

Strategic beliefs of port authorities

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Strategic beliefs of port authorities

Larissa M. van der Lugt^a, Peter W. de Langen^b and Lorike Hagdorn^c

^aUrban Ports and Transport Economics (RHV BV), Erasmus University Rotterdam, Rotterdam, The Netherlands;

^bDepartment of Operations Management, Accountancy and Control, Eindhoven University of Technology,

Eindhoven, The Netherlands; ^cDepartment of Information, Logistics and Innovation, VU Amsterdam, Amsterdam, The Netherlands

ABSTRACT

Over the last decade, insights from the strategic management discipline have increasingly been applied to ports. A review of literature shows that in the analysis of port authority strategy, mainly outside-in approaches are applied. This paper adds to the emerging understanding of the port authority's strategy by applying a cognitive perspective. Specifically, the strategic cognition of firms' executives is one of the explanatory variables behind firms' strategic decisions. Furthermore, cognitions are influenced by the organisational contexts in which port authority 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 global set of port authority executives through a survey-based instrument. The results show that, to a large extent, PAs resemble "regular" for-profit companies, but that they possess some specific beliefs that distinguish them from "regular" companies.

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1. Introduction

Port authorities (PAs) are the organisations responsible for a competitive, sustainable and safe development of seaports (Chlomoudis & Pallis, 2004; de Langen, 2004, 2008; Notteboom & Winkelmanns, 2001). Seaports have increasingly been subject to the involvement of private companies. Globally, many PAs have evolved to a landlord type of organisation, whereby private companies are responsible for the commercial operations in ports.¹ Such 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, Doms, & Parola, 2013, p. 4).

PAs face changing external environments. Their customers globalise and increasingly integrate, supply chain requirements change and environmental pressure and scarcity of spatial resources increase. In addition, PAs are subject to institutional reform and

CONTACT Larissa M. van der Lugt  vanderlugt@ese.eur.nl  Erasmus University Rotterdam – RHV, Burg. Oudlaan 50, 3062 PA Rotterdam, The Netherlands

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held increasingly accountable for their performance from an economic, financial and societal perspective (Verhoeven, 2010). Consequently, the management teams of PAs have begun devoting greater attention to strategy development in order to cultivate new business models (Hollen, Van Den Bosch, & Volberda, 2013) and widen their strategic scope (van der Lugt, Rodrigues, & Van den Berg, 2014; Verhoeven, 2010).

In reaction to these developments, researchers have applied insights from management disciplines, such as strategic management, human resources management (HRM), environmental management and information and knowledge management to ports (Woo, Pettit, Kwak, & Beresford, 2011). But although recent studies have stressed the value of applying theoretical concepts and research models that are used in strategy and management to further understand and unravel PAs' strategic decisions, a comprehensive analysis of literature on ports by Pallis, Vitsounis, De Langen, and Notteboom (2011), conclude that there is still limited attention for strategies of PAs. And an approach that has not yet been applied at all to the context of PAs' strategy making is the cognitive perspective. In the last three decades, the cognitive perspective has developed into a well-established lens in strategy and organisation studies (Kaplan, 2011; Narayanan, Zane, & Kemmerer, 2011). The cognitive approach, with its roots in cognitive psychology, is used by the field of organisational behaviour to substantiate/inform the strategic choice approach (see Beckert, 1999; Child, 1972). In contrast with the other main view, *external control*, in which strategic decisions are thought to be deeply constrained by the external environment, the strategic choice view emphasises that a manager's choices can drive strategic action (Nadkarni & Barr, 2008; Hambrick & Mason, 1984). Daft and Weick (1984) argue that "strategic action is influenced by how managers notice and interpret change and translate those perspectives into strategic choices". Thus, the academics who advocate the cognitive approach argue that giving insufficient attention to cognitions significantly limits our understanding of strategic decision-making (Hitt & Tyler, 1991; Johnson, 1992; Stubbart, 1989; Porac & Thomas, 2002). As a result, the strategy literature contains a large number of papers addressing the cognitive aspect in strategy making (see, for extensive overviews, Hodgkinson & Healey, 2008; Huff, 1990; Kaplan, 2011; Walsh, 1995).

In this paper, we review the relevance of cognition to the study of PAs' strategies. To this end, three main characteristics of the cognitive perspective need to be distinguished. First, cognitive processes are influenced by the context in which executives and their organisations are embedded; as a result, managerial perceptions may vary across industry contexts (Sutcliffe & Huber, 1988), as well as between organisations of different institutional structure. Dearborn and Simon (1958) found that when a group of executives from different functional areas was presented with the same problem (a case study) and asked to consider it from a companywide perspective, they defined the problem largely in terms of the activities and goals of their own areas. Second, cognitive representations are typically based on historical experience as opposed to complete current knowledge of the environment (Tripsas & Gavetti, 2000). Reason for this is in the limited competence of decision-makers to fully understand and incorporate all relevant aspects and dynamics in a complex decision context (Hambrick & Mason, 1984). Thus, each decision-maker brings his or her own set of 'givens' to an administrative situation. This is particularly consequential in sectors undergoing serious transformation, as executives might make decisions based on past successes achieved in a context that is no longer relevant. One example is the inertia that Polaroid experienced at the end of the 1980s.

Although Polaroid's "razor blade" business model proved to be successful in the traditional imaging market, its application in the digital imaging market did not meet similar success (Tripsas & Gavetti, 2000). Another example is brought forward by Hambrick and Mason (1984) arguing that banking regulations require bank presidents to have significant banking experience. This serves to tighten the circle of who can be considered for a top post, thus eliminating much of the variance in career experiences of bank presidents. Third, strategic cognitions exhibit a high level of rigidity, that is, people are not inclined to change their minds (Baron, 2004; Meyer, 2007). Considering PAs, these are institutional organisations of a specific nature that have undergone substantial reform in previous decades. PAs have their roots in public administration, but have morphed in recent years into more autonomous organisations that are financially self-sustaining. Thus, PAs are often "hybrids" in the sense that they have public and private goals. Furthermore, they act in a competitive environment, but often (partially) depend on government funding. In previous decades, the general movement has been towards the commercialisation, corporatisation and even privatisation of PAs (Verhoeven, 2006). This reform has given PAs more strategic freedom and changed their strategy-making context in terms of goals, mandates and accounting principles (van der Lugt, de Langen, & Hagdorn, 2015). As strategic cognition is largely determined by past experiences, we propose that PAs' executives have specific strategic cognitions that influence their strategy making; furthermore, this factor should be added to the analytical perspectives applied in port authority strategy research. In this research, we empirically measure the strategic beliefs of PA executives and interpret the outcomes, relating them to the specific institutional nature of the PAs.

The chapter is structured as follows: Section 2 gives a review of the insights from the literature regarding port authority strategy. Section 3 explains the relevance of the cognitive perspective in strategy research and describes the measurement that was selected for this research. Section 4 presents the results of our quantitative analysis among a large set of managers from port authority organisations worldwide. The section concludes in Section 5 with a discussion of the results.

2. Perspectives on analysing port authority strategies: a review

The strategic orientation of the port authority has been addressed from different perspectives. Concepts from strategic management research are increasingly brought into the field of port management studies (Woo et al., 2011), although there are still many untapped research opportunities (Haugstetter & Cahoon, 2010).

