chains, and have been requiring transport providers and ports to collect information related to their environmental key performance indicators (EKPI), most notably, green-house gas emissions, but also water and sediment quality (Darbra et al. 2005b; ESPO 2012).

But the green port concept is also related to the demand from the side of local communities to be informed on the types of cargo that go through the port and the environmental risks associated with port operations. This increased attention to the environmental performance of the port is also often motivated by the necessity of the port to protect some of its economic activities, as ports redevelop their waterfronts for tourism (Bauriedl and Wissen 2002) or residential areas and as the relationship between the port and the city becomes more symbiotic (Hoyle, Pinder, and Husain 1988). Ports are increasingly focusing on tourism, real estate management and the environmental profile of the port has consequences on the port image and their development.

It appears then that the green port concept is invariably linked to the societal perception of environmental priorities for the port, and can be considered as an integral part of a broader concept that accounts also for sustainability and CR. This concept, that can be referred to as, *sustainable port*, incorporates the green port concept, but stresses the role of societal impacts and economic viability of port strategies. The sustainable port concept require ports to account for economic, environmental and societal considerations in their strategy definition, in line with the triple bottom line approach advocated by sustainability scholars (Elkington 1997).

## 2.2. Literature review

Academic literature initially focused on ecological issues (Bateman 1996; Dinwoodie, Tuck, and Knowles 2012; Liao et al. 2010; Berechman and Tseng 2012; OECD 2011), and monitoring port environmental impacts (Darbra et al. 2004; Darbra et al. 2009; Darbra et al. 2005a; Wooldridge, McMullen, and Howe 1999; ESPO 2012). Some literature has focused on the environmental impacts deriving from shipping activities (Goulielmos, Lun, and Lai 2012; OECD 2011; Berechman and Tseng 2012; Dinwoodie, Tuck, and Knowles 2012), while others have focused on hinterland-based emissions (Roso 2008; Roso 2007; Bergqvist and Egels-Zandén 2012; Liao, Tseng, and Lu 2009).

There is also an emerging literature that from the seminal works of Haezendonck (Haezendonck 2001; Haezendonck, Coeck, and Verbeke 2000; Haezendonck et al. 2006) aimed at identifying the value added that environmental performance in particular, and CR in general, might bring to ports. Lam and Van de Voorde (2012) provide a review of the extant literature on green ports and sustainable supply chain management and provide one of the first frameworks for sustainable port strategies. They develop five propositions that address the role of stakeholders involvement in green market development and green policy effectiveness and in turn the impact that green market development and policy effectiveness have on sustainable port operations and development. In their framework they postulate that *'a green port will lead to positive outcome on port's customer retention and economic performance'* (Lam and Van de Voorde 2012).

Limited literature has looked explicitly at the social and economic dimensions of sustainability (Denktas-Sakar and Karatas-Cetin 2012). In this paper the authors highlight the role of resource dependence theory in port sustainability and stakeholder management. Through a literature review of the use of resource dependence theory in supply chain management they develop a conceptual framework, that suggests that ports should adopt strategies as *'insertion, integration and dominance for the management of interdependencies'*

*through the adoption of strategic tools to enhance effective stakeholder relations management and port sustainability*'. These strategies look at strengthening the interdependence with shipping lines and terminal operators through dedicated terminal concessions, transaction costs reduction and the objective of capturing supply chain value (Jacobs and Hall 2007), and by doing so also strengthening stakeholder interdependencies and ensuring sustainable growth for the port. The authors intend to extend their framework to better account for the environmental aspects of the analysis.

As correctly pointed out by Robinson (2002) and by others more recently (Jacobs and Hall 2007), summarising the value-delivery framework developed by Porter, one of the key focus that companies and transport service providers should consider is the creation of value for their costumers. In terms of CR strategies for ports and in general for logistics service providers, such focus becomes relevant in the moment in which port customers, but also port stakeholders, and the supply chain parties in which the port is inserted, assign value to CR. In other words CR practices make sense when they add value to the chain where the port operates.

The resource dependence analysis highlights the role that supply chain management plays in port environmental management and CR strategy definition. Sustainable supply chain management, intended as the strategic integration of economic, environmental and social goals for the improvement of the economic performance of a company and its supply chain (Carter and Rogers 2008), has become an established concept in the supply chain management literature and recently it has started being applied to maritime logistics and ports (Pawlik, Gaffron, and Drewes 2012; Acciaro 2011; Lam and Van de Voorde 2012).

To similar results arrives the work of Adams, et al. (2009). From their study of eight world ports, they conclude that going beyond environmental compliance does not appear to be directly beneficial for market share increase, but they argue that a business case exists as port operators and port authorities that invest in improving environmental compliance are likely to gain a competitive edge. Their results arise from the observation that as regulation increases, as port developments are more dependent on adequately addressing societal environmental concerns, and in general environmental imperatives for ports becomes more compelling, by not thinking in terms of competitive advantage ports are missing a business opportunity to improve their competitive position.

