

## Secondary Publication



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Date of secondary publication: 05.02.2026

Version of Record (Published Version), Article

Persistent identifier: urn:nbn:de:bvb:473-irb-112949x

#### Primary publication

Acheampong, George; Aryee, Jonas; Andersen, Torben; u. a. (2022): Stakeholder legitimacy and efficiency : the case of innovation at the Port of Tema, Ghana, in: International Journal of Business and Globalisation, Genève [u.a.]: Inderscience Enterprises, vol. 30, no. 1, S. 92–110, doi: 10.1504/ijbg.2022.122317

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## Stakeholder legitimacy and efficiency: the case of innovation at the Port of Tema, Ghana

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**Abstract:** Our study set out to explore the relationship between legitimacy in the form of social license that stakeholders grant the National Single Window Project (NSWP) and port efficiency at the Port of Tema, as well as bounding conditions on this relationship. We collected stakeholder legitimacy data in line with the social license to operate (SLO) framework on the National Single Window Project implementation at the port and stakeholder-perceived port efficiency in Tema. We found that there is an  $\Omega$ -shaped relationship between legitimacy and port efficiency. We also found that port cooperation and relational intensity dampens the relationship between legitimacy and port efficiency. Our study offers an alternative to perspectives of port management that view ports as isolated units which provides a partial understanding of their functioning. We opine that viewing ports as networks of stakeholders provides an improved understanding.

**Keywords:** port efficiency; Africa; legitimacy; social license; stakeholders; innovation; Ghana.

**Reference** to this paper should be made as follows: Acheampong, G., Aryee, J., Andersen, T. and Hansen, A.S. (2022) 'Stakeholder legitimacy and efficiency: the case of innovation at the Port of Tema, Ghana', *Int. J. Business and Globalisation*, Vol. 30, No. 1, pp.92–110.

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Torben Andersen is an Associate Professor, and completed his PhD in CBS and University of Warwick, and he is also working at Department of Business Development and Technology (Herning), Aarhus University, Denmark. His research has been concentrating on structural, strategic and change aspects of HRM and international HRM. He has three periods as a Visiting Professor at the San Francisco State University in 2000, University of Auckland, New Zealand in 2005 and Bamberg University in 2016. He has been teaching in a variety of countries from Iceland, Germany, the UK, China, New Zealand to the USA.

Annette Skovsted Hansen is an Associate Professor of Japanese and Global History at the Aarhus University. She is a former United Nations' international staff member and member of the Consultative Committee on Development Research under the Danish Foreign Ministry. In her research as a historian, she has focused on global networks engendered by private sector cooperation and capacity development in Japanese Official Development Assistance from 1959–2019 and the globalisation of shipping within maritime spheres from 1957–2021. From 2019 until 2021, she headed the research project Port Efficiency and Public-Private Capacity at the Tema Port in Ghana (PEPP).

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## 1 Introduction

Port efficiency has been argued to be crucial for international business and this indicates that if port operations are weak, there is major hindrance to integrating global trade activities (see Arvis et al., 2010; Dee et al., 2006; Devlin and Yee, 2005; Hausman et al., 2013; Lin and Tseng, 2007; Portugal-Perez and Wilson, 2012; Yip, 2012). The literature has often defined port efficiency in terms of the speed and reliability of port services such as on-time berthing, guaranteed vessel turnaround times, guaranteed container connection

(Tongzon and Oum, 2007), total throughput (van Dyck, 2015) and time-related variables (Tongzon, 2001). In terms of determinants of port efficiency, the emphasis has often been on technical resources such as length of pier, draught, warehouse, yard, terminal area, number of quayside cranes and number of reach stackers (de Andrade et al., 2019; van Dyck, 2015) and external factors such as competition (Yuen et al., 2013).

Despite the plethora of studies on the determinants of port efficiency, some important gaps remain in our knowledge of the subject. One of such important gaps is the impact of stakeholders on the efficiency of ports. As can be observed from the paragraph above, most of the literature has focused on technical issues that influence the efficiency of ports. However, as we can glean from the embeddedness theory of sociology most issues of technical efficiency are embedded in social relationships (Granovetter, 1985). In Africa, an exception is an ethnographic study that focused on ports as neoliberal frontiers in Ghana (Chalfin, 2010). Addressing this is particularly important because we currently have little knowledge about how port stakeholder actions can and do influence the efficiency of ports. The knowledge from this study can be a guide for policymakers' decisions about port governance in Ghana and other emerging African countries.