A vast amount of literature on the position and strategy of the port authority takes an institutional perspective and focuses on the port administration model, in which the division of responsibilities over public and private actors is key (Baird, 1995, 2000; Baltazar & Brooks, 2007; Chen, 2009; Goss, 1990; Wang et al., 2004; Worldbank, 2007). The resulting models have helped to structure the thinking about governance in ports, as well as the position and role of the port authority. However, the theoretical models do not cover the complete range of port authority governance in practice (Brooks & Cullinane, 2006). Subsequent work on changes in the port administration model (see de Langen & Heij, 2014 for a recent overview) has shown that many ports have undergone a transition towards 'a port industry where a publicly owned landlord PA operates as a commercial undertaking and with an appropriate regulatory framework in place' (de Langen & Heij, 2014, p. 399). But although

port governance structures have been analysed thoroughly and in many countries, limited attention is paid to the specific port authority strategies (Pallis et al., 2011).

A limited set of publications, starting with Goss' (1990) seminal article 'Strategies for Port Authorities', does focus on port authority strategies. Goss (1990) identifies four strategies that PAs can follow: (1) being a minimalist port authority and letting the private sector control all cargo handling functions, (2) imposing some ad hoc control on the private sector, (3) actively introducing competition by means of well-developed concessioning policies, (4) keeping everything in public hands. Note that these "strategies" are not really strategies in the sense of "a plan to achieve a certain goal/mission", as the underlying goals of these four strategies are different. Moreover, Goss' (1990) approach is limited by its focus on the relation of the port authority with the cargo handling business. Indeed, following this seminal paper, a substantial body of research has addressed the issue of concessions in ports (see, for example, the special issue on Concessions in Maritime Policy and Management, eds. Notteboom, Pallis, & Farrell, 2012). Through concession policy, PAs can retain some control on the organisation and structure of the supply side of the port market and can encourage port service providers to optimise the use of scarce resources. Seeing ports rather as a complex of multiple economic activities (Bichou & Gray, 2005; de Langen & Haezendonck, 2012) allows for a more encompassing analysis of port authority strategies. de Langen (2004), for instance, focuses on the governance of the whole port cluster and describes a potential role for a port authority: the so-called cluster manager. This role is based on the notion that the port authority addresses collective action problems in the port cluster. de Langen's (2008) analysis shows that the port authority is in the right position to develop "collective action regimes" by acting as a cluster manager – for example, in ensuring hinterland access (de Langen, 2008). Subsequent research argues that PAs, driven by increased financial accountability and autonomy as a result of institutional reform, might even go beyond the role of a cluster manager, expanding their strategic scope (Lugt et al., 2015) and changing their business models (Hollen et al., 2013) by developing entrepreneurial activities and broadening their operational domain internationally (Dooms, Verbeke & Haezendonck 2013; Verhoeven, 2010). Investigating empirically the strategic orientation of PAs worldwide, van der Lugt et al. (2015) conclude that PAs indeed change their role and develop new strategies: they develop activities that go beyond a pure landlord role with less focus on operations and direct investments, but more focus on strengthening the port cluster and its hinterland connectivity. PAs showing a reform towards more autonomous and business-like organisations actively broaden their scope, while PAs with a more traditional and government-oriented character keep their activities more limited to their facilitating goal (van der Lugt et al., 2015).

Other studies consider the strategy of the port authority in relation with other players in the port complex. Dooms and Verbeke (2007) apply a value chain concept to emphasise the relevance of stakeholder management as one of PAs' strategic activities. Later, Dooms et al. (2013) apply a stakeholder perspective to the Port of Antwerp, arguing that port planning is a path-dependent process partly shaped by the way in which it is dealt with the relevant stakeholders. The study by Denktas-Sakar and Karatas-Cetin (2012) identifies the influence of supply chain stakeholders on the sustainability of ports which is one of the key goals in port management. Meanwhile, Hall and Jacobs (2010) elaborate on the proximity between actors from both a geographical and an organisational perspective.

In their paper, they stress the importance of PAs positioning themselves with the right distance towards port actors – connected, but not too closely interrelated. Following Child, Rodrigues, and Tse (2012), who introduce a co-evolutionary approach to port management, van der Lugt et al. (2014) conclude that the strategic reorientation of both port authority and terminal operator towards their hinterland follows a co-evolutionary process due to their interdependency.

Another set of papers, relating to the PAs' strategic behaviour, apply a *strategic* outside-in approach. For example, the work by Baltazar and Brooks (2007) stresses the relevance of a strategic fit between the port's strategy, structure and operating environment, concluding that it is the port authority's role to align these variables. Looking at the strategy of PAs related to pressures from sustainability perspective, Lam and Notteboom (2014) conclude that PAs of Rotterdam and Antwerp are more active in enhancing green performance than Singapore and Shanghai. Rather taking a logistics perspective, Notteboom and Winkelmanns (2001) argue that the increased attention towards logistics chain performance drives PAs to look beyond the geographical domains of their ports and become networking organisations (Notteboom & Winkelmanns, 2001). They then act as an element in value-driven chains (Robinson, 2002, 2006). PAs might thus develop a 'smart' role in improving interconnectivity and interoperability between private actors (Chlomoudis & Pallis, 2004).

Although seemingly still in its early stages, port authority strategy research has gained increasing attention, which has resulted in interesting and valuable contributions. Table 1 gives a structured overview of key papers addressing the strategy of PAs.

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), which encompasses the purposeful actions of organisation executives. Inside-out approaches, which take the organisational internal attributes as drivers for strategic change, are virtually absent in port authority strategy research, even though the approaches themselves have developed into a vast stream of strategy research (Barney & Zajac, 1994; Foss, 1996, 1998).

This research builds on the above discourse by introducing PA executives' strategic cognition as a potentially relevant explanatory variable in the analysis of PA strategy.

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 of identifying a proper measurement tool for assessing the cognition of ports' executives.

3.1. Strategy and cognition

While strategy making has long been associated with logical systems of analysis and planning, scholars have more recently advocated that cultural, political and cognitive aspects related to the organisations' executives should be taken into account (Hodgkinson & Healey, 2008; Johnson, 1992; Kaplan, 2011; Narayanan et al., 2011; Schwenk, 1988). To define the organisation's strategy, managers must develop and then process information:

Table 1. Overview of relevant contributions on port authority strategy.

Concept/theories	Selection of authors/contributions	Arguments/explanations for PA strategy
<i>Institutional perspective</i>		
Port administration model	Baird (2000), Brooks (2004), Brooks and Cullinane (2006), Chen (2009), de Langen and Heij (2014), Notteboom, De Langen and Jacobs (2013), Vieira, Kliemann Neto, and Amaral (2014) and Wang, Ng, and Olivier (2004)	PA's position and role changes due to port governance reform; coordination plays a substantial role in port governance
PA strategy related to port operators/concessions	Goss (1990)	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 proactive strategy
	Notteboom (2006) and de Langen, Van Den Berg, and Willeumier (2012)	Risk of market failure in port operations, due to limited intra port competition induces an active concession policy of PAs
Collective action, cluster theory	de Langen (2004), de Langen and Pallis (2007) and Verhoeven (2010)	Cluster theory, that is, the concept of collective action problems and the existence of coordination costs, brings arguments for PAs to develop cluster management strategies
<i>Strategic perspective</i>		
Strategic scope, business models	Coeck, Notteboom, Verbeke, and Winkelmanns (1996), Dooms et al. (2013), van der Lugt et al., (2013), Verhoeven (2010) and Hollen et al. (2013)	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 internationalisation strategies that build upon capabilities
Strategic fit	Baltazar and Brooks (2007)	The strategic fit approach asks PAs to establish a fit between the port's environment, the port's structure and the port's strategy
<i>Relational/network perspective</i>		
Interdependence, co-evolution	Child et al. (2012), Hall and Jacobs (2010) and van der Lugt et al. (2014)	Organisational proximity/interdependence between port authority and port operators influences the way in which strategy of PAs can be developed and the way in which the strategic relationship between PA and port operators might develop
Stakeholder management	Dooms and Verbeke (2007), Dooms et al. (2013) and Denktas-Sakar and Karatas-Cetin (2012)	Stakeholders play an important role in port development and influence PAs accordingly for their strategy making
<i>Geographical perspective</i>		
Port regionalisation	Chlomoudis and Pallis (2004), de Langen (2008), Monios (2015), Notteboom and Rodrigue (2005), Notteboom and Winkelmanns (2001), Robinson (2002) and Rodrigue, Debrie, Fremont, and Gouvernal (2010)	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
Strategic fit	Baltazar and Brooks (2007)	The requirement for a strategic fit between structure, strategy and environment in ports asks for a active role of PAs in establishing such a fit

