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The Moderating Effect of Stakeholders Management on the Relationship Between Organizational Characteristics and Performance of African Ports

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Abstract

The main objective of this study was to determine the moderating effect of stakeholders' management on the relationship between organizational characteristics and the performance of seaports in Anglophone Africa. This study adopted a positivist research philosophy with a descriptive cross-sectional census survey design. Structured questionnaires were employed to collect primary data targeting executive managers of container-handling seaport terminals in Africa who are knowledgeable in port operations and management. Additional published data was also obtained from the websites of some of the ports. The response rate was 83.6%. The reliability and validity of the indicator items were ascertained through diagnostic tests. The use of SRMR and NFI confirmed model fitness. Partial Least Squares Structural Equation Modeling using Smartpls 4.0 software was used for data analysis and measurement model estimation to test the null hypothesis that

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there is no significant moderating effect of stakeholders' management on the relationship between organizational characteristics and the performance of seaports in Africa. The finding established a positive and significant moderating effect of stakeholders' management on the relationship. The study concluded that sound and competent stakeholders' management enhances port container terminal performance thereby creating a competitive advantage for ports in Anglophone Africa. The study adds to new knowledge, theory, policy, and practice by recommending that seaports in Africa should mitigate possible conflicts from stakeholders while developing new ports or expanding existing ports by embracing stakeholder theory.

Keywords: Organizational Characteristics, Partial Least Squares Structural Equation Modeling, Container Handling Terminal, Measurement Model Estimation, Stakeholders Management

Introduction

Given the present competitive situation facing many ports, managers of those ports must identify and understand the characteristics that are critical for achieving acceptable levels of sustainable performance (Felicio, Caldeirinha, & Coelho, 2013). Organizational characteristics are proven to explain an organization's general performance in several ways, and hence recognizing them becomes necessary while considering the development of a new institution, expanding an existing one, and improving its performance, market share, and growth (Waal, 2011). The definition of organizational performance and its measurement continues to compound scholars due to its complexity. In this regard, the concept of performance needs to be clearly understood (Santos & Brito, 2012). Performance has been proven to be influenced by their organizational characteristics (Felicio et al., 2013, 2015). The moderating role of stakeholders' management in the relationship between organizational characteristics and performance needs to be explained. This is because due to individual varying interests of many stakeholders if common interests are not found, performance suffers due to emerging conflicts. Accordingly, stakeholder management becomes more critical for organizational performance. Striking a balance amongst stakeholders' varied concerns is therefore critical for stakeholders' management and performance (Lawer, 2019).

The natural resource-based view (NRBV), the dynamic capabilities theory (DCT), and the stakeholder's theory offer explanations and information on the anchorage of this study. The NRBV and DCT explain the organizational characteristics and performance. The NRBV focuses on new contexts where organizations have established new capabilities, like eco-innovations, and new management tools like governance reforms which enable ecologically

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maintainable performance (Azorin, Claver-Cortes & Moliner, 2007). DCT accounts for the sustenance of competitive advantage by building new resources and capabilities like information communications technology. This includes stakeholder integration especially in fast-changing environments (Teece, Pisano & Shuen,1997) The stakeholder theory explains systematic management of stakeholders' interests to avoid conflicts especially where they influence managers on the use of resources and capabilities which leads to good performance (Freeman 1984).

Seaports act as interfaces between interlinking modes of transport including maritime, rail, road, and inland waterways. According to UNCTAD (2018), ports from developing countries command 72 percent of world container trade out of which African share is only one percent. The main challenges facing African ports are inefficient operations, lengthy cargo clearing and dwell times, inadequate port and hinterland infrastructure; lengthy documentation processes, and low levels of automation. Utilization of technology by seaports for productivity has led to a 36 percent higher profit than competitors. The African Seaport CEOs Forum (2021), recommended measures that if implemented would improve the performance and competitiveness of African seaports which included among others, improved public investment structure, eradication of operational inefficiencies, and ambitious governance reforms to mobilize and attract public-private partnerships for financing (Port Strategy, 2021). The motivation behind this study was to respond to the concerns regarding poor performance by the majority of seaports in Africa in comparison to well-established seaports in the developed world and the desire to find a solution to the problem. Furthermore, the fact that some of the seaports had undergone governance reforms but had not shown any considerable performance improvement needed to be explained. The research attempted to unravel the cause of inferior performance as cited in these scenarios and especially the effect of stakeholders' management on the relationship between the port characteristics and performance of seaports in Africa. The aim is to achieve high productivity and sustained performance (Notteboom, Pallis & Rodrigue, 2022).

Literature Review

Organizational Characteristics

Organizational characteristics refer to aspects of the organizations that can be identified particularly concerning performance. These characteristics are present in the form of internal and natural environment resources of the organization. These characteristics include size, age, ownership, and diversification (McMahon, 2012; Handoyo, Erlane & Soedarsono, 2023)). Studies by Sunitiyoso, Nuraeni, Pambudi, Inayati, and Tiara (2022) and Felicio et al. (2013, 2015) also identified some determinants of performance

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such as organization's size, infrastructure, age, strategic location, information communications technology (ICT), efficiency level, costs, reliability, and the region's economic expansion. The size of a firm can be measured in terms of its physical size, number of employees, and production equipment that it has. Studies have indicated that large-sized firms tend to give better performance than smaller ones (Handoyo et al., 2023). They add that the age of an organization and the many years of experience may result in a higher possibility of better industry performance. Birley and Westhead (1990) aver that a long period of existence enables the firm to build resources and capabilities that may lead to enhanced performance. Strategic location refers to proximity to the main trade routes by sea, air, rail, and road with highly efficient infrastructure. The proximity of an organization to these resources is a catalyst for higher performance (Ju, Xie & Tang 2023). Organizations that lack the advantage of strategic location can leverage efficiency and technology to enhance performance (Felicio et al., 2015). Infrastructure refers to the size and quality of an organization's internal capability. In a seaport environment, it refers to the quality of physical structures like berths, draught, yards, quays, equipment, and road and rail infrastructure for entry and evacuation of cargo (Rodrigues, 2017). Costs of production and transport, contribute towards an organization's charges and are known characteristics of performance because costs of goods and services are a matter which users will reflect when choosing goods and services which are similar. Reliability of services, efficiency, and good reputation are other factors that give rise to better performance. Some customers would be willing to pay slightly more for efficiency (Notteboom & Rodrigue, 2005).

