3 Strategic beliefs of port authorities


Abstract

Over the last decade, insights from management studies have increasingly been applied to ports. Due to institutional reform, the strategic development of port authorities has gained attention from both practitioners as academics. This chapter adds to the emerging understanding of the strategy of the port authority (PA), by applying a cognitive perspective. The strategic cognition of firms’ executives is one of the explanatory variables for the strategic decisions of firms. Furthermore, cognitions are influenced by the organizational context in which PA executives have worked. As a result managerial ‘mental maps’ may vary across industry contexts and over time. This research investigates the strategic cognition of a set of PA executives by using a survey based instrument. The results show that PAs in their strategic thinking resemble to a large extent ‘regular’ for profit companies, but that they have some specific beliefs distinguishing them from ‘regular’ companies.

Keywords: strategy analysis, cognition, mapping, port authority strategy
3.1 Introduction

Port authorities (PAs) are the organizations that are responsible for a competitive, sustainable and safe development of seaports (Notteboom & Winkelmans, 2001; Chlomoudis & Pallis, 2004; De Langen, 2004, 2008). PAs operate as public–private ‘interfaces’. They “synchronize the interest and action of all public institutions (central government, municipality, etc.) with the behavior and the strategic intent of private operators and, increasingly, their own strategic intent” (van der Lugt et al., 2013:4). PAs face changing external environments: globalization and integration of customers, changing supply chain requirements, increasing environmental pressure and scarcity of spatial resources. In addition they are subject to institutional reform and increasingly accountable for their performance, from an economic, financial and societal perspective (Verhoeven, 2010). The changing environment and ongoing institutional reform of PAs has brought more attention for strategy development among the management teams of PAs: PAs develop new business models (Hollen et al., 2014) and widen their strategic scope (Verhoeven, 2010; Van der Lugt et al., 2014).

In reaction to these developments, insights from management disciplines such as strategic management, human resources management (HRM), environmental management and information and knowledge management have been applied to ports (Woo et al., 2011). A set of papers has stressed the value of applying theoretical concepts and research models that are used in strategy and management to further understand and unravel the strategic decisions of PAs. A not yet tapped upon perspective on the strategy making of the PA is the cognitive perspective. In the last three decades, the cognitive perspective has developed into a well-established perspective in strategy and organization studies. A seminal early work is Cyert et al. (1958) introducing the notion of the organizational actor as information handling system. The cognitive approach, with its roots in cognitive psychology, connects within the field of organizational behaviour with the strategic choice approach (see Child, 1972; Beckert, 1999). In contrast with the other main view, external control, in which strategic decisions are thought to be deeply constrained by the external environment, academics advocating the strategic choice view, emphasize the role of the manager’s choices as driver for strategic action (Nadkarni and Barr, 2008). Indeed, the argument of academics advocating the cognitive approach is that the understanding of strategic decision making is significantly limited without giving attention to cognitions (Hitt and Tyler, 1991; Stubbart, 1989; Johnson, 1992). As a result strategy literature contains a large amount of papers addressing the cognitive aspect in strategy making (see for extensive overviews Walsh, 1995; Huff, 1990; Hodgkinson and Healey, 2008).

In this chapter we review the relevance of cognition for studying the strategy of PAs. Three main characteristics of the cognitive perspective can be distinguished. First, cognitive processes are influenced by the executives’ and organizational context and as a result managerial perceptions may vary across industry contexts (Sutcliffe and Huber, 1998), and thus also between organizations of different institutional structure. Second, cognitive representations are typically based on historical experience as opposed to current knowledge of the environment (Tripsas and Gavetti, 2000). This makes sectors undergoing serious transformation interesting to look at as
the executives’ cognition might be not aligned with its actual strategy context. Executives might take decisions based on successes in the past achieved within a particular context that might not be successful anymore due to a changing context. Example is the inertia at Polaroid at the end of the 1980s. Polaroid kept a ‘razor blade’ business model that was successfully developed in the imaging market also in the digital imaging market where it proved to be not successful (Tripsas and Gavetti, 2000). Third, strategic cognitions exhibit a high level of rigidity: people are not inclined to change their minds (Baron, 2004; Tripsas and Gavetti, 2000; Meyer, 2007).

This chapter analyses empirically the specific strategic beliefs of PA’s executives. PAs are institutional organizations of specific nature and moreover over the last decades they have undergone substantial reform. PAs have their roots in the public administration, but transformed in the recent past into more autonomous, financially self sustaining organizations. The nature of administrative organizations differs from the nature of private firms. In the first place administrative organizations strive multiple, intangible, conflicting and non-prioritised goals (Kay and Thompson, 1986). Second, they often lack the incentives to act in a commercial and customer oriented way, due to the absence of competition (Kay and Thompson, 1986). In their investment schemes political priority comes before economic priority. This has resulted in organizations with relative high levels of bureaucracy, normative styles of functioning and lack of managerial autonomy, highly influenced and intervened by external forces (see also Van der Lugt et al., 2013). PAs are often ‘hybrids’ in the sense that they have public and private goals and that they act in a competitive environment but often (partially) depend on government funding. Over the last decades the general movement has been towards commercialization, corporatization and even privatization of PAs (Verhoeven, 2006). This reform has given PAs more strategic freedom and has changed their strategy making context in terms of goals, mandates and accounting principles. (Van der Lugt et al., in press). As strategic cognition is to a large extent determined by past experiences we propose that PA’s executives have specific strategic cognitions that influence their strategy making and that this aspect should be added to the analytical perspectives that are applied in PA strategy research. In the research we measure empirically the strategic beliefs of PA executives and interpret the outcomes, relating them to the specific institutional nature of the PAs. We use survey data, to analyse the strategic beliefs of PAs specifically and to analyse the differences in strategic beliefs by PAs with different institutional backgrounds.