information on the initial structure and strategy of the organisation, on the external context, and on organisation 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 (Schwenk, 1988). These imperfect representations form the basis for the development of mental models and strategic beliefs that drive managerial decisions (Hambrick & Mason, 1984; Kaplan, 2011). In their

study of deregulation in the airline industry, Cho and Hambrick (2006) showed how changes in the top management team's focus of attention (from an "engineering" orientation to an "entrepreneurial" one) were associated with subsequent changes in strategic actions. 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, p. 281).

In this way, strategic cognition develops assumingly impacting strategic decision-making. Strategy researchers try to map cognition or strategic belief sets as a tool in understanding the process of strategy making. Specifically, they try to identify patterns among homogeneous sets of actors or across industries in their attempt to build theory.

3.2. Mapping of cognition: methods and instruments

Although the strategy literature contains a large amount of papers addressing the cognitive aspect in strategy making (see, for extensive overviews, Huff, 1990; Kaplan, 2011; Walsh, 1995), its operationalisation is still limited and rather ambiguous (Narayanan et al., 2011). Precise definitions of cognition remain absent and there is still 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 (Nicolini, 1999). However, most empirical studies analyse strategic beliefs related to very specific situations (Cheng & Chang, 2009; Thomas, Clark, & Gioia, 1993) or map beliefs about the external environment (Sutcliffe & Huber, 1988).

To satisfy the aim of our study, which is to analyse the value in considering a PA executive's strategic cognition as an explanatory variable in port authority 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 to strategy formulation, that is, the beliefs behind the process of strategy formulation; (2) The measurement tool should not be industry-specific, but sufficiently generic to make comparisons between different industry segments possible and (3) The measurement tool must have been applied and tested in a general firm context, providing the possibility to compare the empirical results of our study on PA's executives with empirical results of previous studies in a general firm context.

Having analysed the literature on the mapping of cognition and strategic beliefs, we identified the measurement tool developed by Meyer (2007) to be a useful approach. The tool allows us to evaluate the strategic mindset of port authority executives as a specific industry group. 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 on internal competencies (positioning versus resource-based view) rather than whether there simply are opportunities in the external environment. Therewith, the measurement tool can be applied to a broad spectrum of organisation types. Moreover, the tool was extensively empirically tested on more than 300 managers, mostly from "for profit" companies. This provides the opportunity to assess the outcome of our empirical research among port authority executives relative to a selected reference group of executives from for-profit firms.

Core to Meyer's (2007) methodology is a set of ten dimensions or paradoxes, derived from a vast review of strategic management theories, along which executives' strategy perspectives can differ. Based on theoretical study combined with empirical research, Meyer concludes that there are around 10–15 relevant ways in which strategists can have fundamentally different perspectives.² The paradoxes each relate to existing strategy perspectives on either strategy process, strategy content, or strategy context, that is, the three main building blocks of strategy (Pettigrew & Whipp, 1991; de Wit & Meyer, 2004). Table 2 summarises the tool.

A further analysis of the relevance of all the above dimensions for the case of the port authority revealed 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 port authority. Individual items in these scales are also sufficiently generic to be meaningful questions for PAs (for an overview of the items in the scales, see Appendix 1).
- (2) The paradoxes responsiveness/synergy and globalisation/localisation do not fit the case of the PA. Responsiveness/synergy assumes that the organisation model has business units and headquarters, but this model is not found among PAs. Globalisation/localisation relates to the multinational company, which also does not generally fit the PA.³

The analysis of PA executives' strategic mind will thus be performed using 8 out of the 10 paradoxes of Meyer's tool.

Meyer's operationalisation of the tool was done by a survey based on the ten dimensions for strategic thinking as are listed in Table 2. The survey contains five to seven items for each side of the dimension. This totals 20 sets of items. The items can be

Table 2. Measurement tool for mapping executives' strategic beliefs.

	Strategy topics	Strategy paradoxes	Explanation
Strategy process	Strategic thinking	Logic versus Creativity	Sets rational reasoning against generative reasoning
	Strategy formation	Deliberateness versus Emergence	Sets strategic planning against strategic incrementalism
	Strategic Change	Revolution versus Evolution	Sets a discontinuous renewal perspective against a continuous renewal perspective
Strategy content	Business level strategy	Markets versus Resources	Sets an inside-out or resource-based approach against an outside-in or market opportunities approach
	Corporate level strategy	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
	Network level strategy	Competition versus Cooperation	Sets a discrete competitive organisation against an embedded cooperative organisation with an independent position
Strategy context	Industry context	Compliance versus Choice	Sets industry dynamics against industry leadership
	Organisational context	Control versus Chaos	Sets leadership and control against dynamics and chaos
	International context	Globalisation versus Localisation	Sets a global convergence perspective against an international diversity perspective
	Organisational purpose	Profitability versus Responsibility	Sets stakeholder value against shareholder value

Source: Meyer (2007).

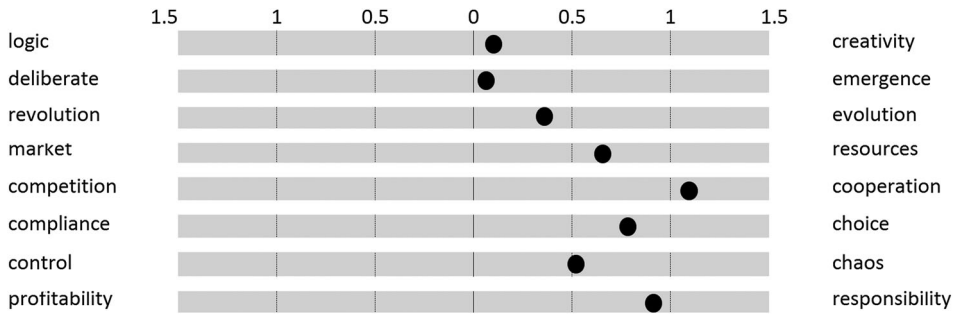


Figure 1. Mean score of executives of set of “regular” firms ($n = 125$). Source: representation of results of Meyer (2007).

scored on a scale from 1 to 5 (not at all agree, slightly agree, agree, very much agree, totally agree). We used Meyer’s (2007) data set, but selected a set of responses. We selected *executive directors* working for a global mix of companies. Reasons for this is that our focus is on the strategic beliefs of (PA) executives, directly involved in the strategic decision-making of the organisation and that our research is global. Meyers set contains also respondents from administrative or operational functions, which are not relevant for our research and could distort the basis for comparison with the PA executives. In our further analysis, we call this sample “regular” executives or executives of “regular” firms. This sample constituted 125 responses. The means of the subset of respondents from Meyer show the following pattern (Figure 1)⁴:

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

3.4. PA’s executives and their cognitive maps

Although PAs are becoming more business-like, 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 how the scores of PA executives compare with the scores of executives of “regular firms” on the dimensions for strategic thinking⁵.

