Port Performance: Progress and Future Activities of the Network

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Port Performance: Progress and Future Activities of the Network

6th Workshop of the Port Performance Research Network, Athens, 2007

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Agenda

Port Performance Research Network:

- What we've done…
- What we've accomplished (or not)?
- Where should we go in future? E.g. What's next?

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What We've Done …

- Initial premise (configuration model and PA governance post-devolution)
- Methodology (Panama)
- Collected data (and analysis)
- Findings:
  - Models are more complex than expected
  - PAs often have conflicting mandates
  - Performance measurement in container terminals is less difficult than in multi-product ports with confused governance and divergent objectives
- Published RTE (Vol 17) as end of Phase 1 (Questionnaire A)

Research Directions (Decided in Panama 2002)

- Governance of port functions
  - Fine tune matrix of functions and the scale for measuring the governance associated with each each port related functional activity (Progress: Chapter 18 on Ques. A)
- Governance of port configuration
  - Complete the baseline research through archival and interview research (Progress: Multiple Country Chapters)
- Governance of national differences
  - Finalize the research instrument
  - Develop research implementation program (Ques. B)
- Port performance
  - Identify appropriate dimensions and measures (Ques. C; IAME 2007 paper)

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Constructs and Methods (from Panama)

- Cultural antecedents of configuration preference (Ramon Baltazar's measures)
- Organizational antecedent of organization performance (Management & ownership typology by port function)
- System performance
  - **Efficiency, effectiveness and satisfaction of stakeholders (remains incomplete but is a starting point for phase 2)**
  - Position on World Competitiveness Factors
- Control variables
  - Demographic data (gender, managerial levels)

Issues

- Three actors with differing performance needs
  - Buyer of port services
  - Ports for own benchmarking
  - Governments for port reform monitoring
- Complex models, with 3 strategic purposes and 9 proxies (from Chapter 18)
- Other variables of influence from Chapter 26
- Our current experience with Questionnaire B (Pallis' presentation)
- Our current experience with Questionnaire C (Pallis' presentation)
- Our next steps?

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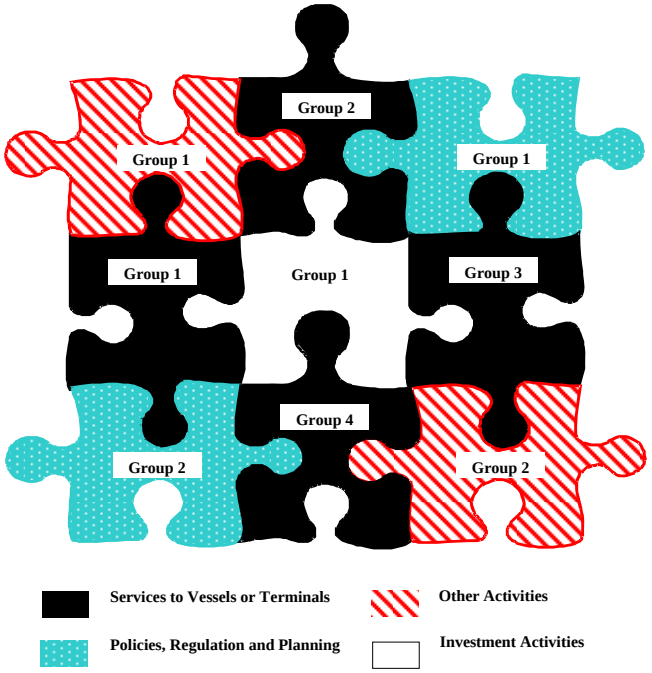

Proxies Found for Model Differen-tiation (1)

Proxies Found for Model Differentiation (2)

Port Activity	Governance Proxy
Services to Vessels or Terminals	Line handling for arriving/departing vessels Provision of fire protection services Terminal security Provision of pilotage services
Other Activities	Port security Customs and immigration services
Policies, Regulation and Planning for the Port	Setting and controlling port tariffs Determining applicable port safety and security policies

Note: Land acquisition and disposal is 9th proxy.
Source: Brooks and Cullinane (Chapter 26, 2007)