The chapter is structured as follows. Section 3.2 gives a review of the insights developed related to the strategy of the PA. Section 3.3 explains the relevance of the cognitive perspective in strategy research and describes the measurement tool as it is selected for the purpose of our research. Section 3.4 gives the results of the quantitative analysis among a large set of managers from PA organizations worldwide. The chapter concludes with a discussion of the results.

3.2 Perspectives on analysing port authority strategies; an overview

Although seemingly still in its early stage, PA strategy research has gained increasing attention which has resulted in interesting and valuable contributions. Table 4 gives a structured overview of key papers addressing the strategy of PAs.
### TABLE 4: OVERVIEW OF RELEVANT CONTRIBUTIONS ON PA STRATEGY

<table>
<thead>
<tr>
<th>Concept/theories</th>
<th>Selection of authors/Contributions</th>
<th>Arguments / explanations for PA strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port administration model</td>
<td>Baird, 2000; Brooks, 2004; Brooks and Cullinane, 2007; Notteboom et al., 2013; De Langen and Heij, 2014; Wang and Olivier, 2004; Chen, 2009</td>
<td>PA's position and role changes due to port governance reform</td>
</tr>
<tr>
<td>PA strategy related to port operators / Concessions</td>
<td>Goss 1990</td>
<td>- The division of responsibilities in ports over a public authority and private actors asks for a strategic reorientation of the port authority, ranging from a minimalist strategy to a pro-active strategy</td>
</tr>
<tr>
<td></td>
<td>- Notteboom 2007; De Langen et al., 2012</td>
<td>- Risk of market failure in port operations, due to limited intra port competition induces an active concession policy of port authorities</td>
</tr>
<tr>
<td>Collective action, cluster theory</td>
<td>De Langen, 2004A; 2004B; De Langen and Pallis, 2007; Verhoeven 2010</td>
<td>Cluster theory, i.e., the concept of collective action problems and the existence of coordination costs, brings arguments for PAs to develop cluster management strategies</td>
</tr>
<tr>
<td>Strategic scope, business models</td>
<td>Verhoeven 2010, Van der Lugt et al., 2013, Ho llen et al., Coeck et al., 1996; Dooms et al., 2013</td>
<td>Due to more autonomy and more financial self sustainability PAs develop new strategies and new business models. Outcome varies based on port's background ranging from conservative to entrepreneurial including internationalization strategies that build upon capabilities</td>
</tr>
<tr>
<td>Interdependence, co-evolution</td>
<td>Hall and Jacobs, 2010; Child et al., 2012; Van der Lugt et al., 2014</td>
<td>Organisational proximity/interdependence between port authority and port operators influences the way in which strategy of port authorities can be developed and the way in which the strategic relationship between PA and port operators might develop</td>
</tr>
<tr>
<td>Strategic fit</td>
<td>Balthazar and Brooks, 2007</td>
<td>The strategic fit approach asks port authorities to establish a fit between the port's environment, the port's structure and the port's strategy</td>
</tr>
<tr>
<td>Port regionalization</td>
<td>De Langen, 2008; Notteboom and Winkelmans, 2001; Robinson, 2002; Notteboom and Rodrigue, 2005; Chlomoudis and Pallis, 2004; Rodrigue et al., 2010</td>
<td>Increased importance of chain performance together with high level of fragmentation in inland chains give impulse to PAs to expand the strategic domain beyond the borders of the port</td>
</tr>
</tbody>
</table>

The main contributions regarding the strategic orientation of PAs take an outside-in approach: changes in the external institutional and market environment put pressure on PAs and induce changes in their role and strategy. Such outside-in perspectives are clearly relevant, but generally do not address the role of strategic agency (Beckert, 1999), meaning purposeful actions by the executives of the organization. Inside out approaches, that take the organizational internal attributes as driver for strategic change and that have developed into a vast stream in strategy research (Barney and Zajac, 1994; Foss, 1996, 1998) are virtually absent in PA strategy research.
This research positions in the upcoming discourse on the strategy of the PA and adds the PA’s executives’ strategic cognitive as a potential relevant explanatory variable for the process and content of the PA’s strategy.

3.3 Conceptual approach on measuring strategic cognition of PAs

This section introduces the cognitive perspective as it is developed in strategy research with the aim to identify a proper measurement tool for assessing the cognition of ports’ executives.