We attempt to remedy the situation in this study and contribute to the literature. We suggest that the National Single Window Project (NSWP) implemented by the government of Ghana at the Port of Tema requires stakeholder legitimacy and support for the efficiency-enhancing benefits to be realised. Cuing from Freeman et al. (2018) we define a port stakeholder as any person with a vested interest in the operations of the Port of Tema. We operationalised legitimacy with the social license to operate (SLO) model from the resource planning and management literature and measured port efficiency as the number of days it takes stakeholders to pass a transaction through the port. The SLO is a legitimating framework that opines that stakeholders have control of resources (herein legitimacy for port managers to implement efficiency enhancing activities) that organisations need (Gehman et al., 2017; Lawer, 2019; Thomson and Boutilier, 2011). Furthermore, we moderated the baseline relationship with the level of cooperation between the port and stakeholder as well as the intensity of the relationship the stakeholder has with the port. Stakeholder cooperation is critical to achievement of organisational objectives such as efficiency as it leads to improved inter-organisational and personal cooperation (Lu et al., 2010). Relational intensity (RI) is very relevant towards the attainment of efficiency because it also signals the level of trust in stakeholder relationship (Adobor, 2006).

Our study and approach enable us to make the following contributions to the literature. First, we contribute to the literature on the determinants of port efficiency. We are able to show that social actors, that is port stakeholders, are key determinants of port efficiency in a major port in West Africa. This will be a significant contribution to the new paradigm in port management that focuses on stakeholders (Lam et al., 2013; Notteboom and de Langen, 2015; Yoshitani, 2018) and an important departure from the over-reliance on technical aspects of efficiency discussed earlier. Secondly, we present a positivist perspective of stakeholder approach to issues management in relation to the Port of Tema. Chalfin (2010) based her earlier studies on interpretivist evidence that reflect the narratives of actors and the observations of the researcher. In this study, we attempt to measure the nature and impact of stakeholder legitimacies on port efficiencies at the port. Finally, we also attempt to measure the boundary conditions that can affect the nature of the relationship between the social license that stakeholders grant an efficiency-enhancing activity at the port and its efficiency (Adobor, 2006; Lu et al.,

2010). The two major bounding conditions we investigate are the level of cooperation the stakeholder has with the port and the intensity of the relationship between port and stakeholder.

From here, we discuss the literature review and hypotheses, research methods, results discussions, and conclusions in that order.

## **2 Literature review and hypotheses**

### *2.1 Stakeholder legitimacies and port efficiency*

Stakeholder theory holds that organisations should not focus on acting only in the interest of its shareholders, but in the interest of other relevant stakeholders (Freeman and Phillips, 2002). These stakeholders will in turn provide the organisation with the legitimacy needed to sustain resource flows to the organisation for its operations (Garvare and Johansson, 2010; Phillips, 2003; Santana, 2012). However, organisations need to intentionally derive legitimacy from those that have the ability to hurt the organisation. Acquiring both types of legitimacy from stakeholders requires stakeholder fairness. There are three elements to stakeholder legitimacy: legitimation of an entity, a claim and a behaviour (Suchman, 1995). Within the context of this study, stakeholders at the Port of Tema may legitimate the Ghana Revenue Authority (GRA) – Customs Unit as an organisation mandated to collect revenues on behalf of the state and their activities to achieve their objective. The NSWP is an activity of the GRA Customs Unit that seeks to enhance their activities but needs the legitimation of the port stakeholders for this to be successful.

Organisations like the GRA Customs Unit need legitimacy for two main reasons (Suchman, 1995):

- 1 credibility and continuity
- 2 support for organisational actions.

Legitimacy leads to persistence, because audiences are most likely to supply resources to organisations that appear desirable, proper or appropriate. The continual flow of resources from stakeholders reduces resource dependency graft. This in turn increases the technical efficiency of the organisation and its transactions for service production at the port (Hillman et al., 2009). However, this requires support for organisational claims and behaviour. This support can be active or passive. If an organisation simply wants a particular audience to leave it alone, the threshold of legitimation may be quite low. Usually, the organisation needs only comply with some unproblematic category of social activity (e.g., ‘doing business’). If, in contrast, an organisation seeks protracted audience intervention (particularly against other entities with competing cadres), the legitimacy demands may be stringent indeed.

There are several types of legitimacy outcomes also social or stakeholder license such as the pyramidal model, three strand model and the triangle model (Gehman et al., 2017). In this study, we operationalise the pyramidal model to explain the link between legitimacy and port efficiency. This model opines that there are social risks to implementing projects that disrupt the functioning of existing social systems. This, consequently, leads to problems with legitimacy (Joyce and Thomson, 2000). The model

argues that there are four levels of effects that projects and their managers can expect from stakeholders – these are withdrawal/rejection, acceptance, approval and identification (Black, 2013; Thomson and Boutilier, 2011). Legitimacy differentiates a rejected project from an accepted project. However, to ensure that projects are secure from stakeholder disruptions, organisations and projects need to aim at approval that requires credibility, or even higher at identification that requires stakeholder trust (Black, 2013; Boutilier, 2014).