It is not simply a matter of dealing with environmental regulation, that has always played an important role in ports as the economic benefits of port activities tend to fall on the larger port hinterland while external costs are born in the proximity of the port (Benacchio et al. 2001). Port authorities, in fact, are increasingly realising that good environmental performance is a necessary requirement to maintain good relations with local communities, and can become a source of competitive advantage (Wiegman and Geerlings 2010; Adams et al. 2009). The attractiveness of the port in terms of its green image can be interpreted as the port being able to gain competitive advantage through sustainability, as cleaner ports are likely to be more attractive for cruise passengers and tourism activities.

Much more controversial is sustainability as a source of competitive advantage for those ports whose portfolio of activities is geared more towards cargo loading and unloading operations or the heavy industry. Little investigation has been carried out on how sustainability impacts port competitiveness and how such relationship actually unfolds. If ports are seen as elements in value-driven chain systems, as described above, (Robinson 2002), then the supply chain management literature on corporate social responsibility can offer guidance on how green ports, as logistics service providers, can be competitively superior (McKinnon 2010).

On the basis of these observations and of the emerging literature described above it can be argued that CR improves port competitiveness for the following reasons:

- Favours the identification of inefficiencies and business opportunities that otherwise could have remained unknown
- CR allows for better stakeholder management
- CR allows the port to be identified as green and therefore more innovative
- Sustainable supply chains are more difficult to replicate

- Sustainable ports have a higher possibility of influencing or pre-empting environmental regulation or regulation aiming at reducing societal negative impacts

The characteristics of sustainable ports are particularly suited to an approach to port management that is in line with the agile port concept (Marlow and Paixão Casaca 2003; Paixão and Marlow 2003; Mangan, Lalwani, and Fynes 2008) and the definition of fourth generation ports as outlined in UNCTAD (1999). Agility calls for a stronger link between external and internal business environments and allows ports to respond rapidly to economic changes (Paixão and Marlow 2003). Considering that sustainability constitutes an important challenge to modern port operations (ESPO 2012), the ability of the port to adapt to and influence upcoming regulation and to respond to customer demands, need to be an integral part of agile port strategies.

An agile sustainable port strategy needs to be articulated on various fronts and is by definition multifaceted and flexible, and therefore prioritisation systems are particularly relevant. Typical environmental themes relevant for ports are discussed for example in OECD (2011) and ESPO (2012), which offers guidance on how to prioritise those issues. There is instead less focus on societal priorities, although interesting insights can be obtained from the literature on stakeholder management (Dooms and Verbeke 2007) and port supply chain value creation (Jacobs and Hall 2007; Denktas-Sakar and Karatas-Cetin 2012; Robinson 2002). There is also emerging literature on the innovative potential of green ports (Acciaro et al. 2013) and the role of ports as energy managers (Acciaro, Ghiara, and Cusano 2013).

### 3. The institutional theory perspective on CR in the port sector

#### 3.1. Institutional theory

Social behaviours of economic organisations and individuals are shaped by rules, norms and routines (*structures*) (Scott 2004). Institutional theory deals with how these structures influence behaviours, spread over time and space and are adopted or abandoned. A definition of institutional theory is provided by Morgan et al. (2012):

*The field in which we are interested can be defined in how the forms, outcomes, and dynamics of economic organisation (firms, networks, markets) are influenced and shaped by other social institutions (e.g. training systems, legal systems, political systems, educational systems, etc.) and with what consequences for economic growth, innovation, employment, and inequality. Institutions are usually defined [...] as formal or informal rules, regulations, norms, and understandings that constrain and enable behaviour.*

(Morgan et al. 2012, p. 2)

In the specific context of this paper we are interested in looking at port authorities as a special form of economic organisation. This assumption is reasonable since port authorities combine institutional roles with typical functions of private firms in various degrees (Brooks 2004), and as such they are subjected to the influences of structures. Institutional theory has already been used for various type of economic organisations (Zucker 1987).

Port authorities and the individuals that operate within them are assumed to seek social recognition and are then exposed to habits, traditions and other social influences, which are not only the result of rational optimisation behaviours. A central concept in institutional theory is that of *legitimacy*, that is conformity to social expectations (Zucker 1987). Legitimacy contributes to the organisation success and survival (DiMaggio and Powell 1983), and as such provides an incentive for organisation to adopt behaviours and practices that are similar to those adopted by other comparable organisations. In doing so they become similar to each other adopting certain common practices, referred to as *isomorphism*, in order to gain societal acceptance and benefit from legitimacy (Scott 2004).