Stakeholder Management

A stakeholder is any individual or group that can impact or be impacted by the activities or purpose of a company or an organization Freeman (1984). Stakeholders come from varied categories including shareholders, environmentalists, suppliers, freight companies, transporters, employees, local community, and government agencies which leads to complex decision-making processes with differing and conflicting interests. Stakeholders' management is the method by which stakeholders' relationships are organized, improved, and monitored. The process encompasses systematically identifying key stakeholders; evaluating their needs and expectations; and scheduling and executing various tasks as a way of engaging with them. The first efforts made on a stakeholder-based approach to port management studies can be traced back to studies by (Frankel, 1989). Both researchers concluded that the intentions of a port managing organization differ from those of conventional commercial firms thus the necessity for a case-by-case approach which depends on the type of organization and its mission and objectives as

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well as related factors such as level of rival competition, and the location of the country where it resides and other factors.

The initial effort to identify and classify stakeholders came from the original works of (Eden & Ackermann, 1988 who identified four categories of stakeholders as those who take a leading role in the planning process of seaports, those who think alone, those who take part in making decisions, and those who always strive to be informed. The first broad effort to outline stakeholders' management of the seaport environment was made by Notteboom and Wilkenmans, (2002). when they acknowledged three diverse classifications as internal stakeholders and three categories of external stakeholders namely economic/contractual external stakeholders, public policy stakeholders, and community stakeholders, they further classified stakeholders based on their participation in the process of seaport planning and their impact on the process. Stakeholder theory and stakeholder management will become increasingly important to achieve sustainable port development given the rising complexity of the port environment as applied to the strategic port planning process (Dooms, 2010). Furthermore, the assessment of strategy for ports and shipping would need to consider environmental concerns, technological advances, market share, economic objectives, and level of service (Frankel, 1989).

Seaport stakeholders institute clusters and personalities concerned with the activities and outcomes of a port as an organization upon which the port relies for attaining its objectives. Employees and suppliers are examples of stakeholders who have an economic interest in the seaport; others are clients of the many players in the port's intricate value chain who comprise another group of stakeholders (Zaucher & Kreiner, 2021). He adds that focused attention on seaport stakeholders' management research is still very limited in academic research as port activities and new port development and expansions increasingly experience opposition from stakeholders and specifically the local community due to the negative impact of port activities involving environmental pollution. When shareholders, market players, and managers who are usually driven by profit, differ on their priorities and compromise social well-being and the environment then these may lead to conflicts (Lam & Yap, 2019). The need for continued research in this area influenced the need to carry out new research, especially for the seaports in Africa.

Organizational Performance

Organizational performance is about efficiencies and effectiveness in the use of the organization's possessions and the attainment of its targets (Cera & Kusaku, 2020; Santos & Brito, 2012). Good performance indicates institutional effectiveness and competence in utilizing its capital as a contributor to the economy of a nation (Contu, 2020). Organizational

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performance involves the real output or outcome of an organization when compared to the anticipated outputs. The performance of organizations concerns various experts in the fields of strategic planning, finance, legal, operations, and corporate development (Perez et al., Gasquez-Abad, Martin-Carillo & Fernandez, 2007). According to Richard, Devinney, Yip, and Johnson (2009), organizational performance incorporates three precise zones of organizational outcomes namely product market performance (sales, market share, etc.); financial performance (incomes, return on capital, return on shares, etc.) and operational performance. Performance appraisal is requisite for the growth of any economic activity. They further state that performance should be measured through a yardstick since a company's performances have to be equated with each other for comparative purposes. According to UNCTAD (2018), most performance measurements can be classified as efficiency, effectiveness, timeliness, quality, and productivity. In the context of seaport terminals, performance measures are identified as berth cargo throughput, operational efficiency level, cranes moves per hour, truck turnaround time, vessel turnaround time, terminal charges, and vessel and truck turnaround which are crucial factors of performance for terminal operators World Bank (2007).

Organizational Characteristics, Stakeholders Management and Performance

Empirical evidence exists to confirm that organizational characteristics influence organizational performance. It is the role of stakeholder management in the relationship that has compounded researchers in the past. Stakeholder theory's popularity in port management studies in the recent past has been very insightful (Dooms, 2018; Acheampong, Aryee, Andersen & Hansen, 2022; Kothuis & Slinger, 2018). These studies include a wide variety of internal stakeholders, e.g., those who are directly part of the port administration, shareholders, managers, employees, unions, and external stakeholders who include economic players investing in the port area like transporters, concessionaires, port service providers and freight forwarders to organizations positioned in the hinterland or foreland like multimodal transport operators and shippers, local community, common groups of interest, public policy stakeholders and watchdogs. Focused attention needs to be paid to local communities and how they are represented by the port management body given the growing impact of local communities on strategic decision-making and subsequent project implementation (Dooms, 2018). Other researchers identified stakeholder management concerns as environmental protection, corporate social responsibility, greening initiatives, conflict resolution, and disclosures as a source of competitive advantage that leads to sustained performance (Dooms 2018; Calvao, Wang & Mileski, 2016). This

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study focused on the sub-variables of environmental issues, corporate social responsibility, and conflict resolution to measure stakeholders' management concerns.