In this study, we contend that legitimacy and its higher order forms of credibility and trust should lead to a higher level of efficiency. This is because the NSWP can operate continually with less disruptions from stakeholders whether covertly or overtly (Suchman 1995). Stakeholders will guarantee efficiency of operations with continually access to resource flows from the environment. This will reduce the resource dependency problems the organisation will likely face from stakeholders if it does not acquire the SLO (Hillman et al., 2009; Pfeffer and Salancik, 2003). For example, when unions and forwarding agents strike, economic activities are likely to be halted for a resolution by the Ministry of Transport of Ghana. This leads to time losses that can affect value chains of industries that depend on the port. The empirical evidence supports this theory (see Mazzucato, 2013; Prno and Slocombe, 2012; Richert et al., 2015). Therefore, any efficiency-enhancing activity at the port requires that legitimacies are acquired from these actors. These stakeholders will grant social license if the organisation proves economically worthwhile, credible and trustworthy (Boutilier et al., 2012; Moffat and Zhang, 2014). When the NSWP receives stakeholder legitimacy, it will lead to overall port efficiency as stakeholders will not engage in disruptive behaviour for port functioning. Consequently, we hypothesise that:

H1 Stakeholder legitimacy has a positive effect on port efficiency.

## *2.2 Stakeholder legitimacies, bounding conditions and port efficiency*

Ports usually involve custom officials, clearing and forwarding agents, stevedores, shipping lines, importers, transporters and the port administration (Brooks and Cullinane, 2006). As a multi-stakeholder environment, it requires constant cooperation among stakeholders to deliver quality services to all those that depend on it. However, due to the differential nature of stakeholders, there is usually a tendency for stakeholder interests to diverge (Julius, 1997). Consequently, this makes it very difficult for stakeholders to cooperate fully without conflicts emerging. At the time of its introduction in 2017, the NSWP had significant challenges and got a backlash from clearing and forwarding agents (Adom Online, 2017). This hampered its operations and the operational efficiency of the port. This reflects a potential conflict of interests between the GRA Customs Unit and these agents. These are initial bottlenecks associated with the implementation of new programmes within any project context, especially innovative projects that disrupt the community structure and power systems (Christensen, 2006; Christensen et al., 2015). Under such circumstances, stakeholder cooperation is critical to the achievement of project and organisational goals. The cooperation theory suggests that when stakeholders cooperate, they engage in much more deliberate information processing and openly discuss differences aimed at mutual benefit between the organisations (Lu et al., 2010). This is because stakeholders believe that their organisational goal achievements are

interlinked – when one stakeholder moves towards their goals, it has a positive effect on the goal achievement of the other stakeholders.

The empirical literature supports this theory (see Gianfranco et al., 2014; Huo et al., 2018; Zhang and Zhu, 2020). However, in this hypothesis, we emphasise the moderational effect of stakeholder cooperation on the relationship between legitimacy and efficiency, not the direct effects. The process in stakeholder cooperation is engagement (Greenwood, 2007). If the legitimacy-seeking organisation or project engages the legitimacy-giving stakeholder, it increases the likelihood that it will gain legitimacy. This can be by showing the plausible economic future of the project or organisation (Carpenter et al., 2015) to gain initial legitimacy and avoid the rejection of the project. Without such engagement, the project is likely to be rejected upfront as no legitimacy will be granted for such a project. Another effect of engagement is that it leads to the creation of mutual expectations and values. Wong (2005) has argued that cooperation among stakeholders or the lack of is a function of the relationship between the values of the stakeholder and the nature of the port policy they have to cooperate with. If the policy aligns with their own values, then they are most likely to cooperate, and not if otherwise. Hence, stakeholder cooperation will strengthen the relationship between stakeholder legitimacy and port efficiency. We therefore hypothesise that:

H2 Stakeholder cooperation positively moderates the relationship between stakeholder legitimacy and port efficiency.