The processes that lead to isomorphism are of four types (DiMaggio and Powell 1983): coercive, mimetic, normative, and competitive. Coercive isomorphism is the result of pressure from governments or customers.

Mimetic isomorphism stems from business uncertainty and is the result of the imitative practices that organisations put in place when they are uncertain of their efficacy, but feel peer pressure in adopting them. Normative isomorphism derives from norms that are set by the way people are trained and educated, or by rules that are used for obtaining standards and certifications. Finally competitive isomorphism is the result of the preference for those practices that do benefit the organisation by improving operational efficiency (DiMaggio and Powell 1983; Lun et al. 2008).

The suitability of institutional theory in the context of CR is quite striking. Nonetheless its application to CR highlights that CR practices are not entirely voluntary (Brammer, Jackson, and Matten 2012). This is not a trivial point, and, as Brammen et al. suggest, it shakes the foundations of CR. In their insightful paper, the authors also highlight the deriving *contested and contingent nature* of CR. This analysis is also particularly suited for the application of CR to the port sector, with the contested and contingent definition for example of *green port*.

### 3.2. Coercive structures

Governments are typically associated with the type of pressure that coercive structures exert on organisations. It has been mentioned already how governments and governmental agencies have to adhere to specific code of conducts developed at a national or international level. These could refer to accident prevention practices within the port authority or the port areas as well as structures aiming at eliminating corruption from public offices. Also port governance reform, if seen as the attempt of government to increase organisational efficiency within the port, can be interpreted as a coercive structure.

But coercive structures are also imposed by the agencies from which the organisation depends upon. In the case of port authorities these are clearly port customers, such as shipping lines and transport service providers, terminal operators and, last but not least, cargo interests. Consumers increasingly take into account in their purchasing decisions the conditions under which products are manufactured and transported (Pickett-Baker and Ozaki 2008). *Bio* labels for products, *Fairtrade*, as well as of powerful shippers' initiatives such as the *Wall-Mart green label* or the *IKEA Eco Score cards* are all forms of coercive pressure for logistics providers and as a result for ports. CR becomes a necessary requirement for engaging in certain types of trades.

Regulation and consumer pressure are in the end two sides of the same trend, as governments, tend to respond, or at least need to take into account, changes in population tastes and values. On the basis of these considerations a first proposition can be put forward:

*Proposition 1: As national, regional and international regulation and the societal valuation of environmental and social management practices increase, the more port authorities will engage in CR.*

### 3.3. Mimetic structures

Mimetic structures are the result of behaviours that port authorities acquire from examples that have been developed elsewhere. The CR profiles of many ports are surprisingly similar as ports tend to apply the same technologies, or engage in the same type of CR activities. On the one side it is true that many of the social and environmental issues that port authorities have to face are similar, and that organisations in general tend to benchmark to learn from competitors best practices. On the other side a mimetic component is an integral part on how port authorities select environmental and social practices as many of them are characterised by uncertainty. Ports monitor the developments in other ports and take inspiration from the most successful strategies implemented elsewhere. An example is the similar response that ports have been providing to the developments of onshore power supply or the investment in LNG bunkering activities. Several ports have engaged in waterfront redevelopment and try to exploit waterfront locations for urban redevelopments.

In an uncertain environment, in line with the hypothesis of bounded rationality, port authorities may feel that a certain practice revealed successful for a competitor, there is a high chance that it might be appropriate also for the port. Especially if the costs associated with adoption of certain practices, ports might adopt CR



behaviours simply as a result of mimetic pressure. A related example could be linked to the adoption of the landlord port model by many port authorities in the world. While clearly the port governance reform is not initiated by the port authority alone, and in the case of developing countries a certain coercive pressure has been exercised by the World Bank and the International Monetary Fund, it is also likely that a certain degree of mimetic pressure has played a role in the global adoption of the landlord governance model.

The more certain practices are accepted and implemented among various ports, whether they are related to environment, stakeholder management or governance, the more it is likely that sch practices will be adopted by other port authorities. We can then formulate the a second proposition:

*Proposition 2: The implementation of CR practices by port authorities will increase as the number of port authorities engaging in CR practices within a competing range increases.*

### 3.4. Normative structures

Normative structures are related to the way organisations acquire their professional skills and how certain specialisations are shared among consultants, advisors and surveyors. Most of the people that deal with CR participate to the same training programmes and are advised by a limited pool of consultants. These professionals are likely to have similar opinions and follow similar approaches to CR. Furthermore certain practices associated for example with ISO certifications, ensure that normative structures are reproduced and repeated among organisations. We can then formulate the following proposition:

*Proposition 3: As CR norms become more codified through certifications and standards, and as the profession CR officials becomes better established, the more port authorities will implement CR practices.*

### 3.5. Competitive Structures

Competitive isomorphism is particularly interesting in the case of CR as it stems from the search for operational efficiency. CR has often been identified as a source of cost increase (Walley and Whitehead 1994) and although this might not always be the case, it has generally not been associated with operational efficiency. CR is not implemented identically among all firms, and isomorphic strategies allow for competitive differentiation. Competitive structures are those that arise because of performance pressure and CR can grant an advantage to firms that put an effort in implementing it.