The natural environment which is championed by the NRBT, new greenfield infrastructure developments, corporate social responsibility, disclosures, and conflict resolution are major concerns for port stakeholders (Acheampong et al., 2022; Brooks, Knatz, Pallis & Willemsmeir, 2020). In seaports, the natural environment is seen as a matter of stakeholder concern imposing issues like recyclability, the avoidance of harmful substances, and conservation to the forefront of sustainable operational performance (Hart, 1995). Environmental concerns to port stakeholders and more so to the local community arising from port activities include water, air, and noise pollution, odor, and emissions emanating from both equipment and ships calling at the port (Dooms, 2018). Concerning conflict resolution, stakeholder management becomes key in resolving major conflicts observed around large-scale greenfield port development projects (Lawer, 2019). Further discussion on conflict resolution was done by De Langen (2007), building on the original efforts of Notteboom and Wilkenmans (2002). An example of sound conflict resolution took place was during greenfield port expansion at the port of Tema in Ghana, where even though the port authority conducted an environmental impact assessment, involving local stakeholders as part of the consultative planning process, serious conflicts that even involved court action arose out of the loss of local community's traditional interests including shrines (Lawer, 2019). Stakeholder participation in resolving conflicts is therefore a source of performance enhancement if applied successfully (Anderson, Aryee, Acheampong, Hansen (2023). Concerning stakeholder relations management, port authorities in many countries emphasize the importance of transparency and disclosure as tools in conflict resolution and reputation building in seaport management performance (Notteboom, Parola, Satta & Penco, 2015). The levels and standards of transparency have been extensively analyzed in the governance of seaports by (Brooks et al., 2020). Even though there is renewed academic effort in disclosure and transparency, the decisions made by ports always face vetting and scrutiny by customary regulatory bodies who apart from promoting and safeguarding port interests, may have personal or corporate interests (Zauchi & Kreiner, 2021). It implies that undiscerning disclosure of sensitive information to the public and undeserving stakeholders might be counterproductive to the future survival of the port. This is true in the developing economies in Africa, where political interests may be stronger and more pronounced (Dooms et al., 2018).

Research has shown that organizational characteristics positively influence organizational performance and this performance is further influenced positively by good stakeholder management and negatively if it is

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poor and disastrous if no stakeholders' management takes place at all (Felicio et al., 2013, Dooms et al., 2018). Clear evidence that sound stakeholders' management improves organizational performance came from studies done in European seaports (De Langen, 2007; Zaucha & Kreiner, 2021). The studies found that performance improved tremendously with sound stakeholder management. However other scholars (Gumede & Chasomeris, 2013; Bergvist & Cullinane 2017; Meyiwa & Chasomeris, 2016) found mixed results where some ports portrayed a reasonable level of success without strict stakeholders' management while for others lack of stakeholders' management led to conflicts, arguments and poor performance. Stakeholders are generally considered by port managers salient to the organizations if they are powerful and legitimate and they may become powerful if they have critical resources needed by the organization or if they can influence results by way of coercive, political or any other methods (Zaucher & Kreiner, 2021).

Conceptual Framework

This study built on this literature review from the previous studies to conceptualize the moderating impact of stakeholders' management on the correlation between organizational characteristics and organization performance about seaports in Africa. In the conceptual framework, organizational characteristics had location, size, information communications technology, infrastructure, maritime services, and hinterland connectivity. Stakeholders' management was measured using environmental issues, corporate social responsibility, and conflict resolution. The indicators for organizational performance were operational performance, financial performance, and market share performance.

Figure 1. Conceptual Framework

The hypothesis for the study stated as follows:
H_1: Stakeholder management has no significant moderating effect on the relationship between organizational characteristics and the performance of seaports in Africa.

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Methodology

Positivist philosophy was adopted in the testing of the resultant model. Similarly, a descriptive cross-sectional census survey research design was preferred to accommodate a low population of only 54 seaports in Anglophone Africa. The design chosen was considered suitable where the aim is to reveal the relationships between variables at a specific point in time (Saunders, Thornhill, & Lewis, 2007). Data was collected across targeted seaport terminals essentially at the same point in time. Previous studies by Chirchir (2022) and Odock (2016) successfully adopted this research design using Partial Least Squares Structural Equation Modeling (PLS-SEM) for analysis. The study targeted all container handling sea-ports in Africa where English is the language of management. Data was collected by use of structured questionnaires which were sent by email to executives of the targeted seaports, secretariats of regional port management associations, and also from the websites of the seaports. This research applied PLS-SEM for analyzing the data. It is a soft modeling technique that does not make assumptions about the distribution of the data and is the best alternative to CB-SEM when handling small samples, Wong (2013).

Diagnostic tests of normality, multicollinearity, autocorrelation, and heteroscedasticity were carried out on all the models of the study to determine whether the data collected met the threshold for further analysis. In the test of normality, the Shapiro-Wilk test showed an arrangement between 0.983 ($p = 0.931$) for stakeholders' management and 0.983 ($p = 0.968$) for organizational performance. All the p-values from Shapiro-Wilk's test displayed insignificant outputs on all the latent variables and therefore confirmed the normal distribution of the data (Tabachnick & Fidell, 2001). Test for multicollinearity was carried out using variance inflation factor (VIF) for checking the correlation and the correlation weight between exogenous variables in a model of regression. The VIF values varied between 1.001 for organizational characteristics and 1.126 for stakeholders' management as proof that there was no correlation between the exogenous variables in the models (Razali & Wah, 2011). The tolerance values were all above 0.2 implying a lack of multicollinearity (Miles, 2005).

The Durbin-Watson test was done to check autocorrelation and the findings confirmed that there was no autocorrelation between successive observations in the collected data for all three latent variables. The Koenker test was used for carrying out the heteroscedasticity tests for the models. In this test, the p-value had to be greater than 0.5 to ascertain that heteroscedasticity was not present. The results showed that p values for LM tests for the three models ranged from 0.626 to 0.996 a confirmation of the statistical insignificance of the models since the values were larger than 0.05 thus confirming the lack of occurrence of heteroscedasticity (Knaub, 2021).

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In summary, all the diagnostics tests of normality, collinearity, autocorrelation, and heteroscedasticity determined that the data that was collected for all the variables met the threshold required for further analysis. It was at this juncture necessary to carry out Kaiser-Meyer-Olkin (KMO) and Bartlett's analysis to examine the ability to carry out exploratory factor analysis (EFA) of all items of the latent constructs. The KMO checks revealed that all items were highly significant and equal to or above the threshold of 0.6 (Kaiser, 1974. Bartlett's Test findings showed that chi-square values for all the latent constructs were significant as the value of p was 0.001 (Bartlett, 1954). The findings of the examinations in Table 1 imply that it was appropriate to render all the items signifying the latent variables for EFA.