3.3.1 Strategy and cognition

A strategy can be defined as ‘the pattern, plan, ploy, position or perspective that integrates an organization’s major goals, policies, and action sequences into a cohesive whole’ (Mintzberg, 2003: 10). Strategy making is the process that results in “the direction and scope of an organization over the long-term, that creates competitive advantage, while allocating resources within the relevant environment and fulfilling markets' and stakeholders' needs” (Johnson et al., 2008). While strategy making has long been associated with logical systems of analysis and planning, more recent it has been advocated that cultural, political and cognitive aspects related to the organizations’ executives should be taken into account (Johnson, 1992). To define its strategy, managers must think and develop knowledge and to develop knowledge, managers must process information: information on the initial structure and strategy of the organization; information on the external context; information on organization principles. In order to process all the information into relevant knowledge, managers are forced to use simplified representations of the various aspects and phenomena they obtain information on. These imperfect representations form the basis for the development of mental models and strategic beliefs that drive managerial decisions (Tripsas and Gavetti, 2000). Walsh states that “Individuals process information from the environment using some form of knowledge structure, which is a mental template that individuals impose on information to give it form and meaning” (Walsh, 1995: 281). In such a way strategic cognition develops. Strategy researchers try to map cognition or strategic belief sets as a tool in understanding the process of strategy making by looking at its consensus among actors and among industries.

3.3.2 Mapping of cognition: methods and instruments

Measuring cognition is not an unambiguous issue. Although strategy literature contains a large amount of papers addressing the cognitive aspect in strategy making (see for extensive overviews Huff, 1990; Walsh, 1995) its operationalization is still limited and not unambiguous. Precise definitions of what cognition is are absent and there is yet no well accepted set of metrics for measuring managerial cognition. Strategic cognition may be relevant for different questions and as a result has been operationalised in many different ways. Empirical studies have addressed fundamental cognitive structures underlying strategic thinking, f.e. Jouini and Napp (2009) distinguishing optimistic versus pessimistic beliefs and overconfidence versus doubts. Tripsas and Gavetti (2000) relate cognitive mapping to beliefs on what drives a companies’ strategy: is it technology driven or market driven, based on a deep strategy analysis or more ad hoc, based on
choice (first mover) or compliance (following industry trends). But most empirical studies analyse strategic beliefs related to very specific situations (Thomas et al., 1993; Cheng and Chang, 2009) or map beliefs about the external environment (Sutcliffe and Huber, 1998).

For our aim of this study which is analysing the value of considering the strategic cognition of the PA executive as an explanatory variable in PA strategy making, we search for a measurement tool that fits the following criteria: 1) the measurement tool should measure the strategic cognition that is related with strategy formulation: the beliefs behind the strategic process of the formulation of the strategies, 2) The measurement tool should not be industry specific, but sufficient generic to make comparisons between different industry segments possible, 3) The measurement tool must have been applied and tested in a general firm context.

Having analysed the literature on mapping of cognition and strategic beliefs we identified the measurement tool as developed by Meyer in 2007 in an academic research for evaluating the strategic mind set of PA executives as a specific industry group as a useful approach. This tool measures strategic beliefs as they apply to strategy formulation; the tool is not industry specific; the tool is quantitatively tested and applied. The strategic beliefs that Meyer develops in his construct are directed towards how strategy is formulated rather than the actual strategy itself. For example, the questions address whether strategy builds on opportunities in the external environment or builds on internal competencies (positioning versus resource based view) rather then what are opportunities in the external environment. Therewith the measurement tool can be applied to a broad spectrum of organization types. Moreover the tool was extensively empirically tested on more than 300 executives, mostly from ‘for profit’ companies. This provides the opportunity to assess the outcome of our empirical research among PA executives with a selected reference group of executives from for-profit firms.