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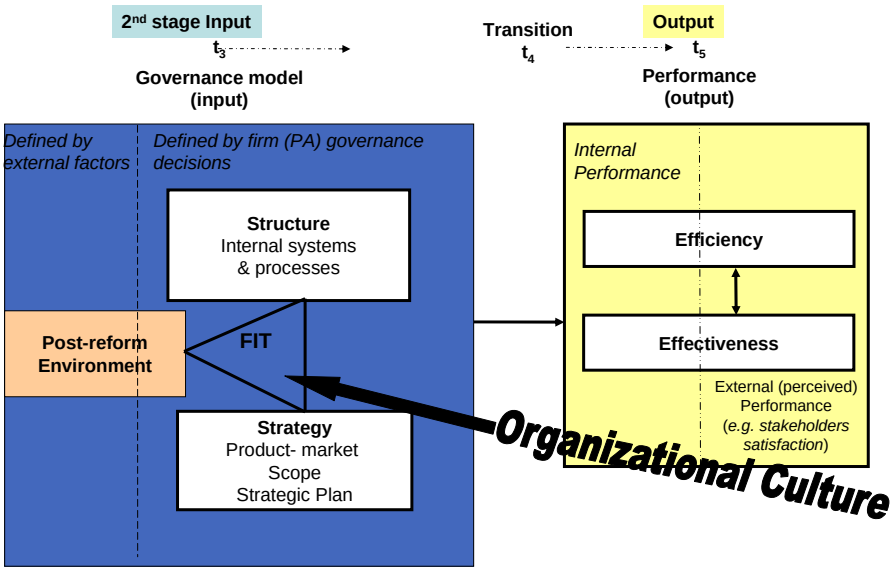
Organizational Culture: An Antecedent of Fit (& Port Performance)

The Process (with missing variables)



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Questionnaire B (Organizational Culture)

- **Port performance can often be tied to goals, approaches and managerial culture.**
- What do we ask?
  - *Assess contrasting statements regarding the organisation in which they work*
  - *Assess contrasting statements regarding the organisation in which they wish to work*
  - Assess the extent to which certain conditions describe the organization in which they work
  - Assess the extent to which certain conditions describe the organization in which they wish to work
  - Strategic intent of the port
  - General demographic info

Questionnaire B (Organizational Culture) Responses to Date

Total Replies	**67**
Turkey	17
Canada	14
USA	14
Greece	8
Australia	5
Italy	4
The Netherlands	4
UK	3
China	2

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Questionnaire B (Organizational Culture) Responses to Date

- **Preliminary Nonparametric Analysis**
  - **Reliable Sample (**Alpha 0,913**).**
  - **Significant Variation between Countries** (even though the sample is small)
  - **Comparative analysis of Canada, USA, Turkey**
    - In some cases the perceptions of existing port organizations don't vary between countries (i.e. US & Canada)
    - Preferences regarding the 'desired' situations
      - vary considerably from perceived.
      - vary considerably between countries
- **Factor analysis** is planned.
- Potential for **Gap analysis**