Table 1: KMO and Bartlett test results

Objectives variables	KMO Value	Chi-square	Df	Sig
Strategic Location	.731	97.904	3	.001
Size	.628	48.869	3	.001
Information Communications Technology	.741	89.916	3	.001
Infrastructure	.668	89.674	3	.001
Maritime Services	.764	104.667	3	.001
Hinterland Connectivity	.694	43.887	3	.001
Corporate Social Responsibility	.598	21.263	3	.001
Conflict Resolution	.603	34.654	3	.001
Operational Performance	.651	27.883	3	.001
Financial Performance	.783	112.482	3	.001
Market share performance	.649	60.225	3	.001

Results

The objective of the study was to determine if stakeholder management had any moderating effect on the relationship between organizational characteristics and the performance of seaports in Anglophone Africa. Questionnaires were sent out to 54 seaport terminals out of which only 46 eventually responded, thus a response rate of 83.63%. The collected data was cleaned, edited, coded, and then entered into SPSS for descriptive and inferential statistics tests including exploratory factor analysis to assess their factorability. The latent variable organizational characteristics comprised six sub-constructs each with three items per indicator. These were strategic location, size, information communications technology, infrastructure, maritime services, and hinterland connectivity. Stakeholder management consisted of three sub-constructs namely environmental issues, corporate social responsibility, and conflict resolution. The dependent variable organizational performance had three sub-constructs: operational performance, financial performance, and market share performance which had three indicators save for financial performance which had six indicators. The statistical analysis was approached through the outer model estimation to

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determine the link between the observable variables and the hypothetical constructs denoted by them and also by specifying the structural model evaluating the proposed relationships and testing the hypothesis (Bryne, 2010). All the correlations between the observed variables and their respective indicators were postulated in the measurement model that outlines how each group of indicators is aligned to their corresponding latent constructs. The observed variables were highly interchangeable and correlated and were therefore reflective and therefore underwent analysis for reliability and validity (Hair, Sarstedt, Hopkin & Kuppelwieser, 2014). All three constructs had a total of 12 indicators which were subjected to confirmatory factor analysis as part of the PLS SEM outer model assessment.

Exploratory Factor Analysis

This section provides a detailed explanation of how the measurement scale was refined for the moderating variable stakeholder management. These include display tables of reliability tests which comprise the mean, standard deviations, Cronbach Alpha values, item-to-total correlations, factor loadings of the constructs, and values for the measurement scales. Stakeholder management was measured using three sub-variables; environmental issues, corporate social responsibility, and conflict resolution. Each of these three sub-constructs had three indicators. Each of these three sub-constructs was operationalized as a distinct indicator for the latent variable, stakeholder management on a Likert scale whose range was 1 to 5 where 1 denotes "not at all, while 5 denotes "to a very large extent". Table 2 displays the statistics from the exploratory factor analysis using the IBM SPSS tool.

Table 2: Statistics on Stakeholder Management

	Mean	SD	Factor loadings	Item to total correlation	Cronbach Alpha if deleted
Environmental issues	3.51	.642	.753	.606	.741
Conflict resolution	3.38	.669	.822	.557	.752
Corporate Social responsibility	2.78	.769	.768	.503	.764

Results from Table 1 display statistics on responses to the stakeholder management variable which indicate that the highest mean was 3.51 (SD=0.642, N=36, factor loading 0.753) for "Environmental issues". The lowest mean was 2.78 (SD=0.769, N=36, factor loading 0.768) for "Corporate Social responsibility". The scale Cronbach Alpha was high at 0.761. Factor loading values for the three indicators were all above 0.7 which were all above the threshold of 0.4 (Hair, Black, Babin & Anderson, 2010). Item-to-item correlation values were all above the minimum threshold of 0.3. The scale mean was 3.22 implying that the respondents rated stakeholders' management above a moderate extent.

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The results also showed that the respondents rated environmental issues at 3.51 which is midway between moderate extent and large extent, conflict resolution at 3.38 which is above moderate extent, and corporate social responsibility at 2.78 which is marginally below moderate extent. Environmental issues indicators included involving stakeholders in new greenfield projects, port greening initiatives, and management of air, noise, water pollution, and waste management. Conflict resolution indicators included identification and classification of stakeholders, engaging stakeholders in port tariff and strategic plan discussions, and regular meetings to resolve potential disputes. Corporate social responsibility indicators included the presence of CSR policy, stakeholder choice of CSR projects, and voluntary and unsolicited contributions for CSR projects. The implication is that the respondents rated environmental issues as the most important factor followed by conflict resolution and lastly CSR in that order.

Reliability and validity tests

The variables were checked meticulously for reliability, validity, and unidimensionality by conducting confirmatory factor analysis (CFA) through PLS-SEM using Smartpls 4. 0 software. Confirmatory factor analysis was carried out through PLS-SEM data analysis using SmartPLS 4.0 software to assess the relationship between the latent variables to determine the predictive potential of the conceptual model for the seaports in Anglophone Africa. PLS SEM is a statistical software that assesses the psychometric properties of the measurement models and parameter estimates of the structural model and it was used to estimate the objective for being most suited for research where the sample size is below 100 (Hair et al., 2014). Table 3 illustrates the descriptive statistics for all the latent constructs in the outer model with results showing that data for all the variables are fairly normal as values for kurtosis and skewness fall within the range of -1 and +1, except for kurtosis of size. All variables were therefore seen as composite.