Core to Meyer’s methodology is a set of dimensions or paradoxes, derived from a vast review of strategic management theories, along which strategy perspectives of executives can differ. The paradoxes each relate to existing strategy perspectives either on strategy process, on strategy content or on strategy context, e.g. the three main building blocks of strategy (Pettigrew and Whipp, 1991; De Wit and Meyer, 2004; Meyer, 2007). Table 5 summarizes the tool.
<table>
<thead>
<tr>
<th>Strategy Topics</th>
<th>Strategy Paradoxe Explanation</th>
</tr>
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<tbody>
<tr>
<td>Strategic thinking</td>
<td>Logic versus Creativity sets rational reasoning against generative reasoning. At the rational side strategy is seen as science whereby logic is more important than creativity and analysis is a key driver. At the generative side strategy is seen as an art whereby creativity is more important than logic and intuition is a key driver.</td>
</tr>
<tr>
<td>Strategy formation</td>
<td>Deliberateness versus Emergence sets strategic planning against strategic incrementalism. At the planning side strategy is intentionally designed whereby deliberateness is more important than emergence. At the incrementalism side strategy is gradually shaped for a partially unknown and unpredictable future and emergence is more important than deliberateness.</td>
</tr>
<tr>
<td>Strategic Change</td>
<td>Revolution versus Evolution sets a discontinuous renewal perspective against a continuous renewal perspective. At the discontinuous renewal side revolution is chosen over evolution and strategic renewal is radical, comprehensive and dramatic. At the continuous renewal side evolution is chosen over revolution and strategic renewal is moderate and undramatic.</td>
</tr>
<tr>
<td>Business level strategy</td>
<td>Markets versus Resources sets an inside-out or resource based approach against an outside-in or market opportunities approach. At the inside-outside strategy focuses at building the right competence base and puts an emphasis on resources over markets. At the outside-in strategy focuses at external positioning and it emphasize markets over resources.</td>
</tr>
<tr>
<td>Corporate level strategy</td>
<td>Responsiveness versus Synergy sets a portfolio organisation with large autonomy for the different units against an integrated organisation with less autonomy for the different units. At the portfolio side strategy is shaped within the individual units with a strong focus at the individual unit. Emphasis is put on individual responsiveness and responsibility over synergy and shared responsibility. At the integrated side strategy is shaped from the core focusing on synergy and integration.</td>
</tr>
<tr>
<td>Network level strategy</td>
<td>Competition versus Cooperation sets a discrete competitive organization against an embedded cooperative organization. At the discrete side competition is chosen over cooperation and the organization is seen as a highly individual operating entity with an independent position. At the embedded side cooperation is chosen over competition and the organization is seen as an open embedded entity with an interdependent position. Inter-firm relations are close and structural.</td>
</tr>
<tr>
<td>Industry context</td>
<td>Compliance versus Choice sets industry dynamics against industry leadership. At the industry dynamics side the firms has limited room for changing the rules. Strategy is a matter of finding a fit with the environment and convergence to the dominant design. At the industry leadership side emphasis is put on choice over compliance. Strategy deals with creating a fitting environment and the firm is seen as able to change the rules.</td>
</tr>
<tr>
<td>Organizational context</td>
<td>Control versus Chaos sets leadership and control against dynamics and chaos. In the leadership perspective there is clearly a visible hand and leaders shape in a top-down process new behavior. The organization follows the strategy. In the dynamics or chaos perspective there is no visible hand. The development of an organization is an uncontrollable evolutionary process. New behavior emerges from interactions. The strategy follows the organization.</td>
</tr>
<tr>
<td>International context</td>
<td>Globalization versus Localization sets a global convergence perspective against an international diversity perspective: do executives believe that the international context is moving towards increased similarity and integration or do they think that it will remain fragmented and divers?</td>
</tr>
<tr>
<td>Organizational purpose</td>
<td>Profitability versus Responsibility sets stakeholder value against shareholder value. At the stakeholder value side responsibility is chosen over profitability: it is the purpose of the business organization to pursue profitability on behalf of their owners rather than to serve the interests and promote the values of all of their stakeholders in a balanced way.</td>
</tr>
</tbody>
</table>

Source: Meyer, 2007
Meyer’s operationalization of the tool was done by a survey constructed based on the ten dimensions for strategic thinking as are listed in the Table 5. The survey contains 5-7 survey items for each side of the dimension, except for the scale “emergence that has only 4 items. This totals 20 sets of items. The items can be scored on a scale from 1 to 5 (not at all agree, slightly agree, agree, very much agree, totally agree).

From the dataset as collected by Meyer (2007) we selected a set of responses of Executive Directors coming from a global mix of private companies. In our further analysis we call this ‘regular’ executives or executives of ‘regular’ firms. This resulted in 125 responses. The means of the set of respondents out of the research of Meyer show the following pattern (Figure 2)\(^4\).

![Figure 2: Mean Score of Executives of Set of ‘Regular’ Firms (N=125)](image)

These scores form the reference score against which our specific research among PAs will be assessed.

An analysis of the relevance of the above issues for PAs learnt the following:

1. The paradoxes logic/creativity, deliberate/emergence, revolution/evolution, competition/cooperation, compliance/choice, control/chaos and profitability/responsibility seemingly match the case of the PA. Individual items in these scales are also meaningful questions for PAs, as these are sufficiently generic (for an overview of the items in the scales, see Appendix 3.1).

2. The paradoxes responsiveness/synergy and globalization/localization do not fit the case of the PA. Responsiveness/synergy assumes the organization model with business units and headquarters, a model that is not to be found among PAs. Globalization/localization relates to

\(^4\) Meyer tested successfully for internal consistency of the scales and for negative correlation between the two sides of each of the dimensions.
the multinational company which is also an organizational model that in general does not fit the PA\(^5\).

The analysis of the strategic mind of the PA’s executive will thus be done by using eight out of the ten paradoxes of Meyers’ tool.

### 3.4 PA’s executives and their cognitive maps

PAs increasingly become more business like organizations. However they have some specific characteristics and operational contexts that might lead to different strategic cognitions compared to the reference set of ‘for-profit firms’. Based on the industry characteristics we define propositions for the score of PA’s executives on the dimensions for strategic thinking, compared with ‘regular firms’\(^6\).