Another boundary condition that can affect the relationship between stakeholder legitimacy and port efficiency is the extent of RI the stakeholder has with the port. The relational view is one of the new mechanisms through which organisations can gain higher rents compared to their competitors (Dyer and Singh, 1998; Lavie, 2006). The view holds that, economic rents are gained from embedded relationships (dyads and networks) between individual economic actors – not the actors themselves. That is, “a supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners” [Dyer and Singh, (1998), p.662]. Dyer and Singh (1998) argue that the sources of relational rents are relation-specific assets, knowledge sharing routines, complementary resources and assets as well as effective relational governance. Borgatti and Foster (2003), in a review of network paradigms in organisational research, note that there are four main consequences of the relational dimension. These are structural social capital, social resource access, contagion and environmental shaping. Lavie (2006) extended this idea by suggesting that firm relationships represent another type of resource that firms can leverage to their advantage. He concludes that the nature of the firm relationships is particularly critical in networked environments.

We argue in this hypothesis that the level of a stakeholder’s relationship with the port is due to certain expectations of that stakeholder (Reynolds et al., 2006). Therefore, when a stakeholder’s interests are not met in the exchange relationships he or she holds in the relationship, then that stakeholder can be disruptive and poison the network of stakeholders or at the least withdraw legitimacy for the focal organisation’s actions (Adongo et al., 2019). Again, Hoskisson et al. (2018) argue that, in pursuing relational governance, the firm and its stakeholders employ informal self-reinforcing safeguards, such as trust rather than formal safeguards, such as monitoring (Dyer and Singh, 1998).

These safeguards can have an accentuating or mitigating impact on the relationship between legitimacy and efficiency depending on the gains the stakeholder makes from the relationship with the organisation, and the project implemented relative to the effort invested in the relationship. Consequently, we hypothesise that:

H3 RI moderates the relationship between stakeholder legitimacy and port efficiency.

### **3 Research methods**

#### *3.1 Context of the study: Ghana National Single Window*

Ghana's industrial strategy post-independence from the British has been a mixed bag at best (see Dana, 2007). The various regimes have favoured different industrial policies. However, since 1992 when the country adopted the free market with its attendant neo-liberal policies Ghana has participated strongly in global trade (Boadi et al., 2017). The participation global trade has led to significant reforms at Ghana's main Port of Tema. One such significant reform is the technological improvements in the customs software used at the port.

SLO is, usually tied to a specific organisational intervention (Boutilier and Zdziarski, 2017). In this project, we focus on the social license that stakeholders grant the NSWP implemented at the Port of Tema. The Single Window environment, which is mostly referred to as the GCNet System, is a platform that requires stakeholders involved in cross border trade to submit appropriate papers through a single-entry point in order to meet all trade-related regulated requirements. GRA (Customs Division) implemented it to block out barriers to trade facilitation and ensure that the totality of trade-related proceeds was not compromised. Integrated in the Single Window are ministries, departments and agencies (MDAs) that are involved in trade-related activities, interaction with customs, trade involving international clearance, Ghanaian supervisory procedures and payments as well as some private sector bodies such as shippers, freight forwarders, importers and exporters. Mainly importers, freight forwarders, carriers and regulatory agencies employ the Front-End System (FES) of the Single Window to communicate and carry out important import and export processes electronically. However, the back-end application lies with the Ghana Customs Management Systems. They process the input from the FES. The Single Window allows the GRA (Customs Division) to perform all required protocol. Some of the systems implemented as part of the NSWP include Pre-Arrival Assessment Reporting Systems (PAARS), Ghana's Trade Hub (GTH), Joint Inspection Management Information System (JIMIS), National Integrated Risk Management System (NIRMS), the Customs House Management System (CHAMS), Bay Allocation Management System (BAMS), Used Vehicle Application and Courier Application. The expected net effect of these is that when the Port of Tema became a paperless port, in 2017, all internal custom bottlenecks involving transit corridors were eliminated along with human interventions in port transactions and the Long Room.

#### *3.2 Data collection*

We collected data from port stakeholders identified with the Business Development unit of the Ghana Port and Harbour Authority. The list comprised all stakeholders that had a

valid interest at the port. The categories included shipping lines, stevedores, clearing and forwarding agents, haulers, and the local community. We are weary of the differing impacts of different stakeholders on port operations. However, we seek to capture this community effect. Consequently, focusing on just one stakeholder group will lead to a loss of significant information as a result of the interactional loss. Stakeholders were asked questions in relation to port efficiency, social license, cooperation (a couple of questions mentioned as an example), RI and other organisational variables. An attempt was made to interview all the 205 stakeholders that were identified in June 2019 by the research team. However, only 173 of the questionnaires returned were usable.

### *3.3 Measures and operationalisations*

#### *3.3.1 Dependent variable: port efficiency*

This variable is measured as the number of days it takes a stakeholder to pass a transaction through the current port architecture. The approach is in line with the time-based approaches to efficiency in economic studies (Olah et al., 2018). This measure accounts for all types of stakeholders including shipping lines, regulators, port administrators except importers or declarants. This is because efficiency must benefit all stakeholders to be self-reinforcing.