Table 3: Descriptive Statistics for Measurement Scale

Latent Construct	Indicator	Mean	SD	Skewness	Kurtosis
Organizational Characteristics	Strategic location	3.01	.707	-.499	-.932
	Size	3.12	.452	-.473	-.932
	Information Communications Technology	3.49	.906	-.338	-.534
	Infrastructure	3.79	1.12	-.720	-.352
	Maritime Services	2.92	.869	-.337	-.746
	Hinterland connectivity	3.24	.663	.559	-.303
Stakeholders Management	Environmental Performance	3.41	.467	-.414	.712
	Corporate Social Responsibility	3.24	.647	-.414	-.288
	Conflict Resolution	3.28	.457	-.187	-.231

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Organizational Performance	Operational Performance	3.24	.862	-.068	-.277
	Financial Performance	2.89	.454	.671	.284
	Market Share Performance	2.62	.749	.657	.577

Table 4 displays the outer model reliability. The results show that all of the indicators of the latent constructs in this model had individual indicator reliability values that were greater than the 0.5 threshold, with the majority above 0.7 (Hair et al., 2014). Bootstrapping results showed that all factor loadings are significant as p-values are less than 0.05 and their t-statistics greater than 1.96. Therefore, all the outer model loadings were highly significant.

Table 4: Reflective outer model reliability

Latent Variable indicator	Loadings	Indicator reliability	T Statistics	P Values
Strategic Location	.815	.949	5.437	.001
Size	.801	.846	3.791	.001
Information communications technology	.893	.825	1.998	.001
Infrastructure	.895	.821	5.176	.001
Maritime services	.871	.816	5.658	.001
Hinterland connectivity	.729	.842	2.593	.001
Environmental issues	.933	.850	9.513	.001
Corporate social responsibility	.685	.856	4.716	.001
Conflict resolution	.911	.856	4.716	.001
Operational performance	.893	.830	4.183	.001
Financial performance	.692	.854	5.718	.001
Market share performance	.723	.839	5.213	.001

Internal consistency reliability was ensured through composite reliability scores which were obtained from PLS SEM output. From Table 5, it is observed that the values of composite reliability scores range from 0.809 for stakeholders' management to 0.929 for organizational characteristics and thus the three latent constructs were greater than the threshold of 0.6 (Ringle, Sarstedt, Mitchell & Gudergan, 2018). In addition, Cronbach's Alpha values range from 0.696 to 0.913 against the threshold of 0.7 confirming internal reliability (Hair et al., 2010). The results therefore confirm that there was a high level of internal consistency reliability for the constructs (Fornell & Larcker, 1981).

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Table 5: Reliability, Cronbach alpha, and AVE of Latent Constructs

Latent Variable	Composite Reliability	Cronbach's Alpha	AVE	√AVE
Organizational Characteristics	.929	.913	.699	.836
Stakeholders' management	.809	.809	.600	.775
Organizational performance	.888	.696	.723	.850

Information from Table 5 reveals that the average variance extracted (AVE) values for the latent constructs range between 0.600 for stakeholder management and 0.723 for organizational performance. These values are all greater than the threshold of 0.5 (Gold, Malhotra & Segars, 2001). Also from the confirmatory factor analysis output obtained from PLS-SEM analysis, in Table 6, all the indicators load more heavily onto the corresponding variables as a further confirmation of convergent validity.

Table 6: Confirmatory factor analysis

Indicator	Organizational Characteristics	Stakeholders Management	Organizational Performance
Strategic Location	**.815**	.320	.488
Size	**.801**	.309	.393
Information Communication Technology	**.893**	.472	.519
Infrastructure	**.895**	.455	.417
Maritime Services	**.871**	.601	.534
Hinterland Connectivity	**.729**	.298	.314
Environmental Issues	.523	**.933**	.520
Corporate Social Responsibility	.559	**.685**	.301
Conflict Resolution	.300	**.911**	.591
Operational Performance	.577	.600	**.893**
Financial Performance	.147	.313	**.692**
Market share performance	.394	.338	**.723**

To confirm discriminant validity, the square root of AVE must be greater than the correlation value in the column of the latent variable under it. From Table 6, the square root of AVE of organizational characteristics (0.699) is 0.835. This number is greater than the correlation value in the column of organizational characteristics (0.749, 0.460). The square root of AVE for stakeholders' management (0.600) is 0.775 which is greater than the correlation value under it of 0.343 while that of organizational performance (0.723) is 0.850 which is greater than the correlation value in the row (0.460, 0.343). This confirms that the discriminant validity is well established as

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recommended by Teo & Jiang (2008). Table 7 shows the results of Fornell Larcker Criterion results.

Table 7: Fornell-Larcker criterion analysis

Latent Variable	Organizational characteristics	Stakeholders' management	Organization performance
Organizational characteristics	**.835**		
Stakeholders Management	.749	**.775**	
Organizational performance	.460	.343	**.850**

Table 8 displays the HTMT values that were generated from the PLS-SEM analysis output. The scores indicate that all the pairs of constructs fall below the maximum threshold value of 0.9 (Stone, 1984; Geiser, 1984). This is a further confirmation of the establishment of discriminant validity in this model.

Table 8: Heterotrait-Monotrait (HTMT) Ratios and their Significance

Hypothesized path relationships				HTMT	Ratio
Stakeholders management characteristics	->	organizational		.590	
Organizational performance management	->	stakeholders		.619	
Organizational performance characteristics	->	organizational		.684	

Collinearity was evaluated for both the inner and the outer model by using Variance Inflation Factor (VIF) ratios and their tolerances. The results indicated that VIF values for the indicators of the latent variables obtained from PLS SEM analysis output ranged between 1.255 and 3.962 which were all below 5 while all the tolerances ranged between 0.226 and 0.472 values which were all above 0.2 (Miles, 2005). This was a confirmation that multicollinearity was not a problem in both the inner and outer models. VIF results are provided in Table 9.