3.4.1. Scope of PA executives’ strategy making

PA executives define strategies both for the port as a whole and for their own organisation. For example, the Port of Rotterdam has developed a strategic vision for the port up to 2030 (the Port Compass) – alongside a business plan for the organisation 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, that is, the private port companies, but also government entities such as municipalities and customs organisations. The strategy for the organisation itself focuses on the specific role of the port authority in this overall port strategy – namely the focus and scope of its activities and investments.

3.4.2. Strategy process

PAs traditionally base their strategic actions on strategic planning (Dooms et al., 2013; Frankel, 1989; Ircha, 2001). This is related to the core function of many PAs as port developer, which entails a focus on such issues as nautical access and port infrastructure (quay walls, roads and 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. As a result, it can be argued that PAs develop more analytical approaches and deliberateness in their strategic routines than executives of regular firms.

For the port authority, we expect the following with regard to the cognitive dimensions in the strategy process:

Proposition 1: PA executives put more weight on logic than on creativity in their strategy-making process compared to executives of ‘regular’ firms.

Proposition 2: PA executives believe more in deliberate processes than in emergency-led processes compared to executives of ‘regular’ firms.

Proposition 3: PA executives think more in terms of evolution than in terms of revolution compared to executives of ‘regular’ firms.

3.4.3. 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 and river facilities. These facilities are naturally geographically bound. PAs have the primary goal of developing and managing these assets, in tandem with operators and service providers, in order to establish an attractive port product. PAs therefore have a strong focus on resources. We expect PA executives to be constrained in exploring new market opportunities by the port’s geographical location and infrastructure assets. Thus, executives may focus more on their “hard” resources than on new markets for which they can develop new services.

Proposition 4: PA executives think more in terms of resources and capabilities than in terms of markets compared to executives of “regular” firms.

PAs are entities that compete with other PAs, sometimes with inland authorities for the investments of industries located in both the port and 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. On one hand, then, PAs pursue competition; on the other hand, there are clear reasons as to why they would cooperate, such as strengthening the wider transport system of which they are a part, achieving cost advantages via synergy, and advancing their position in the network (Donselaar & Kolkman, 2010; McLaughlin & Fearon, 2013). Therefore, PA executives may not necessarily assign more weight to competition or cooperation relative to “regular” executives.

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

3.4.4. *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 and into the hinterland (see work on port governance by Baird, 2000; Brooks, 2004; Ng & Pallis, 2010). This is different for public and private service ports as they might also be involved in operations and services. Because of this specific function in the port's value chain, landlord PAs are restricted in their strategy making and their ability to change their environments, especially at an individual basis. Due to this position, we argue here that PA executives, more so than the executives of regular firms, are inclined to comply with external developments rather than seek to influence/shape them.

Proposition 6: PA executives think more in terms of compliance than in terms of choice compared to executives of “regular” firms.

PA organisations either come from a public background or are still governmental organisations. Despite being subject to changes under New Public Management influences, governmental organisations are still characterised by more hierarchical, bureaucratic and top-down processes, with more political influences and formal procedures for decision-making (Andrews, Boyne, & Walker, 2011; Boyne, 2002). As Rainey, Backoff, and Levine (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 hybrid organisations, combining both public and private characteristics (van der Lugt et al., 2013), their public background might provide them with this impulse for more formal control. Thus, PA executives might view their organisational context, in which strategy is formulated and implemented, more as a structured and controlled environment than as a chaotic environment.

Proposition 7: PA executives think more in terms of control than in terms of chaos relative to executives of “regular” firms.

Ports are of public interest: they are important enablers of regional economic growth, given their typically close proximity to metropolitan areas where people live and work; however, they are also capable of negatively impacting the civil environment(s) in which they are embedded. Because of these potential negative external effects, and the fact that port development is subject to public approval, the “licence to operate” is a very crucial issue for PAs (de Langen, Nijdam, & van der Horst, 2007). For this reason, stakeholder management is often mentioned as one of the core functions of landlord PAs (Dooms et al., 2013; de Langen, 2008). On the other hand, due to their public background, profit maximisation or profit optimisation has not traditionally been a key goal for PAs. Thus, we expect that PA executives show a stakeholder orientation rather than a shareholder orientation, valuing responsibility over profitability.

Proposition 8: PA executives think more in terms of responsibility than in terms of profitability compared to executives of “regular” firms.

4. Empirical analysis

4.1. Data and method

We obtained the empirical data for this research through a survey of PAs. The survey is based on the measurement tool developed by Meyer (2007). The two main aspects that are questioned in the survey are the strategic beliefs of the PAs' executives and the institutional structure of the port authority organisation. We operationalised the dimensions of the measurement model in the same way as Meyer (2007) and then quantitatively tested those items among port authority executives through an online survey. The questions relating to the institutional structure of the port authority aimed to distinguish PAs with a more governmental character from PAs with a more business-like character. Other questions in the survey focused on contextual information for the organisation and the respondent⁶.

We compiled 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 compiled a list of PAs based on information from the World CIA Fact book (in which the major ports in the world are listed) and then obtained descriptive information on the ports using the World Port Source (www.worldportsource.com).

The survey was sent in hardcopy and through email, with a personal invitation letter supported by ESPO the European Seaports Organization and IAPH the International Association for Ports and Harbours. Respondents could fill out the survey either online or in hardcopy.

Of the 445 PAs that received the survey, 65 returned valid responses, resulting in a response rate of 15% out of the total set. However, the list of respondents shows that only executives of PAs from developed (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.

4.2. Validity of measurement construct

The first step in the analysis was to test whether the measurement construct used also fit the set of respondents for this PA-focused research. We thus analysed the consistency of the scales using Cronbach's alpha. We dropped a few items that showed very low consistency in the scale, leaving at least four items for each scale. We further used factor analysis based on a polychoric correlation table of the scores to test the strength of the measurement construct⁷. With the exception of two scales (markets and compliance), all scales in the tool showed sufficient internal consistency for further analysis (Cronbach's alphas were 0.6 or higher; see Appendix 1). The scale for "markets" had an alpha of 0.51 and the factor analysis for this scale resulted in two factors. Meanwhile, the scale for "compliance" had an alpha of 0.53, which is rather low. As a result, the two scales "markets" and "compliance" were treated with more care in the subsequent analysis. We also checked for the presence

of negative correlation between the two scales forming the dimensions: each dimension contains two opposite perspectives. This means that one would expect a highly negative correlation coefficient between the opposite scales. We checked this and found a negative correlation, confirming the deliberate paradoxical character of the dimensions (see also Appendix 2).

4.3. PA executives' cognition along eight dimensions

Figure 2 shows the differences in average response scores between the PA executives and the reference set. The deviation from zero indicates a tendency towards one side of the "paradoxical" beliefs. The scores highlight the dimensions that are typical for PAs and which distinguish their executive's beliefs from those of "regular" organisations.

The analysis shows that PA's executives broadly follow the same pattern as the regular executives, but there are some clear differences. *T*-tests (see Appendix 3) show that the difference in scores on the dimensions logic/creativity, deliberate/emergence and markets/resources is significant between the group of PA executives and the "regular" group of executives. This leads to the following results:

Propositions 1 and 2 are accepted: PA executives think significantly more in terms of logic than in terms of creativity compared to "regular" executives. They also think significantly more in terms of deliberateness than in terms of emergence compared to "regular" executives. This can be related to their long-term planning processes.

Proposition 3 is rejected: The expectation was that, because of long-term infrastructural development processes with large investments involved, evolution would be weighted significantly over revolution. However, PA executives do not think significantly more in terms of evolution than in terms of revolution compared to "regular" executives.

Proposition 4 is also rejected: We had expected that PAs would think more in terms of resources than in terms of market opportunities compared to "regular" executives, but the results show that the opposite is true. The argument could be made that although PAs are resource-driven, this characteristic extends only to their physical resources. It is apparently not yet common for PAs to internally assess their hard and soft resources and capabilities for the purpose of broadening their view on their market scope.