#### *3.3.2 Independent variable: stakeholder legitimacy*

We operationalise this variable with the SLO (Boutillier and Thomson, 2018). The approach measures the legitimacy stakeholders offer to specific firm activities or major projects. The SLO is an appropriate measure of legitimacy because while it is expressly difficult to measure legitimacy, it is easy to measure SLO that has identified and proven measurement scales. The SLO's appropriateness is further reinforced by the fact that both SLO and legitimacy reflect stakeholders' evaluations of an organisation and its actions (Gehman et al., 2017).

#### *3.3.3 Moderators*

We recognise that there are possible boundary conditions between the dependent and independent variable. We test the effects of two boundary conditions: stakeholder cooperation and RI. We measure stakeholder cooperation as the level of cooperation the stakeholder has with the port on a scale of 1 to 5, with 1 as the lowest level of cooperation and 5 as the highest. We also measure RI as the average percentage of the stakeholder's time in a month spent on dealing with port-related issues.

#### *3.3.4 Controls*

We also controlled for several other firm level factors that can affect the relationship between stakeholder legitimacy and port efficiency. The international business literature is replete with issues of liability of foreignness (Acheampong and Dana, 2017). In such situations, the stakeholder will not have the legitimacy locally to be theoretically able to influence efficiency, as it must contend with its own liabilities. Consequently, we control for the foreignness of the stakeholder organisation. Secondly, if the stakeholder

organisation has international certification, it can influence efficiency by relying on the legitimisation offered by the international certificate (Lindlbauer et al., 2016). Thirdly, the type of legal structure the stakeholder operates can also influence the level of legitimacy it can offer (Delmar and Shane, 2004) the port to achieve efficiency. Furthermore, if a female manager leads the stakeholder organisation, there is some level of heterogeneous resources available as most Ghanaian organisations are male dominant, and recent evidence suggests that females bring new sources of resources to these organisations (Acheampong, 2018; Liu et al., 2014). Finally, the size of the stakeholder organisation matters as larger firms will have access to bigger resource pools (Acheampong et al., 2017; Aldrich and Auster, 1986) and also influence the legitimisation process and, as a consequence, the efficiency of the port.

### *3.4 Analytical approach*

We estimate the relationship between the dependent variable and the independent variable with a Poisson regression approach. We validate the use of this estimator because the histogram test on the dependent variable (see Appendix) and the deviance-goodness-of-fit chi-square test both validate the use of this estimator. This is because the dependent variable is a count variable in days, hence requiring a Poisson estimation strategy (Wooldridge, 2015). We also performed an instrumental variable Poisson regression due to possible endogeneity of the independent variable. We use power, connections, and information centrality of the stakeholders as the instruments for this regression. We also perform collinearity diagnostics reported in Appendix.

## **4 Results**

Tables 1 and 2 present the results of the current study. Table 1 presents the summary and descriptive results with the means, standard deviations (SDs) and pairwise correlations between all the variables. Table 2 presents the results of the Poisson regression estimates with six different models to help understand how stable our models are to different specifications.

## **5 Discussion of findings**

Port efficiency is one of the dominant issues at the intersection of maritime and international business, and trade literature. There has been a plethora of studies on the issue, especially on its determinants. Yet, we know very little about a stakeholder approach to understanding port efficiency in Africa. We set out in this study to unravel those relationships by estimation of the link between SLO, as legitimate license stakeholders grant to efficiency enhance activities port managers and administrators seek to achieve at the Port of Tema in Ghana. We focus our attention on the NSWP that has been implemented to achieve a paperless port that can facilitate international business and trade. In the following paragraphs, we discuss some of our key findings.