Table 9: Outer Tolerance and Variance Inflation Factor Values

Indicator	Tolerance	VIF
Strategic location	.401	2.759
Size	.472	2.781
Information communications technology	.268	3.962
Infrastructure	.276	3.891
Maritime services	.226	3.180
Hinterland connectivity	.466	2.093
Environmental issues	.279	3.025
Corporate social responsibility	.358	1.468
Conflict resolution	.342	2.503

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Operational performance	.298	1.418
Financial performance	.277	1.377
Market share performance	.314	1.255

Predictive Relevance and Model Fit

The predictive relevance measure, Q^2 which was obtained from PLS-SEM output was 0.275. According to Hair et al., (2014), a Q^2 score of 0.02 indicates a small relevance, 0.15 medium relevance, while 0.35 demonstrates a large predictive relevance of an exogenous construct. Therefore, the predictive relevance of this model falls midway between medium and large predictive relevance. The value of SRMR should be 0.10 or less than 0.08 as suggested by Hu and Bentler (1999), while Hair, Tomas, Ringle & Sarstedt (2016) suggested a value of SRMR of 0.1. The SRMR for this model obtained from PLS-SEM analysis was 0.105, which is marginally higher than 0.1 due to the small sample size (Hooper, Coughlan, Mullen & Michael. 2008). The NFI threshold for an excellent fit is 0.9 (Ringle, Sarstedt, Mitchell & Gudergan (2022) while the value of NFI obtained from PLS SEM was 0.712. This value was marginally smaller than the threshold of 0.9 again because of the small sample size (Hooper et al, 2008). These results of SRMR and NFI therefore confirm that the model was well constructed (Ringle, 2016; Kline, 2015). The bootstrapping procedure with 500 resamples was carried out to establish the model's statistical significance which was confirmed as all p values were 0.001 which was below the threshold of 0.05 and t statistics was 6.531 higher than the minimum value of 1.96.

Model Path Diagram

Stakeholder management was hypothesized to moderate the linkage between organizational characteristics and organizational performance. In PLS-SEM analysis, organizational characteristics were denoted by **OC** which had location (B1), size (B2), information communications technology (B3), infrastructure (B4), maritime services (B5), and hinterland connectivity (B6). Stakeholder management was displayed by **SM** which was represented by environmental issues (D1), corporate social responsibility (D2), and conflict resolution (D3). Organizational performance was displayed as **OP** and was represented by operational performance (E1), financial performance (E2), and market share performance (E3). The model path diagram from the PLS-SEM analysis is shown in Figure 2.

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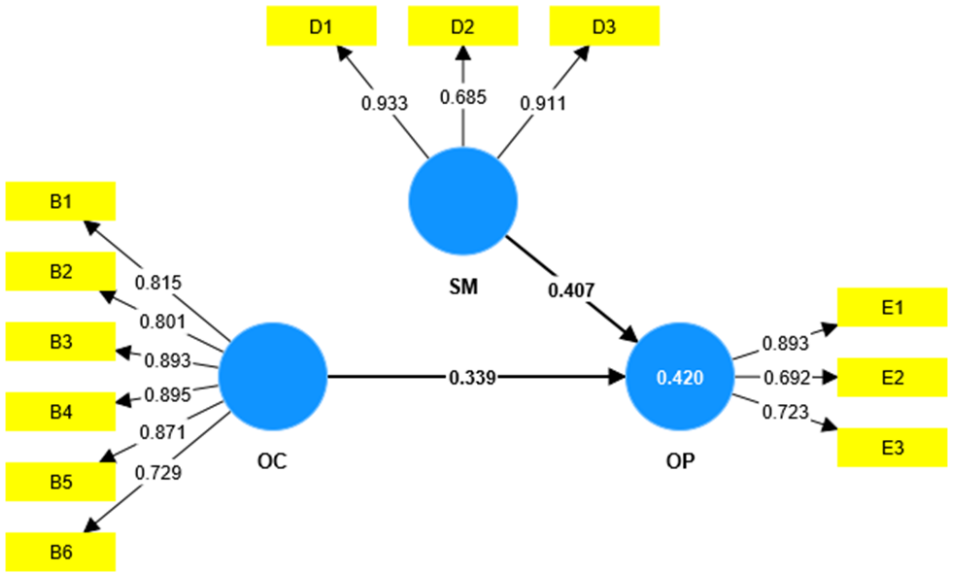

Figure 2: Structural equation modeling path diagram showing the effect of stakeholders' management on the relationship between organizational characteristics and performance

Variance of Endogenous Variable and Path Coefficient Significance

From Figure 2, it is noted that the coefficient of determination, R^2, attributed to organizational performance was 0.420. This implies that organizational characteristics and stakeholders' management, explain 42% of the change in organizational performance. It is concluded that the variance that organizational characteristics and governance reforms account for in organizational performance, was close to moderate (Wong, 2013). Peng and Lai advocate for values of R^2 of 67 percent, 33 percent, and 19 percent to represent large, medium, and low variance in that order. It is thus concluded that the variance that organizational characteristics and stakeholder management account for in organizational performance, was above medium. The inner model suggests that the hypothesized path relationships between organizational characteristics and organizational performance (β=0.339, t=2.551, p-value 0.012) are statistically significant as the p-value is less than 0.05. Likewise, the hypothesized path relationship between stakeholders' management and organizational performance (β=0.407, t=2.731, p-value 0.013) is statistically significant. The model path diagram generated from PLS-SEM analysis showing the hypothesized relationship between organizational characteristics, stakeholders' management, and organizational performance is shown in Figure 2.

Effect Size

Aguinis et al., (2005) proposed that the average effect size and f^2 measurement of a moderator ought to be as low as 0.009. Hair et al., (2021)

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suggest that the effect size should be 0.025, 0.01, and 0.005 representing substantial, moderate, and small effect sizes respectively in the same order. From the PLS-SEM analysis effect size, f^2 for organizational characteristics was 0.011, which is a moderate effect size, while that of stakeholders' management was 0.006 which is a small effect size (Hair et al., 2021). These effect sizes are shown in Figure 2.