**Scope of PA’s executives’ strategy making**

PA’s executives define strategies both for the port as a whole as for their own organization. For example the Port of Rotterdam has developed a strategic document for the port - the Port Compass, vision document up to 2030 - but also develops a Business Plan for the organization itself. The strategy for the port contains the positioning of the port, its challenges in terms of competition, environmental pressures, societal pressures and the development directions for the whole port complex and the port networks. Such strategies encompass the whole set of actors that are involved in the port product, i.e. the private port companies but also government entities such as municipalities and customs organizations. The strategy for the organization itself focuses on the specific role of the PA in this overall port strategy: the focus and scope of its activities and investments.

**Strategy process**

The strategic actions of PAs traditionally build on strategic planning (Frankel and Ernst, 1989; Ircha, 2001; Dooms, et al., 2013). This is related to the core function of many PAs as port developer, and a consequent focus on such issues as nautical access and port infrastructure (quay walls, roads, railroads). These issues require careful long term planning as investments are huge and infrastructure development periods generally are relatively long, partly because of the large influence of various stakeholders. In relation to this it can be argued that PAs develop more analytical approaches and deliberateness in their strategic routines than executives of regular firms.

For the cognitive dimensions on the strategy process we expect the following for the PA:

\(^5\) Port of Rotterdam and Port of Antwerp have equity stakes abroad and thus can be seen as multinationals. However such a model has not yet further developed among other port authorities.

\(^6\) Although we recognize the impact of institutional and cultural differences coming from different national cultures (Hofstede, 1994) and national institutional environments (Scott, 1995) on the characterization of PAs, we here try to come up with a general characterization of PAs from a more functional and operational perspective.
Proposition 1: PA’s executives put more weight on logic than on creativity in their strategy making process than executives of the ‘regular’ firm.

Proposition 2: PA’s executives believe, compared to executives of the regular firm more in deliberate processes than in emergency-led processes.

Proposition 3: PA’s executives think more in terms of evolution than of revolution than executives of the ‘regular’ firm

Strategy content
Ports consist of a bundle of physical assets and resources: land plots adjacent to maritime and inland connections, deep draft access channels, roads, railways, river facilities. These facilities are naturally geographical bound and as such not foot loose. The main goals of PAs are to develop and manage the assets as to – together with operators and service providers - provide for an attractive port product. PAs have therefore a strong focus on resources. We expect PA’s executives to be constrained in exploring new market opportunities by the geographical location and infrastructure assets of the port. Thus, executives may focus more on their ‘hard’ resources than on new markets for which they can develop new services.

Proposition 4: PA’s executives think more in terms of resources and capabilities than in terms of markets then executives of the ‘regular’ firm do.

PAs are entities that compete with other PAs, sometimes with inland authorities for investments of industries that can be both located in the port as in the hinterland. At the same time PAs depend on the companies in the port and also on the overseas and inland links in the ports’ related transport system. Thus on one hand PAs pursue competition; on the other hand there are clear reasons why they would cooperate: strengthening the wider transport system they form part of; cost advantages by achieving synergy; strengthening their position in the network (McLaughlin & Fearon, 2013; Donselaar and Kolkman, 2010). PA’s executives therefore might not give clearly more weight to competition than cooperation or vice versa then ‘regular’ executives do.

Proposition 5: PA’s executives do not differ from ‘regular’ executives in their thinking on the dimension competition versus cooperation.

Strategy context
Landlord PAs, the most common institutional form (Baird, 2000), have a specific position in the value chain. Their functional domain is constrained by the fact that private companies are responsible for the operations and services, both within the port as into the hinterland (see work on port governance by Baird, 2000; Brooks, 2004; Ng and Pallis, 2010). For public and private service ports this is different as they might be involved as well in operations and services. Because of this specific function in the port’s value chain, landlord PAs are restricted in their strategy making and restricted in their ability to change their environments, especially at an individual basis. Due to this position we argue here that PA’s executives rather seek compliance
to external developments than influencing/shaping external developments as to better fit their strategic position and that they do this more than regular firms do.

**Proposition 6:** PA’ executives think more in terms of compliance then in terms of choice compared with executives of the ‘regular’ firm.

PA organizations come from a public background or are still governmental organizations. Although being subject to changes under New Public Management influences, governmental organizations are still characterized by more hierarchical, bureaucratic and top-down processes, with more political influences and formal procedures for decision making (Boyne, 2002; Andrews et al., 2011). As Rainey et al. (1976, p. 238) noted, ‘the coercive nature of most government actions might be cited as a fundamental justification for constitutional checks and balances and extensive formal control mechanisms’. And although PAs are rather hybrid organizations, combining both public and private characteristics (Van der Lugt et al., 2013) their public background might have provided them with this impulse to more formal control. Thus PA’s executives might view their organizational context in which strategy is formulated and implemented more as a structured and controlled environment than as a chaotic environment.