In the value delivery framework (Robinson 2002) outlined in the previous section emerges clearly how CR, and in particular its environmental dimension, can represent superior practices as long as port authorities engage in those practices that are required by their customers. Since isomorphism is likely to arise also in firms upstream and downstream the focal firm, i.e. the port authority in this case, CR is likely to benefit the competitiveness of ports. Such relationship is strengthened by the correlation between innovativeness and CR (Kibbeling 2010) therefore favouring those port authorities that engage in CR practices.

Several examples can be used to associate CR with better performance. The attempt to reduce emissions, by increasing energy efficiency, may stimulate port authorities to investigate electrification of port equipment and often substantially reduce energy costs. The use of alternative fuels, such as LNG or biofuels for port operations, can also substantially reduce the port fuel bill. The necessity to redevelop obsolete port areas has allowed port authorities to capitalise on prime real estate and increase revenue from port waterfront redevelopments. These considerations can be summarised in the following proposition:

*Proposition 4: CR practices can arise as a consequence of competitive pressure and result in operational efficiency gains for port authorities and port operators.*

Port authorities are likely then to adopt CR practices to increase their legitimacy and at the same time to increase operational efficiency and performance. They will be perceived as trustworthy and more innovative and as such will be preferred by their customers and be favoured by other agencies.

#### 4. Concluding remarks

This paper has highlighted a set of drivers behind the renewed interest in CR in ports. The arguments used in the paper explain why ports show an interest in CR. On the basis of extant literature we define the concept of green port concept arguing how it should be integrated in the broader perspective of sustainable ports. The main drivers for CR are then discussed in view of the existing research on the concept of green port. The contribution of the paper is identifying the interest of port authorities in CR not only in the traditional rationale of promoting environmental awareness, but also as a source of competitive advantage through the supply chain value creation.

The paper also argues that a CR attitude is in line with concepts of agility and port-centric logistics. The processes of vertical integration along supply chains, in fact, as well as the increasing competitive focus on port-centric logistics, tend to strengthen the importance of CR and in particular of environmental performance in ports. There is therefore a correspondence between the degree of port agility and the corporate social responsibility profile of the port.

Furthermore the paper proposes an alternative view on CR in ports making use of the lenses developed in the context of institutional theory. Institutional theory focuses on the processes by which certain social structures are accepted as defining recommended social behaviours by firms. Such structures include of course norms, but also unwritten rules, routines or social constructs. This analysis shows that CR developments in the port sector have a reinforcing effect through mimetic and normative structures. As environmental regulation will increase, ports will need to increase CR practices. Finally the existence of competitive pressure allows for diverse approaches for the implementation of CR practices in ports, in line with the main literature findings on environmental performance for ports.

The increasing role of CR in the port sector has major implications on port management and policy. A successful implementation of CR practices requires a broader understanding of such practices at an organisational level. Furthermore sustainable ports are likely to be selected in the future a preferred supply chain partners and therefore will acquire stronger dominance on the chain. This increases the range of strategic options that ports have to compete, where CR will become one of the competing battlegrounds, together with ports, infrastructure, innovation and hinterland accessibility. Competition will extend along the supply chain, with different chain parties struggling to capture the value generated in the sustainable chain. This requires business to find adequate mechanisms to share value as supply chain cooperation will remain critical.

From a policy perspective this changes the role that environmental regulation plays in the port industry. As sustainable ports become better skilled at influencing regulation, governments have to ensure that the level playing fields are maintained. Furthermore financial support aiming at fostering sustainability might become unnecessary, as port authorities, and the chains where they operate, learn to capitalise on their superior CR performance. Clearly national governments have interest in favouring the development of sustainable supply chains that include their ports, and therefore an adequate balance between chain competition and cooperation should be found.

These implications call for further research in the area of CR in the port sector. Empirical validation of the propositions and concepts outlined in this paper would be beneficial for a better understanding of how the port sector perceives CR. It is likely that CR is perceived differently in different locations around the world, and understanding such differences is a necessary part of understanding the value creation through CR in ports. There is a lack of studies on the societal impacts of ports and how they are affecting the local communities in manners other than the environment. This area would be complementary to the existing research on CR. Finally, more attention should be paid by port researchers on the managerial implications of CR in the port sector in particular and for maritime chains in general.

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