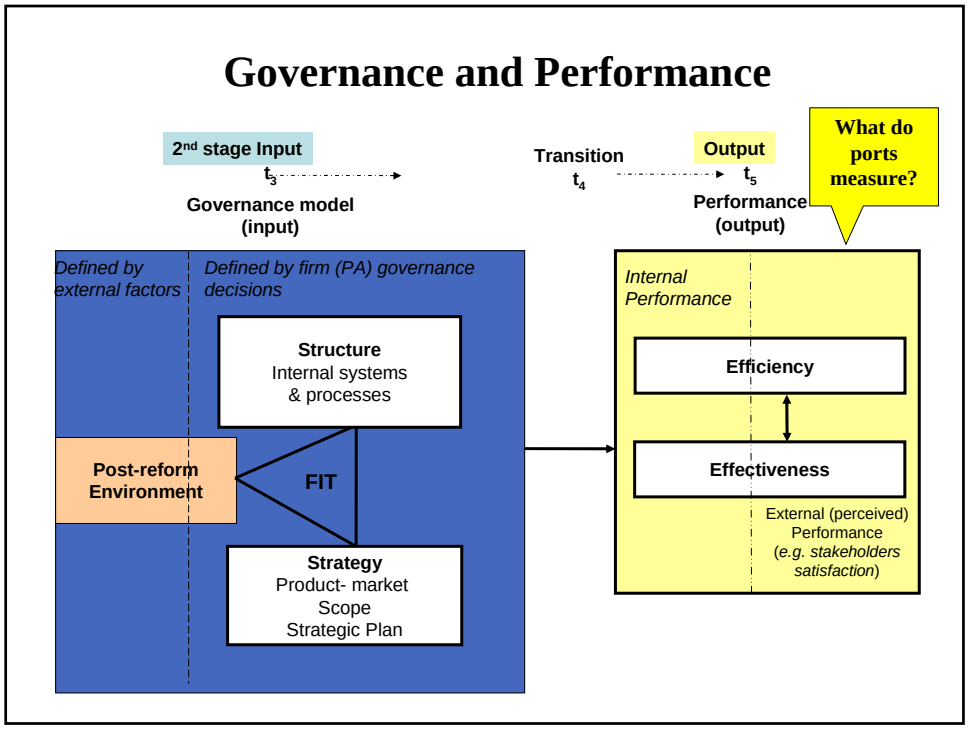
Target Sample

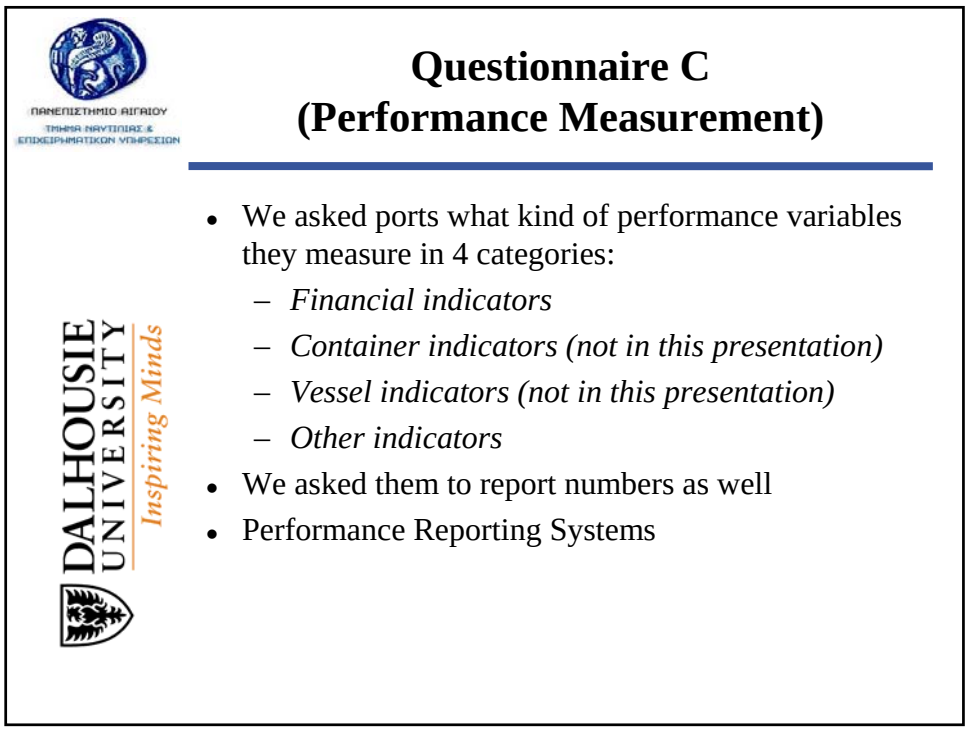
Current Sample

- Mediterranean Sea:
  1. **Turkey** (n=17)
- North America
  1. **Canada** (n=14)
  2. **USA** (n=14)

Target Countries

- Mediterranean Sea:
  1. **Greece** (n=8)
  2. **Italy** (n=4)
  3. **Spain**
- North Europe
  1. **Netherlands** & **Belgium** (n=4)
  2. **UK** (n=3)
  3. **??**
- **South America** ?
- **Asia**?