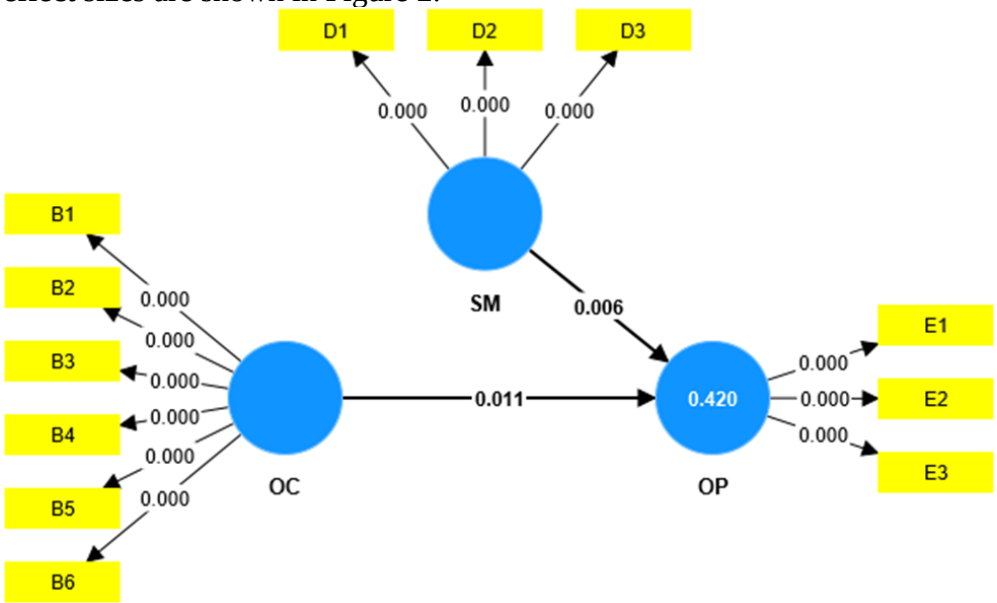

Figure 3: Structural equation modeling path diagram showing the effect sizes and statistical significance

The Moderation Effect

Figure 3 shows the impact of stakeholder management as a moderator on the correlation between organizational characteristics and organizational performance. The moderation effect was carried out using a two-stage approach. Henseler and Chin (2010) advocate for a two-stage method if the main intention is to measure the effect of moderation's significance. It is preferred because it results in higher statistical power in comparison to other methods. Information from Figure 3 reveals that the effect of moderation's value is 0.054 while the simple impact of organizational characteristics on organizational performance is 0.350. This implies that the connection between organizational characteristics and organizational performance is 0.350 for a regular level of stakeholders' management. However, when stakeholders' management is enhanced by one standard deviation, the link between organizational characteristics to organizational performance increases by the impact of interaction [thus 0.350 + (0.054) = 0.404]. Alternatively, if stakeholders' management is decreased by one standard deviation, the link between organizational characteristics and organizational performance is

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decreased through the effect of the interface [i.e., 0.350 – (0.054) = 0.304]. It is also observed that after applying the moderating effect, the R^2 value increased marginally from 0.420 to 0.423 while the path coefficient between stakeholders' management and organizational performance decreased marginally from 0.407 to 0.396. However, the path coefficient between organizational characteristics and organizational performance increased marginally from 0.339 to 0.350.

The Significance of the Moderation Effect

The significance of the moderation effect and other statistics is shown in Table 10. From the results, it is observed that the moderating effect is statistically significant since T statistics is 4.916 which is greater than the threshold of 1.96 (Hair et al. (2013). The P-value of 0.024 is smaller than the maximum threshold of 0.05 which confirms the significance of the moderating effect. The result implies that stakeholders' management had a positive significant moderating effect on the relationship between organizational characteristics and organizational performance. The statistics of the moderating effect had path coefficient Beta= 0.054, T statistics = 4.916, p statistics = 0.024, and effect size, f^2 = 0.006. Since the T value was above 1.96 and the p-value was below 0.05, the statistical significance of the moderating effect was confirmed.

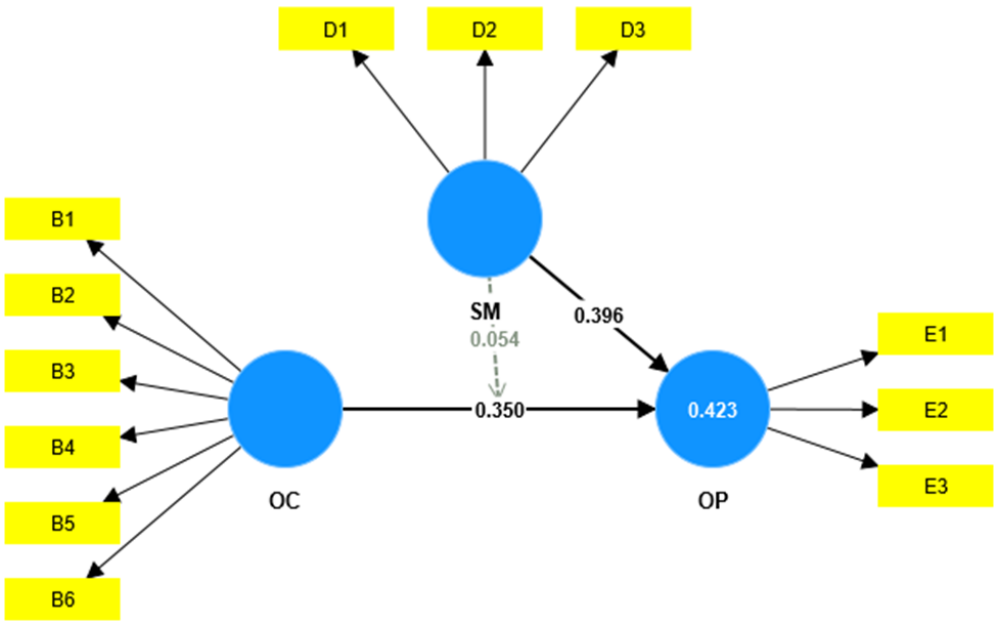

Figure 4: Structural equation modeling path diagram showing the moderating effect of stakeholders' management

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Total Effect Analysis

The findings also show that stakeholders' management has the strongest effect on organizational performance (β = 0.396, t = 2.731, p-value = 0.012), followed by organizational characteristics (β= 0.350, t = 2.551, p-value = 0.013). The moderating effect of stakeholders' management on operational performance total effect (β = 0.054, t = 2.916, p-value = 0.024). It was concluded that in this model stakeholders' management is the strongest predictor of organizational performance followed by organizational characteristics. The total effect results are shown in Table 10.