**Proposition 7:** PA’s executives think more in control than in chaos, relative to executives of ‘regular’ firms

Ports are of public interest: they are important enablers of regional economic growth and besides, ports have negative impact on their civil environment with which they are in close relationship. Ports are often located close to metropolitan areas where people live and work. As ports generate negative external effects and as port development is subject to public approval, the ‘licence to operate’ is a very crucial issue for PAs (De Langen et al., 2007). Stakeholder management is often mentioned as one of the core functions of landlord PAs (De Langen, 2008; Dooms et al., 2013). On the other hand due to its public background profit maximization or profit optimization has traditionally not been a key goal for PAs. Thus we expect that PA’s executives show a stakeholder orientation rather than a shareholder orientation, valuing responsibility over profitability.

**Proposition 8:** PA’s executives think more in terms of responsibility than in terms of profitability, compared with executives of the ‘regular’ firm.

### 3.5 Empirical analysis

#### 3.5.1 Data and method

The empirical data of this research is achieved through a survey of PAs. The survey is based on the measurement tool of Meyer. The two main aspects that are questioned in the survey are the strategic beliefs of the PA’s executives and the institutional structure of the PA organization. The dimensions in Meyers’ measurement model are in the same way operationalised as in Meyers’ analysis by the set of items for each side of the dimension, which we then quantitatively tested
among PA’s executives through an online survey. The questions on the institutional structure of
the PA aim at distinguishing PAs with a more governmental character from PAs with a more
business like character. Other questions in the survey concern contextual information on the
organization and the respondent\(^7\).

We developed a set of 445 PAs, representing the largest ports worldwide. PAs were included in
the send list if they met the following criteria:
- Minimum throughput of 2 million tons or 200,000 TEU, or the largest port in a country.
- Presence of independent terminal operators, thus, full service ports are excluded.
- Port has multi-user objective: single user ports are excluded.

With these criteria, we developed a list of PAs based on information from the World CIA Fact
book (in which the major ports in the world are listed) and descriptive information on the ports
by the Port World Source (www.worldportsource.com).

Contact information of the ports’ executives was obtained through ESPO, the European
Seaports Organization, representing European PAs and IAPH, the International Association for
Ports and Harbours representing PAs at a global scale and websites of specific PAs. The survey
was sent in hardcopy and through e-mail, with a personal invitation letter, supported by ESPO
and IAPH. Respondents could either fill out the survey online or in hardcopy.

65 valid responses were obtained, out of the 445 PAs the survey was sent to, after removing
responses that were only partly filled in, responses without information on the respondent (these
responses showed for the larger part huge inconsistency) and responses made by managers other
than executives involved in the strategic decision making. This means 15% response rate on the
total set send out. However, the list of respondents shows that only executives of PAs from
developing (non-OECD) countries responded. If we take the set of only OECD countries then
the response set represents 25% of the total set of selected major PAs in these countries.

### 3.5.2 Validity of measurement construct

The measurement construct initially consisted of 5-7 items per scale, except for two scales,
“creativity” and “deliberateness” having respectively 4 and 5 items. First step in the analysis was
to test whether the measurement construct used also fitted the set of respondents for this PA
focused research. We analysed the consistency of the scales, using Cronbach’s alpha. We
dropped a few items that showed very low consistency in the scale, leaving for each scale at least
4 items. Factor analysis based on a polychoric correlation table of the scores was further used to
test the strength of the measurement construct\(^8\). Except for two scales - markets and compliance
-, all scales in the tool showed sufficient internal consistency for further analysis (Cronbach’s
alpha were 0.6 or higher, see Appendix 3.2). The scale for markets had an alpha of 0.51 and the
factor analysis for this scale resulted in two factors. The scale for compliance had an alpha of

\(^7\) We stressed the importance of an executive filling in the survey and finally removed those responses that
were not filled in by an executive

\(^8\) We used polychoric correlation table because of the ordinal character of the data
0.53 which is rather low. The two scales “markets” and “compliance” were treated with more care in the further analysis. We also checked the presence of negative correlation between the two scales forming the dimensions, indicating the indeed paradoxical character of the dimensions (see also Appendix 3.2).

### 3.5.3 PA’s executives’ cognition along eight dimensions

Figure 3 shows the comparison of the results of the set of PA’s executives with the reference set. For the 65 respondents the average score on the eight dimensions can be represented as in the figure below. The deviation from zero indicates a tendency towards one side of the ‘paradoxical’ beliefs. The difference with the average scores of the set of mixed companies provides insight in the extent to which the PA’s executives’ scores on the dimension are typical for PAs and distinguish them from executives of ‘regular’ organizations.

![Figure 3: Comparing PAS (N=65) with mixed set of private companies (N=125)](image)

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### 3.5.4 Discussion of results

The results show that PA’s executives broadly follow the same pattern as the regular executives. But there are some clear differences. T-tests (see Appendix 3.3) show that the scores on the dimensions logic/creativity, deliberate/emergence and markets/resources differ significant between the group of PA’s executives and the ‘regular’ group of executives. This leads to the following results:

Proposition 1 and 2 are confirmed. PA’s executives significantly think more in terms of logic compared to creativity than ‘regular’ executives do and they significantly think more in terms of deliberateness compared to emergence than ‘regular’ executives do. This can be related to their long term planning processes.