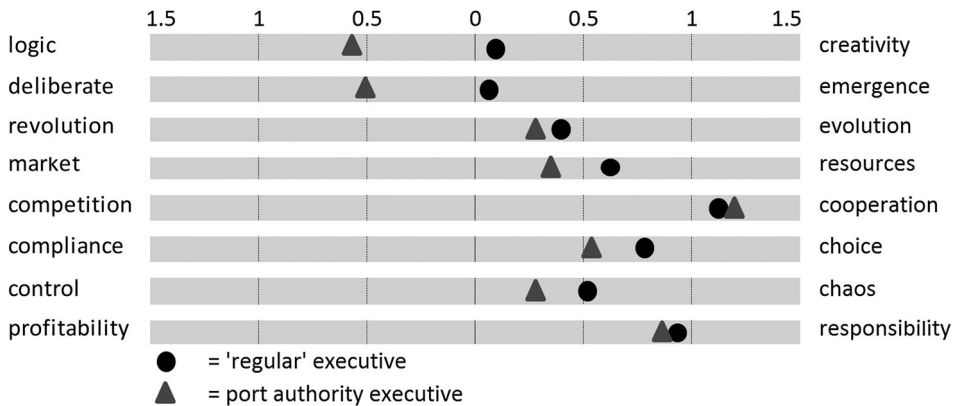


Figure 2. Comparing PAs (n = 65) with mixed set of private companies (n = 125).

Proposition 5 is accepted: We stated that we do not see any reason why PAs would think more in terms of cooperation than in terms of competition compared to “regular” executives.

Proposition 6 is rejected: PAs do think more in terms of compliance than in terms of choice compared to “regular” executives, but not as much as was expected (i.e. the result is not significant).

Propositions 7 and 8 are rejected: PAs do not show a significant difference in how they think on the dimension control versus chaos compared with “regular” executives. They also do not show a significant difference in how they think on the dimension profit versus responsibility.

Based on these results, we draw three conclusions. In the first place, PA executives do not differ much from “regular” executives in the strategic beliefs underlying their strategy formulation. Second, the fact that PAs operate in a long-term planning environment seemingly impacts their executives’ thinking about the strategy-making process. A third conclusion involves the dimension compliance versus choice: The fact that PA executives do not think significantly more in terms of compliance than in terms of choice compared to executives of “regular” firms defies our expectations. The limited strategic freedom afforded to PAs (Goss, 1990; van der Lugt et al., 2014) would suggest a bias in those responses by PA executives expressing a preference for strong leadership – or more seriously, that PA executives rather overestimate the freedom they have in their decision-making and the potential influence they have on their strategic environment, that is, the leadership role they have for port development.

4.4. Impact of institutional structures of PAs in sample

In addition to seeing how cognitions differ between the executives of PAs and regular firms, it is worthwhile to compare the more public PAs in our set with the more private PAs. Although almost all PAs have undergone institutional reform, there are still substantial differences between PAs from an institutional perspective. Some PAs are controlled by governmental bodies and subject to political influence, whereas other PAs are corporatised or even privatised and, as a consequence, act on more business-like principles. Research has shown that more privately organised ports put more weight on firm-level goals than on public goals and their strategic scope is wider, both functionally and geographically, relative to more publicly organised PAs (Lugt et al., 2015). We expect that the institutional reform of PAs will have an influence on their strategic cognition.

PAs that are corporatised or privatised have executives and also commissioners who more often come from a private background (NB empirical analysis has shown a correlation between corporatisation and a private composition among the board of commissioners; see Lugt et al., 2015). It is very likely that these actors have developed their strategic thinking in a different context from that of the executive with a vast governmental background.

Based on the different contexts between more governmental and more business-like PAs, we expect some differences in the strategic beliefs of their respective executives. In an explorative way, we check for this by comparing the means of the group of privatised/corporatised PAs with the PAs that are governmental bodies. Figure 3 gives the results.

A *t*-test for comparison means between groups shows that the dimensions where the groups present significant (at the $P < 0.05$ level) differences in means are: deliberate/emergence and profitability/ responsibility (see results of *t*-test in Appendix 4).

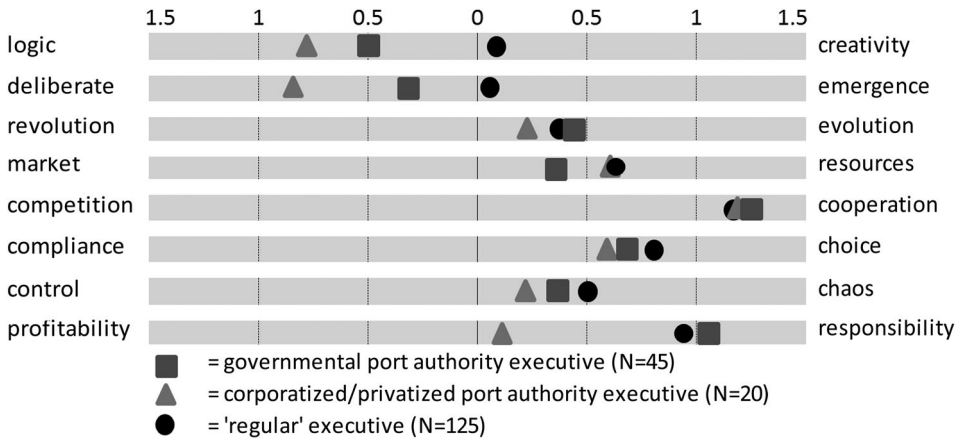


Figure 3. Corporatised/privatised PAs (N = 20) versus non-corporatised PAs (N = 45).

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

The most striking result, however, is the difference found between PAs on the dimension profitability/responsibility. The fact that executives of more business-like PAs think more in terms of profitability than the executives of public-oriented PAs was expected. What is remarkable is that the executives of private/corporatised PAs think much more in terms of profitability than the general industry average, that is, the “regular” executive (see Figure 3). Corporatised/privatised PAs may exaggerate “profitability thinking” at the expense of attention for responsibilities towards other stakeholders. This is an interesting observation that feeds into the discussion on the privatisation of PAs (Baird, 1995; Everett & Robinson, 1998). Everett and Robinson (1998), for example, analysing why PAs’ corporatisation objectives were not being realised during port reform in Australia, end their research paper with the question of whether the privatisation of PAs is a truly more effective model for improving port performance. Our analysis raises a similarly serious doubt for privatisation specifically in that that privatised PA executives may think more on behalf of their shareholders than on behalf of their stakeholders.

5. Discussion and conclusions

A changing institutional and market context has spurred attention towards port authority strategies in both practice and the academic literature. A review of research contributions has shown that outside-in approaches are dominant in the literature: changes in the institutional and market contexts are seen as drivers for a strategic reorientation of PAs. Inside-out approaches, taking organisations’ attributes rather than their external context as a

starting point for their strategic decision-making, are virtually absent, even though such approaches are well established in general strategy research. This paper applied a specific inside-out perspective on port authority strategy analysis and concentrated on the cognition of the strategy maker, that is, the port authority executive involved with the *how* of strategy. Applying a mind mapping tool that was developed by Meyer (2007) allowed us to measure the strategic beliefs of port authority executives and compare these with the beliefs of executives from “regular” firms, that is, private, for-profit firms acting in a market environment. The results from the survey also allowed us to compare the beliefs of PA executives acting 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, PA executives show similar patterns in their strategic beliefs relative to “regular” firms, but there are some indications that PAs do not completely resemble “regular” firms. Significant differences were found on the dimensions logic/creativity (i.e. PA executives think substantially more in terms of logic than in terms of creativity compared with executives of “regular” firms), deliberateness/emergence (i.e. PA executives think more in terms of deliberateness than in terms of emergence), and market versus resources (i.e. PA 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 PAs tend to think more in terms of profit than executives of more governmental PAs do, which supports our expectation. Surprisingly, the group of executives from the business-like PAs thinks even more in terms of profit than executives of the “regular” firms.
- PA executives think more in terms of choice than in terms of compliance.