Governance and Performance
2nd stage Input
t3
Governance model
(input)
Transition
t4
Output
t5
Performance
(output)
What do ports measure?
Defined by external factors
Defined by firm (PA) governance decisions
Structure
Internal systems
& processes
Post-reform Environment
FIT
Strategy
Product- market
Scope
Strategic Plan
Internal Performance
Efficiency
Effectiveness
External (perceived) Performance
(e.g. stakeholders satisfaction)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Questionnaire C
(Performance Measurement)
We asked ports what kind of performance variables they measure in 4 categories:
Financial indicators
Container indicators (not in this presentation)
Vessel indicators (not in this presentation)
Other indicators
We asked them to report numbers as well
Performance Reporting Systems

What Do Ports Actually Measure? Financial Indicators (7 ports)

PORT	A	B	C	D	E	F	G
GOAL	Balanced	Balanced	Balanced	Balanced	-	-	Profits/ return
GOVERNANCE	Mixed	Mixed	Mixed	Public	Mixed	Mixed	Private
Ancillary revenue as % of gross revenue	R	N		Y	R	R	
Ancillary profit as % of net profit	N	N		Y	R	N	
Average days accounts receivable	N	R		Y		R	
Capital expenditure as % of gross revenue	N	N		Y		N	
Debt: equity ratio	R	N		Y		N	
Growth in profit (before taxes)	N	R		Y		N	
Interest coverage ratio	N	N	Y	N		R	
Percent of port revenue from outsourced activities	N	N		N		N	R
Port-related profit as % of port-related revenue	N	N		Y		R	
Return on capital employed	N	N		N		R	
Terminal charges as a % of gross revenue	R	R	R	N		N	
Total revenue collected	N	R		Y		R	
Vessel charges as % of gross revenue	R	R		N		N	
Yield % on share, if publicly traded	N	N		N		N	

What Do Ports Actually Measure? Other Measures

PORT	A	B	C	D	E	F	G
GOAL	Balanced	Balanced	Balanced	Balanced	-	-	Profits/ return
GOVERNANCE	Mixed	Mixed	Mixed	Public	Mixed	Mixed	Private
Employee turnover rate		N	R	N	R		
Employment (full-time equivalents) per tonne handled		N	N	N	N		
Employment (full-time equivalents) per TEU handled		N	N	N	N		
Destinations served this year		N	R	N	N		
Number of customers served		N	R	N	N		
Number of shipping lines that call		N	N	N	N	R	R
Customer complaints per month		N	N	N	N		
Invoice accuracy percent		N	N	N	N		R
Overall customer satisfaction		N	N	N	Y		Satisfied
Stakeholder satisfaction		N	N	N			Satisfied

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Summary and Way Forward

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Let's Summarize

Organizational Culture

- There are indications that organizational culture is very relevant and influential as an antecedent of fit (and good fit leads to good performance)
- Current number of respondents needs to be boosted in target countries

Performance

- Current port surveys indicate very little benchmarking is done or reported. There is a need to develop an instrument.
- Drewry does it on operating and system indicators for container terminals not port authorities. Does not focus on effectiveness.
- An instrument that supports customer and stakeholder management (is of interest to governments too)

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Option 1 for Future Work

- Current number of respondents needs to be boosted in target countries
- Instrument already developed and reliability clear

Target Countries

- Mediterranean Sea:
  1. **Greece** (n=8)
  2. **Italy** (n=4)
  3. **Spain**
- North Europe
  1. **Netherlands** & **Belgium** (n=4)
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- **South America** ?
- **Asia**?

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Option 2 for Future Work

- **Developing (& implementing) new instruments for port performance measurement including measuring customer satisfaction** (Benchmarking has two dimensions: time (year-to-year) and place (against comparable ports from objectives and governance type).)
- Why? For port:
  - To determine how to improve performance and
  - To identify where to concentrate efforts? (translation: where to allocate resources!!)
- **Why? For government:**
  - **To monitor progress on reform.**
  - **To identify models that work.**

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Questions for Discussion

Options are not mutually exclusive; can be concurrent

Missing Variables:

- How should we proceed? Who will participate?

Organizational Culture:

- Are there PPRN Members who would like to assist in developing enough data for definitive research?

Port Performance (as opposed to container terminal performance):

- Is there an appetite for an instrument like the AETRA one that airports use to assess customer satisfaction?
- Is there funding for this process of instrument development and implementation?