Proposition 3 is not confirmed. PAs do not think significantly more in terms of evolution compared to revolution than ‘regular’ executives do, while the expectation was that because of long term infrastructural development processes with large investments involved evolution would be weighted significantly over revolution.
Proposition 4 is also not confirmed. Here a significant difference showed, but in opposite direction to what was expected: We had expected that PAs would think more in terms of resources compared to market opportunities than ‘regular’ executives do, but the results show that it is the other way round. Argument could be found in that although PAs are resource driven this relates only to their physical resources. Broadening their view on their market scope and looking internally what hard and soft resources and capabilities they have to step into new possibilities is not yet common to PAs.

Proposition 5 is confirmed in that we stated that we do not see any reason why PAs would think more in terms of cooperation compared to competition than ‘regular’ executives do.

Proposition 6 is not confirmed. PAs do think more in terms of compliance than choice compared to ‘regular’ executives, but not as much as was expected, e.g. the result is not significant.

Proposition 7 and 8 not confirmed. PAs do not significantly differ in how they think on the dimension control versus chaos compared with ‘regular’ executives and they do also not significantly differ in how they think on the dimension profit versus responsibility.

Based on these results we draw a couple of tentative conclusions. In the first place PA’s executives seem not to very much differ from ‘regular’ executives in their strategic beliefs underlying their strategy formulation. Second, the fact that PAs operate in a long term planning environment seemingly impact their executives’ thinking about the strategy making process. A third conclusion is on the dimension compliance versus choice. The observation that PA executives do not think significantly more in terms of compliance than choice compared with executives of ‘regular’ firms, is against our expectations. Due to their position the strategic freedom of PAs is rather limited (Goss, 1990; van der Lugt et al., in press). This could indicate a bias in the responses by the PA’s executives expressing a preference for showing strong leadership, or more serious, that PA’s executives rather overestimate the freedom they have in their decision making and the potential influence they have on their strategic environment, i.e. the leadership role they have for port development.

3.5.5 Impact of institutional structures of PAs in sample

Besides comparing the results of PAs with a set of regular firms to see to what extent PA’s executives’ cognitions differ, it is also interesting to compare within the set of PAs the group of more public PAs with the group of more private PAs. Although almost all PAs have undergone institutional reform, there are still substantial differences between PAs from an institutional perspective. There are PAs that are quite under control of governmental bodies subject to political influence and there are PAs that are corporatized or even privatized and as a consequence act based on more business like principles. Research has shown that more privately organized ports put more weight on firm level goals than on public goals and their strategic scope is wider, both functionally as geographically than more public organized PAs (Van der Lugt et al., in press). We expect that his will have an influence on their strategic cognition.
PAs that are corporatized or privatized have executives and also commissioners that more often come from private background (empirical analysis has shown a correlation between corporatization and private composition of board of commissioners, see Van der Lugt et al., in press). There is a great chance that these actors have developed their strategic thinking in a different context than the executive with a vast governmental background.

Based on the different contexts between more governmental and more business alike PAs we expect some differences in the strategic beliefs of executives of more governmental PAs relative to executives of more business alike PAs. In an explorative way we check for this by comparing the means of the group of privatized/corporatized PAs with the PAs that are governmental bodies. Figure 4 gives the results.

FIGURE 4: CORPORATIZED/PRIVATIZED PAS (16) VERSUS NON-CORPORATIZED PAS (49)

A t-test for comparison means between groups shows that the dimensions where the groups show significant (at the P<0.05 level) differences in means are: deliberate/emergence and profitability/responsibility (see results of t-test in Appendix 3.4).

A possible argument for the difference between the groups on the dimension deliberate/emergence is the fact that more governmentally organized PAs are subject to political influences, which can have an “emergency” like character. The deliberateness of PA’s executives might be undermined by the political influences, while in a more business like context PAs are acting in a more stable institutional environment. Another possible argument is that executives of more businesslike PAs are more aware of the fact that investments should be earned back with a positive result at the long term, which requires more careful forecasting and consequent planning.

The most striking result is the difference between more governmental PAs and corporatized or privatized PAs on the dimension profitability/responsibility. As such the fact that executives of more business like PAs think more in terms of profitability than PA’s executives that are acting in a more governmental context, was expected. However the fact that the executives of private/corporatized PAs think much more in terms of profitability then the general industry average, i.e. the ‘regular’ executive (see Figure 3), is remarkable: corporatized/privatized PAs may
exaggerate in ‘profitability thinking’ at the expense of attention for responsibilities towards other stakeholders. This is an interesting observation that feeds into the discussion on the privatization of PAs (Baird, 1995; Everett and Robinson, 2007). Everett and Robinson for example (2007) ends their research paper on port reform in Australia - analysing why objectives of corporatization of Pas were not being realized - with the question if privatization of PAs is a more effective model for improving port performance. Our analysis brings up a critical consideration for privatization: the risk that privatized PA executives will think more on behalf of their shareholders than on behalf of their stakeholders.