These results lead us to the following conclusions and considerations:

- (1) This first attempt to introduce a cognitive approach into the research stream on port authority strategy has shown its relevance. We can conclude that PA executives largely resemble “regular” executives in terms of their thinking. At the same time, we see some differences that underline the strategic context(s) in which PAs operate. The long-term planning background of PAs especially influences their strategic thinking, leading executives to think more in terms of logic, analysis and deliberateness than in terms of intuition, creativity and emergence. PA’s executives also think more in terms of market opportunities than in terms of its resources as drivers for strategic change than regular executives do. This could be explained by a more strict view on market opportunities of PA’s executives and also a more conservative view on their resources, considering the physical resources as key in their business models. These differences imply that researchers must carefully consider the port authority as a specific organisation when applying strategic management analysis. Our findings also underscore the need to give more emphasis to inside-out approaches in PA strategy research, whereby the organisations’ attributes are taken as starting point for their strategy making.
- (2) The fact that PA executives acting in a business-like context significantly think more in terms of profit than in terms of responsibility compared to PA executives acting in a governmental context shows that there is a risk of losing the responsibility orientation

while corporatising or privatising PAs. Granted, the answers on the survey questions do not indicate per se that PA executives actually envision this profit-maximisation goal for their own organisation, but we can argue that PA executives who start seeing their organisation as a “regular” firm could become excessively invested in profit maximisation. This once again underlines the need to accompany port authority reform with monitoring and controlling frameworks. Just as “regular” firms have gradually adopted more corporate social responsibility and become “shared value organisations,” business-like PAs also need to maintain a responsibility for port-related public interests. This provides a clear reason to question the privatisation of PAs. Preserving governmental involvement, especially in building proper frameworks to guide their operations, is recommended.

- (3) The fact that PA’s executives think generally more in terms of choice than in terms of compliance implies that said executives might overestimate their ability to show real industry leadership as well as change their strategic context. In our view, PAs are rather reactive to their environments and have limited ability to influence this reality. Overestimating their own role might be risky, especially in a strategy context where there is strong interrelationship and interdependency with other actors (Hall & Jacobs, 2010; van der Lugt et al., 2014).

Our review of port authority strategy research and the resulting empirical analysis have highlighted a need to add inside-out approaches to the analytical base of port authority strategy analysis. Taking the organisation’s attributes as a starting point for strategy analysis allows academics and practitioners to apply concepts already developed by strategy research. At the same time, honing in on the PAs’ specific attributes and characteristics brings nuance to the ways in which generic concepts can be applied and interpreted.

This first attempt to introduce strategic cognition as a variable in explaining port authority strategy approached cognition rather generically by focusing on the process of strategy formulation. We argue that there is value in further developing this approach, especially when considering the beliefs regarding the more concrete *what* of the strategy itself (i.e. the specific strategy context and content). Such elaboration could also give more substance to our tentative conclusion that the privatisation of PAs might not be the right way forward and that specific attention should be given to the way in which port authority reform processes are steered from a governmental perspective.

It is also worth noting that strategic beliefs can be influenced by the wider environment, in tandem with the organisation’s history and specific characteristics. For instance, aspects such as a country’s specific culture could be influential (Hofstede, 2001; Meyer, 2007). Although our results represent PA executives from different regions and countries, data limitations prevented us from performing additional statistical analysis on the potential influence of cultural background on strategic beliefs.

Notes

1. Other types that still can be found are fully or partially government-controlled ports (i.e. service ports, tool ports) or completely private ports.
2. From Meyer’s research, it can be derived that expectedly, there are no two overarching paradigms for strategic beliefs, nor are there hundreds of dimensions. Based on his research, Meyer

comes to ten dimensions, stating that there might be a few missing but that the selection represents what can be derived from theory and what is confirmed by the empirical research (Meyer, 2007, p. 350).

3. 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 developed among other port authorities.
4. Meyer successfully tested the scales for internal consistency and for negative correlation between the two sides of each of the dimensions.
5. Although we recognise the impact of institutional and cultural differences coming from different national cultures (Hofstede, 2001) and national institutional environments (Scott, 1995) on the characterisation of PAs, we here try to come up with a general characterisation of PAs from a more functional and operational perspective.
6. We stressed the importance of an executive filling in the survey and thus decided to remove those responses that were not filled in by an executive.
7. We used polychoric correlation table because of the ordinal character of the data.

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Appendix 1. Items in the survey.

ITEMS in survey		
1.1	To understand strategic issues, successful managers depend heavily on their analytical capabilities	Logic
1.2	Formulating strategies requires strong logical thinking	Logic
1.4	Managers should be highly rational in developing strategy	Logic
1.7	Strategies should be based on facts, not on impressions	Logic
1.8	It is dangerous to take bold strategic action without extensive market analysis	Logic
1.13	The best strategists are more analytical than creative	Logic
2.1	To understand strategic issues, successful managers depend heavily on their intuitive capabilities	Creativity
2.2	Formulating strategies requires strong creative thinking	Creativity
2.11	Strategizing should be driven by creativity and supported by analysis	Creativity
2.13	The best strategists are more creative than analytical	Creativity
2.14	In making strategy, original ideas are more important than the cold facts	Creativity
2.15	Successful strategizing is more about being inventive than about being analytical	Creativity
3.1	Detailed long-term planning is valuable for coordinating strategic developments within a firm	Deliberateness
3.2	Firms should forecast long-term developments and plan accordingly	Deliberateness
3.3	Firms should first formulate strategic plans and then implement them	Deliberateness
3.4	Firms should plan their investments and activities in advance	Deliberateness
3.9	Detailed strategic plans are valuable, because they specify goals against which progress can be measured	Deliberateness
3.11	Detailed strategic plans are essential for firms to set investment priorities	Deliberateness
4.1	Successful managers set a general strategic direction and then fill in the details along the way	Emergence
4.9	Making detailed strategic plans is a waste of time	Emergence
4.11	A good strategy is not a detailed long-term plan, but a guideline for the further exploration of opportunities	Emergence
4.15	Strategies should be broad guidelines, not rigid plans	Emergence
5.1	To achieve a major change, managers should push through all necessary measures in a swift, bold move	Revolution
5.5	Organizational change should be radical, to break through employees' old habits and routines	Revolution
5.7	Managers expecting organizational changes to take years of gradual development lack ambition	Revolution
5.12	Advocating evolutionary change is the best way to ensure that no real changes will happen at all	Revolution
5.13	A revolutionary approach to organizational change is better than an evolutionary one	Revolution
5.14	A gradual approach to organizational change usually leads to very few changes at all	Revolution
6.1	To achieve a major change, managers should implement many moderate changes one after the other	Evolution
6.2	Major organizational change works best through continuous small improvements	Evolution
6.4	Major change should be the result of a continual development process	Evolution
6.5	Organizational change should be moderate, to allow employees to learn and adapt their routines	Evolution
6.11	Organizations are like oil tankers, whose course can only be changed gradually	Evolution
6.13	An evolutionary approach to organizational change is better than a revolutionary one	Evolution
6.14	Pursuing revolutionary change usually creates huge resistance and low acceptance	Evolution
7.2	If companies jump at market opportunities, they can always develop the necessary competences and technologies to match	Markets
7.5	Firms should pursue the best market opportunities, not necessarily the ones closest the firm's current competences	Markets
7.9	Firms that focus on building their core competences are usually too slow in capturing shifting market opportunities	Markets
7.12	Firms should jump at market opportunities first and worry how to acquire the necessary resources and skills later	Markets
7.13	Staying close to your core competences is a too conservative approach	Markets
7.14	Successful firms are willing to throw away their core competences if market opportunities are better elsewhere	Markets
8.1	The starting point of all strategizing should be the distinctive capabilities of the firm	Resources
8.3	Firms should stick to their core technologies and capabilities, seeking new markets where they can be applied	Resources
8.5	Firms should always stay close to their core competences	Resources
8.9	Having superior technologies and capabilities is more important than being first on the market	Resources
8.13	Firms should focus on the market opportunities closest to their core competencies	Resources
8.14	Stay close to the firm's current strengths, instead of chasing wild new market opportunities	Resources
9.2	Each business unit within a corporation should have considerable freedom to determine its own strategic direction	Responsiveness
9.5	The role of corporate headquarters should be focused on financial control of its business units	Responsiveness
9.11	The corporate head office's role should be kept to a bare minimum	Responsiveness