**Table 1** Means, SDs and correlations

<i>Variables</i>	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>
Port efficiency	3.48	1.98	1												
Social license to operate	2.82	0.46	-0.13	1											
Foreign stakeholder	0.14	0.35	-0.05	-0.01	1										
Female top manager	0.22	0.42	-0.06	0.11	0.30	1									
Quality certificate	0.28	0.45	0.02	0.12	0.66	0.33	1								
Port cooperation	3.35	0.71	-0.04	0.25	0.10	0.12	0.03	1							
Subsidiary	0.08	0.28	0.22	0.00	0.40	0.28	0.30	-0.05	1						
Sole proprietorship	0.31	0.46	-0.02	-0.29	-0.24	-0.15	-0.31	-0.13	-0.03	1					
Limited liability company	0.57	0.50	-0.16	0.23	0.26	0.10	0.16	0.07	0.02	-0.77	1				
Stakeholder size	2.65	0.87	0.07	0.14	0.20	0.21	0.37	0.15	0.13	-0.44	0.30	1			
Connections	0.02	0.01	0.04	0.22	0.08	0.00	0.10	0.10	0.01	-0.32	0.33	0.20	1		
Social power	0.33	1.10	0.37	-0.01	-0.01	0.02	0.16	-0.04	0.07	-0.08	-0.03	0.30	0.13	1	
Information access	0.06	0.02	0.09	0.36	0.14	0.09	0.15	0.12	-0.01	-0.46	0.36	0.34	0.72	0.16	1

**Table 2** Poisson regression estimates of perceived port efficiency

<i>DV: port efficiency</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>	<i>M4</i>	<i>M5</i>	<i>M6</i>
Foreign stakeholder	-0.245 (0.210)	-0.174 (0.198)	0.080 (0.181)	-0.193 (0.189)	-0.130 (0.184)	-0.210 (0.198)
Female top manager	-0.232 (0.138)*	-0.229 (0.136)*	-0.346 (0.135)**	-0.154 (0.127)	-0.171 (0.128)	-0.194 (0.131)
Quality certification	0.077 (0.158)	0.034 (0.153)	-0.006 (0.130)	-0.004 (0.137)	-0.019 (0.137)	0.004 (0.148)
Port cooperation (PC)	0.211 (0.055)***	0.156 (0.065)**	0.013 (0.081)	0.045 (0.066)	0.544 (0.102)***	0.115 (0.065)*
Subsidiary	0.516 (0.227)**	0.492 (0.215)**	0.265 (0.229)	0.506 (0.196)***	0.447 (0.207)**	0.523 (0.207)**
Sole proprietorship	0.041 (0.162)	-0.022 (0.163)	-0.360 (0.138)***	-0.321 (0.147)**	-0.345 (0.156)**	-0.201 (0.156)
Limited liability company	-0.135 (0.157)	-0.215 (0.158)	-0.465 (0.140)***	-0.356 (0.130)***	-0.374 (0.132)***	-0.325 (0.144)**
Stakeholder size (log)	0.171 (0.055)***	0.155 (0.054)***	0.094 (0.053)*	0.053 (0.056)	0.060 (0.057)	0.106 (0.055)*
Relational intensity (RI)	0.238 (0.085)***	0.224 (0.084)***	0.143 (0.087)	0.203 (0.076)***	0.202 (0.077)***	1.411 (0.354)***
Social license to operate (SLO)		0.109 (0.070)*	0.435 (0.117)***	1.030 (0.224)***	0.418 (0.093)***	0.259 (0.089)***
SLO * SLO				-0.215 (0.049)***		
SLO * PC					-0.178 (0.036)***	
SLO * RI						-0.433 (0.125)***
<i>N</i>	173	170	169	170	170	170

Notes: Deviance-goodness-of-fit test = 161.234 prob. >  $\chi^2(163) = 0.5244$ .

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

First, we hypothesised that there is a positive relationship between stakeholder legitimacy and port efficiency. That is, as stakeholder legitimacy increases, the number of days required to complete a transaction should drop. However, the results show an  $\Omega$ -shaped relationship between the two variables. This suggests that initially, there is a negative relationship between SLO and past 2 SLO points, the relationship returns positive effects. This means that our arguments in Hypothesis 1 are unsupported till stakeholders offer legitimacy past the two SLO points that is the turning point. This is not surprising, as in the SLO framework, point 1 is withdrawn legitimacy. Therefore, we expect it to be costly for the stakeholder as there is no mutual agreement between the stakeholder and port

managers. Consequently, our findings confirm the pyramidal SLO theory within the broader stakeholder legitimacy theory (Moffat and Zhang, 2014; Thomson and Boutilier, 2011).

Second, we tested the interactional relationship of stakeholder cooperation on relationships between stakeholder legitimacy as social license and port efficiency. We found a negative moderational effect on port efficiency – that is, stakeholder cooperation improves the relationship between SLO and PE. That is, high levels and low levels of stakeholder cooperation are associated with low levels of social license. However, in such situations, the high levels of cooperation results in inefficiency while the lower levels result in port efficiency. Stakeholder's expectations of the NSWP can explain this finding (Purvis et al., 2015; Hayibor, 2012). If the stakeholder cooperates yet offers low, SLO expects a significant socio-economic cost from the political instability that the NSWP will create and hence will be disruptive, while the reverse is true for stakeholders that offer little cooperation and SLO. This situation arises largely because of divergent stakeholder interests (see Julius, 1997).