3.6 Discussion and conclusions

A changing institutional and market context has caused an increased attention for PA strategies in practice and in academic literature. A review of research contributions has shown that among these contributions outside-in approaches are dominant: changes in the institutional and market contexts are seen as drivers for a strategic reorientation of PAs. Inside out approaches, taking the organization’s attributes as a starting point for their strategic decision making rather than the organization’s external context, are virtually absent, although such inside out approaches are well-established in strategy research in general. This paper applied a particular inside out perspective on PA strategy analysis and concentrated on the cognition of the strategy maker, i.e. the PA executives, involved with the bow of strategy. Identifying and applying a mind mapping tool that was developed by Meyer (2007) allowed us to measure the strategic beliefs of PA executives and to compare these with the beliefs of executives of ‘regular’ firms, e.g. private- for profit firms, acting in a market environment. The results from the survey also allowed us to compare the beliefs of PA’s executives that act in a more governmental context with those acting in a more business like environment. The main results from the empirical analysis are:

- On most dimensions PAs show similar patterns in the strategic beliefs of their executives as regular firms, but there are some differences indicating that PAs do not completely resemble ‘regular’ firms. Significant differences are on the dimensions logic/creativity, e.g. PA’s executives think substantially more in terms of logic than in terms of creativity compared with executives of the ‘regular’ firm; on the dimension deliberateness/emergence, e.g., PA’s executives think more in terms of deliberateness than in terms of emergence and on the dimension market versus resources, e.g. PA’s executives think more in terms of market opportunities than in terms of their resources and capabilities while formulating new strategies.
- Executives of more business like PA’s tend to think more in terms of profit then executives of more governmental PAs do, which is conform our expectation. Striking is the fact that the group of executives from the businesslike PAs think even more in terms of profit than executives of the ‘regular’ firms do.
- PA’s executives think more in terms of choice then in terms of compliance.

These results lead us to the following conclusions and considerations:

1. This first attempt to involve a cognitive approach into the research stream that focus at the strategy of PAs has shown its relevance. We have observed that PA’s executives in their thinking
to a large extent resemble ‘regular’ executives. At the same time we see some differences underlining the - at some point specific - strategic context in which PAs operate. Especially the long term planning background of PAs seems to influences their strategic thinking, resulting in thinking more in terms of logic, analysis and deliberateness than in intuition, creativity and emergence. This potential difference implies a careful consideration of the PA as a specific organization in applying generic concepts from strategy research and interpreting its results. This also underlines the need to give more emphasis to inside out approaches in PA strategy research, whereby the organization’s attributes are taken as starting point for their strategy making.

2. The observation that PA’s executives acting in a businesslike context significantly think more in terms of profit as opposite to responsibility than ‘regular’ executives do shows that there is a risk of losing the responsibility orientation while corporatizing or privatizing PAs. The answers on the questions in the survey do not per se indicate that PA executives actually see this profit maximization goal for their own organization, but we can argue that if executives of PAs start seeing their organization as a ‘regular’ firm the focus in their minds on revenues and profits could become of excessive nature. This once again underlines the need for accompanying PA reform with monitoring and controlling frameworks as to safeguard this responsibility orientation. PAs keep on having their responsibility towards their stakeholders as ports have public interests more than regular firms. But while ‘regular’ firms over the years adopt more corporate social responsibility, becoming more ‘shared value organizations’ (see Porter and Kramer, 2010), PAs transforming from more public into business like organizations run the risk of exaggerating their profit focus, while they are still responsible for port related public interests. This provides a serious consideration once discussing privatizing PAs and asks attention for appointing the right executives, representing also the stakeholder’s interest and for building the proper frameworks to guide their operations.

3. The observation that PA’s executives in general think more in terms of choice than compliance implies that PA’s executives might overestimate their ability to show real industry leadership and also overestimate their ability to change their strategic context. In our view PAs are rather reactive to their environments and have limited ability to influence this. Overestimation of the own role, might be risky, especially in a strategy context in which there is strong interrelationship and interdependency with other actors (Hall and Jacobs, 2010; Van der Lugt et al., 2014).

Our review of PA strategy research and our consequent empirical analysis has shown that there is a need for bringing in inside-out approaches in the analytical base for PA strategy analysis. Taking the organization’s attributes as a starting point for strategy analysis allows for the application of already developed concepts in strategy research. At the same time zooming in on the PA’s specific attributes and characteristics brings nuance to the way in which generic concepts can be applied and interpreted.

Limitations of the study
This first attempt to introduce strategic cognition as a variable in explaining PA strategy approached cognition rather generic by focusing at the process of strategy formulation. We argue
that there is value to gain in further developing this approach, also considering the beliefs about the more concrete *what* of the strategy itself: the specific strategy context and content.

The research was done globally and the empirical results represent PA executives from different regions and countries in the world. Strategic beliefs are not only influenced by the specific organizational characteristics and the organization’s past, but also by the wider environment. Aspects as country specific culture are also of influence (Meyer, 2007; Hofstede, 2011). Because of data limitation additional statistical analysis on the potential influence of cultural background on the strategic beliefs has not been done here. Overall the study could gain from availability of a larger dataset: this would strengthen reliability of observations and tentative conclusions and would provide possibility for more in-depth analysis.

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