(Continued)

Appendix 1. Continued.

ITEMS in survey		
9.12	The identity of individual business units should be given more emphasis than the overall corporate identity	Responsiveness
9.13	In strategy, the business units should lead and the corporate head office should facilitate	Responsiveness
9.14	In successful corporations, almost all key activities and decision-making is done in the business units	Responsiveness
10.2	Business unit strategies should be tightly integrated into the overall corporate strategy	Synergy
10.5	The role of corporate headquarters should be to determine the strategic direction of its business units	Synergy
10.11	The corporate head office should set the general strategic direction for each business unit to follow	Synergy
10.12	The overall corporate identity should be given more emphasis than the identity of individual business units	Synergy
10.13	The corporate strategy should be leading and business units should follow very closely	Synergy
10.15	Business units should have only limited autonomy to deviate from corporate strategic plans	Synergy
11.1	Partnerships between firms are never stable for very long	Competition
11.11	Firms should work as independently as possible, only using temporary alliances if necessary	Competition
11.13	Firms should only consider alliances if they lack the ability to accomplish things independently	Competition
11.14	Alliances are for the weak; strong firms set their goals and achieve them independently	Competition
11.15	In most so-called partnerships, both firms are largely focused on their own interests	Competition
11.16	Firms should never accept being dependent on an alliance partner for their long-term success	Competition
12.1	Cooperation between firms is much more healthy than competition	Cooperation
12.11	Firms should seek strong partner organisations, with which to build long-term alliances	Cooperation
12.12	Firms should build long-term partnerships to reach strategic goals that are impossible to achieve independently	Cooperation
12.13	Partnerships between firms are a great way to combine competencies and achieve innovations	Cooperation
12.15	Alliances are a great way to combine resources and attack a mutual rival	Cooperation
12.16	There are many examples of mutually beneficial long-term partnerships between firms	Cooperation
12.17	It is strategically ok for two alliance partners to be mutually-dependent for their long-term success.	Cooperation
13.1	Adapting to market changes is wiser than trying to shape the market yourself	Compliance
13.9	Firms should let others be the pioneers and only embrace business innovations once they seem likely to become successful	Compliance
13.13	Successful firms follow trends; they don't try to create them	Compliance
13.14	Firms following industry trends have a higher survival rate than radical innovators	Compliance
13.16	It is a better strategy to give customers what they currently want, than to try to create a new need	Compliance
13.17	Successful strategists understand "the industry rules" and play by the rules; adapting their firm to what is possible	Compliance
14.1	Above-average profitability is attained by firms that don't adapt to the market, but actively shape the market	Choice
14.7	Constantly striving to revolutionize the industry will lead to above-average profitability	Choice
14.9	Firms should strive to be the initiators of radical innovations in their industry	Choice
14.11	Innovative first-movers are generally more profitable than firms that are second-movers	Choice
14.13	Successful firms don't follow the trends; they create them	Choice
14.14	Successful firms avoid copying the ideas of other firms; they prefer to experiment and innovate themselves	Choice
15.1	Top-down strategy making works best	Control
15.5	Strategy is the responsibility of top management	Control
15.7	Top managers should tell their subordinate managers which strategic actions need to be taken	Control
15.9	Top management should come up with strategies and to get everyone to move in that direction	Control
15.13	In strategy making, top management should be in the lead, with some support from lower levels	Control
15.15	In successful firms, strategy is not made democratically; it is made and then sold by top management	Control
16.1	Bottom-up involvement in strategy formulation and implementation works best	Chaos
16.6	Top management should create the conditions for strategic initiatives to emerge from lower levels in the organization	Chaos
16.7	Top managers should encourage middle managers to participate in setting the strategic direction of the firm	Chaos
16.9	Good leaders make themselves redundant, building organizations that can be successful even after the leader is gone	Chaos
16.13	In strategy making, top management should facilitate wide-spread involvement throughout the organization	Chaos
16.14	In successful firms, top managers know that the best strategies will emerge out of discussions throughout the organization	Chaos

(Continued)

Appendix 1. Continued.

ITEMS in survey		
16.15	In successful firms, strategy is not made autocratically by top management, but through more democratic participation	Chaos
17.1	International firms should strive to sell globally standardized products	Globalization
17.4	International firms should focus on global standardization, to reap economies of scale	Globalization
17.12	International firms should strive towards a uniform corporate culture all around the world	Globalization
17.13	The most successful international firms use the same standardized approach everywhere around the world	Globalization
17.14	International firms should only adapt their products and processes if the foreign market conditions force them to	Globalization
17.15	First rule of international success: "Standardize, unless foreign market circumstances force you to localize"	Globalization
18.1	International firms should strive to sell products adapted to local needs and conditions	Localization
18.4	International firms should focus on local adaptation to a country's specific demands	Localization
18.14	Successful international firms blend into foreign markets and act almost like local companies	Localization
18.15	First rule of international success: "Localize, unless global scale advantages force you to standardize."	Localization
18.16	The most successful international firms are masters at tailoring their products and processes to meet local conditions	Localization
18.17	Even if a globally standardized product sells well, tailoring it to local needs could make it sell better	Localization
19.1	The ultimate objective of a firm should be to earn a profit for its shareholders	Profitability
19.8	Firms exist to make money, not to create jobs	Profitability
19.9	It is not the responsibility of firms to consider the social impact they have on the local community	Profitability
19.11	It is not the responsibility of firms to treat their employees well, although it can make good business sense	Profitability
19.12	Firms should avoid taking on social responsibilities such as creating jobs and cleaning up the environment	Profitability
20.1	To be good corporate citizens, firms should look beyond profitability and make a strong contribution to society's welfare	Responsibility
20.7	Firms have social responsibilities beyond those in the law	Responsibility
20.8	Firms that make a lot of money, but are bad employers, should be despised	Responsibility
20.9	Business strategies should be judged by the social impact they have on the local community	Responsibility
20.11	It is the responsibility of firms to treat their employees well, even when it lowers profitability	Responsibility
20.12	Firms have social responsibilities, such as creating jobs and keeping the environment clean	Responsibility

Appendix 2. Internal consistency test for measurement scales (Cronbach's alpha).

Scale	Cronbach's alpha	Negative correlation
Logic	0.63	-0.05
Creativity	0.59	
Deliberate	0.65	-0.38
Emergence	0.59	
Evolution	0.72	-0.14
Revolution	0.7	
Market	0.59	-0.20
Resources	0.63	
Competition	0.68	-0.41*
Cooperation	0.75	
Choice	0.71	-0.25*
Compliance	0.54	
Control	0.75	-0.44*
Chaos	0.78	
Profitability	0.72	-0.29*
Responsibility	0.71	

*Significant at the $P < .1$ level.