Finally, we tested the moderational relationship between RI and SLO on port efficiency. We find that RI also improves the relationship between SLO and PE in the Port of Tema context – high levels of RI are associated with low SLO, which results in port inefficiency, while low levels of RI associated with high SLO are associated with port inefficiency as well. This lends credence to the argument in the literature on social exchange theory, which suggests that stakeholders expect rewards for their legitimation to focal organisational activities (Blau, 1968; Cropanzano et al., 2017). If unrewarded, this can affect organisational outcomes such as efficiency.

### *5.1 Implications for theory and practice*

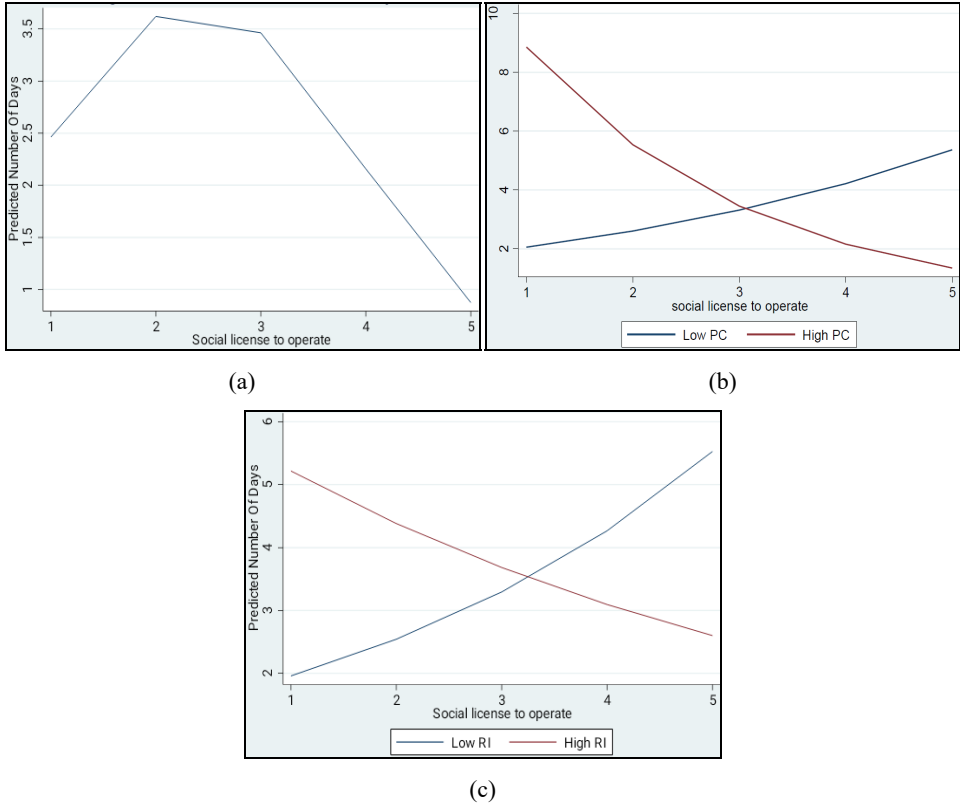
The study findings present implications for the academy and practitioners. We start by discussing the theoretical implications followed by suggestions for managerial practice.

#### *5.1.1 Theory*

First, the current study presents and contributes to the emerging stakeholder issues that have become critical to the achievement of port efficiency in global maritime studies (Lam et al., 2013). This is an extension of the stakeholder theory, particularly the legitimacy sub-theory (Suchman, 1995). Our findings suggest that when stakeholders offer their support for the port, efficiency-enhancing projects for its continuity and credibility by reducing their dependencies, it has a positive effect on efficiency (Suchman, 1995). This is because this legitimacy serves as currency that the port managers can utilise to achieve efficiency without stakeholder disruptions (Hillman et al., 2009; Deephouse, 1996). Secondly, we extend the pyramidal SLO literature from its resource management origins to maritime and emerging economy markets (Boutilier, 2017). This is an important extension as stakeholder groups can create political instability and disaffection around major projects that change industrial social structure (Boutilier, 2017). This will then limit the efficiency-enhancing potential of the focal organisation. We also present a contingent view of the SLO and its influence on port efficiency in Tema. We suggest that, theoretically, the SLO does not hold under all conditions, as RI and stakeholder cooperation influences this relationship. Finally, we also present a positivist perspective to stakeholder management and effects at the port specifically, as

all earlier studies have focused on using interpretivist dimensions (Chalfin, 2010). We conclude that perspectives of port management that view ports as isolated units provide a partial understanding of their functioning. We have found that viewing ports as networks of stakeholders provides a better understanding.