. ttest mark_res, by(Port)

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	125	-.6766275	.0847036	.9470148	-.8442796	-.5089753
1	65	-.4253846	.1043422	.8412339	-.6338322	-.2169371
combined	190	-.590676	.0665827	.9177794	-.7220167	-.4593352
diff		-.2512428	.1395218		-.5264722	.0239865

diff = mean(0) - mean(1) t = -1.8007
 Ho: diff = 0 degrees of freedom = 188

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.0367 Pr(|T| > |t|) = 0.0733 Pr(T > t) = 0.9633

. ttest comp_coop, by(Port)

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	125	-1.113681	.1012952	1.132514	-1.314172	-.9131892
1	65	-1.296154	.1152737	.9293664	-1.52644	-1.065868
combined	190	-1.176106	.0775105	1.068409	-1.329003	-1.023209
diff		.1824732	.1632739		-.1396111	.5045575

diff = mean(0) - mean(1) t = 1.1176
 Ho: diff = 0 degrees of freedom = 188

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.8674 Pr(|T| > |t|) = 0.2652 Pr(T > t) = 0.1326

. ttest compl_choice, by(Port)

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	125	-.8513725	.0927551	1.037033	-1.034961	-.6677842
1	65	-.5946154	.1116319	.9000053	-.8176258	-.371605
combined	190	-.7635346	.0723582	.9973884	-.9062679	-.6208012
diff		-.2567572	.1517752		-.5561584	.0426441

diff = mean(0) - mean(1) t = -1.6917
 Ho: diff = 0 degrees of freedom = 188

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.0462 Pr(|T| > |t|) = 0.0924 Pr(T > t) = 0.9538

```
. ttest contr_chaos, by(Port)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	125	-.495451	.1170714	1.308898	-.727168	-.263734
1	65	-.2923077	.1305796	1.052766	-.5531704	-.031445
combined	190	-.4259546	.0891082	1.228272	-.6017291	-.2501801
diff		-.2031433	.1877429		-.5734968	.1672102

```
diff = mean(0) - mean(1)                                t = -1.0820
Ho: diff = 0                                           degrees of freedom = 188
```

```
Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 0.1403          Pr(|T| > |t|) = 0.2806          Pr(T > t) = 0.8597
```

```
. ttest prof_resp, by(Port)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	125	-.984	.1015017	1.134823	-1.1849	-.7830997
1	65	-.7841026	.1339671	1.080077	-1.051733	-.5164726
combined	190	-.915614	.081078	1.117583	-1.075548	-.7556801
diff		-.1998974	.1707336		-.5366973	.1369024

```
diff = mean(0) - mean(1)                                t = -1.1708
Ho: diff = 0                                           degrees of freedom = 188
```

```
Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 0.1216          Pr(|T| > |t|) = 0.2432          Pr(T > t) = 0.8784
```

Appendix 4. Results of *t*-test comparison PAs with governmental structure versus corporatised/privatised PAs

```
. ttest log_crea, by(Corp)
```

Two-sample *t* test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	.4788889	.1174701	.7880131	.2421435	.7156342
1	20	.9175	.1362696	.6094163	.6322844	1.202716
combined	65	.6138461	.0943634	.7607823	.4253335	.8023587
diff		-.4386111	.1985229		-.8353275	-.0418947

diff = mean(0) - mean(1) t = -2.2094
 Ho: diff = 0 degrees of freedom = 63

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.0154 Pr(|T| > |t|) = 0.0308 Pr(T > t) = 0.9846

```
. ttest delib_emerge, by(Corp)
```

Two-sample *t* test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	.4277778	.1413817	.9484171	.1428417	.7127138
1	20	.7875	.15312	.6847733	.4670162	1.107984
combined	65	.5384615	.1099375	.8863447	.3188361	.758087
diff		-.3597222	.2357645		-.8308601	.1114156

diff = mean(0) - mean(1) t = -1.5258
 Ho: diff = 0 degrees of freedom = 63

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.0660 Pr(|T| > |t|) = 0.1321 Pr(T > t) = 0.9340

```
. ttest rev_ev, by(Corp)
```

Two-sample *t* test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	-.3485185	.1431741	.9604412	-.637067	-.05997
1	20	-.435	.2015107	.9011834	-.8567668	-.0132332
combined	65	-.3751282	.1161499	.9364305	-.6071643	-.1430921
diff		.0864815	.2534134		-.4199249	.5928878

diff = mean(0) - mean(1) t = 0.3413
 Ho: diff = 0 degrees of freedom = 63

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.6330 Pr(|T| > |t|) = 0.7340 Pr(T > t) = 0.3670

```
. ttest mark_res, by(Corp)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	-.3718518	.1285635	.8624301	-.6309545	-.1127492
1	20	-.5458333	.1787786	.7995224	-.9200214	-.1716453
combined	65	-.4253846	.1043422	.8412339	-.6338322	-.2169371
diff		.1739815	.2268053		-.2792526	.6272157

```
diff = mean(0) - mean(1)                                t = 0.7671
Ho: diff = 0                                           degrees of freedom = 63
```

```
Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 0.7771          Pr(|T| > |t|) = 0.4459          Pr(T > t) = 0.2229
```

```
. ttest comp_coop, by(Corp)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	-1.327778	.1531882	1.027617	-1.636508	-1.019047
1	20	-1.225	.151032	.6754358	-1.541114	-.9088864
combined	65	-1.296154	.1152737	.9293664	-1.52644	-1.065868
diff		-.1027778	.2514009		-.6051623	.3996068

```
diff = mean(0) - mean(1)                                t = -0.4088
Ho: diff = 0                                           degrees of freedom = 63
```

```
Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 0.3420          Pr(|T| > |t|) = 0.6841          Pr(T > t) = 0.6580
```

```
. ttest compl_choice, by(Corp)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	-.6388889	.1311458	.8797526	-.9031958	-.3745819
1	20	-.495	.2145957	.9597012	-.944154	-.045846
combined	65	-.5946154	.1116319	.9000053	-.8176258	-.371605
diff		-.1438889	.2431062		-.6296979	.3419202

```
diff = mean(0) - mean(1)                                t = -0.5919
Ho: diff = 0                                           degrees of freedom = 63
```

```
Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 0.2780          Pr(|T| > |t|) = 0.5561          Pr(T > t) = 0.7220
```

. ttest contr_chaos, by(Corp)

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	-.3185185	.1651932	1.108149	-.6514435	.0144064
1	20	-.2333333	.210263	.9403247	-.6734188	.2067522
combined	65	-.2923077	.1305796	1.052766	-.5531704	-.031445
diff		-.0851852	.284957		-.6546262	.4842559

diff = mean(0) - mean(1) t = -0.2989
 Ho: diff = 0 degrees of freedom = 63

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.3830 Pr(|T| > |t|) = 0.7660 Pr(T > t) = 0.6170

. ttest prof_resp, by(Corp)

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	45	-1.107407	.1405612	.9429132	-1.39069	-.8241249
1	20	-.0566667	.2308654	1.032461	-.5398735	.4265402
combined	65	-.7841026	.1339671	1.080077	-1.051733	-.5164726
diff		-1.050741	.260892		-1.572092	-.5293897

diff = mean(0) - mean(1) t = -4.0275
 Ho: diff = 0 degrees of freedom = 63

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
 Pr(T < t) = 0.0001 Pr(|T| > |t|) = 0.0002 Pr(T > t) = 0.9999