**Figure 1** (a) Effect of SLO on port efficiency (b) Interaction effect of stakeholder cooperation (PC) (c) Interaction effect of RI (see online version for colours)



### 5.1.2 Practice

First, port managers need to understand that legitimacy is very important to achieving port efficiency. The effect of legitimacy has an n-shaped effect on port efficiency. This suggests that, if stakeholders withdraw their legitimating currency, stakeholder actions will disrupt port activities, which will lead to inefficiencies. Such disruptions include strikes, work to rule processes and bad press. In order to achieve the highest form of legitimacy – psychological identification, port managers must engage in activities such as providing regular information to stakeholders, consulting them on major technological changes to port operations, develop shared values with the stakeholders, be seen to be fair to all stakeholders and finally also respect the interests of all stakeholders. Secondly, it is important for managers to note that stakeholder cooperation and RI bound effects of stakeholder legitimacy on port efficiency. This effect is a positive one, because when these two factors increase, port efficiency also improves. Consequently, engaging

stakeholders to achieve RI and their overall cooperation with port managers is very critical to achieving port efficiency. While this is obvious, we provide the empirical evidence for this claim. Managers must be aware that stakeholder engagement is a plus-sum game, but can easily become a zero-sum game if stakeholders withdraw legitimacy.

## 5.2 Directions for future research

While this study makes significant contributions, we want to draw attention to a few directions for future research. First, we utilised the pyramidal SLO measure of organisational legitimation. However, as Gehman et al. (2017) note, there are several of such measures. These measures can or may have differential effects. Future studies can consider different measures to evaluate the outcomes against what we have found. Secondly, we utilised unique cross-section data on the Port of Tema to arrive at our results. While this dataset offers us the opportunity to understand current stakeholder issues and their implications for port efficiency, they also only provide a limited view of stakeholder happenings. We recommend future panel studies utilising longitudinal datasets to understand enduring stakeholder effects on port efficiency.

## 6 Conclusions

In this study, we set out to explore the relationship between legitimacy in the form of social license that stakeholders grant the NSWP and port efficiency at the Port of Tema. We found that there is an  $\Omega$ -shaped relationship between legitimacy and port efficiency. We also found that stakeholder cooperation and relational intensity dampens the relationship between legitimacy and port efficiency. Stakeholder cooperation and relational intensity both seem to improve the efficiency of the port.

## Acknowledgements

Funding for this study was provided under the Danish Ministry of Foreign Affairs Grant 18-M02-AU. We thank our colleagues on the PEPP project, Casper Andersen, Martin Arvad Nicolaisen, Alfred Djan, Phillip Stenmann Baun, and Karen Degn, as well as Brenda Chalfin, Henrik Sornn-Friese, Morten Tinning, and Lindsay Whitfield, and the anonymous reviewers for their valuable comments. All errors and shortcomings remain the responsibility of the authors.

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## Appendix

**Table A1** Collinearity diagnostics

<i>Variable</i>	<i>VIF</i>	<i>Tolerance</i>
Port efficiency	1.41	0.7116
Social license to operate	1.35	0.7417
Foreign stakeholder	2.25	0.4453
Female top manager	1.2	0.8322
Quality certificate	2.25	0.4448
Port cooperation	1.16	0.8613
Subsidiary	1.37	0.7285
Sole proprietorship	3.45	0.29
Limited liability company	3.09	0.3234
Stakeholder size	1.58	0.6339
Connections	2.22	0.4514
Social power	1.34	0.747
Information access	2.79	0.3586
Mean VIF	1.96	

**Table A2** Determinants of social license to operate (SLO)

<i>DV: social license to operate (SLO)</i>	<i>MI</i>
Foreign stakeholder	-0.522 (0.132)***
Female top manager	-0.057 (0.115)
Quality certification	0.339 (0.109)***
Port cooperation (PC)	0.398 (0.050)***
Subsidiary	0.214 (0.160)
Sole proprietorship	0.615 (0.133)***
Limited liability company	0.525 (0.128)***
Stakeholder size (log)	0.085 (0.053)
Relational intensity (RI)	0.009 (0.074)
Connections	-9.026 (5.625)
Power	-0.036 (0.022)
Information access	13.722 (2.991)***
R <sup>2</sup>	0.79
N	171

Note: \* $p < 0.1$ , \*\* $p < 0.05$  and \*\*\* $p < 0.01$ .

**Figure A1** Histogram test of dependent variable (see online version for colours)