Table 10: Significance of Path Coefficients in the Model

Hypothesized Path Relationship	β	T Statistics	P Values
Moderating effect Stakeholders management -> Organizational performance	.054	2.916	0.024
Organizational performance -> Organizational characteristics	.350	2.551	0.013
Organizational performance -> Stakeholders management	.396	2.381	0.012

Discussion

The main objective of the study sought to verify whether stakeholders' management had a significant moderating effect on the direct relationship between organizational characteristics and the performance of seaports in Anglophone Africa. To achieve this objective, a structural model and a hypothesis were first developed. The model consisted of latent exogenous variables, organizational characteristics, a latent proposed moderator stakeholders' management, and an endogenous latent construct, organizational performance. The hypothesis predicted no significant moderating effect of stakeholders' management on the relationship between organizational characteristics and the performance of seaports in Anglophone Africa. PLS-SEM analysis using Smartpls PLS4.0 software was conducted to test the hypothesis. The process involved first confirming the reliability and validity of the outer and inner models. The findings illustrated that all the outer model loadings were significant, with the reliability of all the indicators being greater than the minimum threshold of 0.4 (Hair et al., 2010). Model fit indices used to confirm the model fitness were SRMR, NFI, and Q^2 by the guidelines issued by Kline 2015.

This study was anchored on the natural resource-based view, (NRBT) whose proposition is that sustainable competitive advantage is attained once an organization's resources which are rare, valuable, inimitable, and non-substitutable are linked with the natural environment to define strategic capabilities, like pollution prevention, product stewardship, and sustainable development (Teece et al., 1997). The findings showed that the path between organizational characteristics and organizational performance was positive and significant, and the path between Stakeholders' management and

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organizational performance was also positive and significant. The interpretation is that a positive and significant relationship exists between organizational characteristics and organizational performance. Likewise, a positive and significant relationship is also confirmed to exist between stakeholders' management and organizational performance. The relationship between organizational characteristics and organizational performance with stakeholders' management acting as a moderating variable is also positive and significant. The verdict from empirical evidence is that stakeholders' management is a positive and significant moderator in the relationship between organizational characteristics and organizational performance of seaports in Anglophone Africa.

The study adds to knowledge by providing the evidence on conceptualization and measurement of stakeholders' management as a moderating variable as stipulated by (De Langen, 2007; Dooms et al., 2008; Zaucha & Kreiner, 2021; Kothuis & Slinger, 2018; & Acheampong et al., 2022). This study measured stakeholder management using three sub-variables of environmental issues, conflict resolution, and corporate social responsibility as matters of concern to seaport stakeholders as prescribed in the existing literature. Confirmatory factor analysis on stakeholders' management was premised only on these three sub-variables which are both internal and external stakeholders' issues. Environmental issues of concern to stakeholders include mitigating the effects of air noise and water pollution to both internal and external stakeholders. Existing literature finds that Port Authorities are increasingly adopting eco-friendly approaches in ports which include onshore power, eco-technologies in equipment to contain air, noise, and oil pollution, and effluent discharge management (Park & Yeo, 2012). Stakeholder coalitions often form around such particular issues because stakeholder interests tend to be interconnected which may make them join forces against the organization Acheampong et al., 2022).

Conflict resolution measures included the identification and profiling of stakeholders and disclosures to the stakeholders. Identification includes establishing and profiling both external and internal stakeholders and separating their concerns (Dooms 2018). The balance of what to disclose and what not to disclose is a test of the level of transparency for seaports as they thrive not to divulge delicate information to other stakeholders, or the public, on matters such as cost breakdowns, which no business entity would ever disclose even to its shareholders, as such might be counterproductive to the long-term well-being of the port (Anderson et al., 2023 & Brooks et al., 2020). A most recent case of conflict resolution took center stage in testing stakeholder theory during the recent expansion of Tema port in Ghana where the application of stakeholder's theory with highly consultative stakeholder management resolved the disputes to allow the port development to prevail

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(Lawer, 2019, Anderson et al., 2023). A similar application of stakeholder theory was in Kenya during the construction of a new deep-water container handling terminal at the Lamu archipelago where the location chosen for the port was a highly protected virgin green field area with mangrove forests, fishing grounds for the local community and the fields ashore were also feeding grounds for wild animals like buffalos and elephants. Careful application of the Stakeholder theory resolved the serious conflicts to allow the port development to prevail (KPA 2022).

On corporate social responsibility (CSR), while some previous studies saw it as an act of philanthropy or Port Authorities determination to balance the desires of stakeholders with the requirement to make profit (Reda & Yeon, 2021) or as a treasured managing tool for improving corporate reputation and not organizational performance (Khuong, Nguyen & Trung, 2021). The findings of this study agree with the contrasting views of (Dooms et al., 2018); Wei, Huang, Peng, and Yeh, 2021; Zaid, Zara & Pucheta-Martinez, 2020) who found that serving an organization's stakeholders' CSR interests has a positive effect on the financial performance of that organization.

This study recommends that the application of stakeholder theory on port studies be enhanced especially in managing changes arising out of port governance reforms involving concessions of operations and subsequent new port infrastructural developments arising from such reforms. This will mitigate potential conflicts, especially with local community stakeholders. The study recommends that for African ports to improve and sustain performance they should adopt regular stakeholder consultative forums, especially about environmental management and port greening initiatives, they should also have an effective conflict resolution mechanism based on stakeholder theory. They should also increase participation in stakeholders' corporate social responsibility programs. This study therefore adds to new knowledge by contextualizing stakeholder theory application in African seaports.

In contribution to practice and policy, the study will enable seaport managers, shareholders, government, and regulators to benefit from enhanced knowledge on how to improve seaport operational and financial performance exploitation of natural port characteristics and management of stakeholders' concerns to mitigate possible conflicts as a means to creating and sustaining competitive advantage.

The limitations of this study were that the questionnaire was directed only to port executive managers as opposed to major stakeholders like shareholders, shipping lines, clearing and forwarding agents, government agencies, regional governments, port regulators, and employees from the respective seaports in Africa. The second limitation was the focus of this study only on African seaports where English is the language of business. The study therefore ignored African seaports where other languages like French are the

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languages of business thereby reducing the target population and reducing realizable external validity.

Suggestions for Future Research

The business environment is dynamic, with continuous technological advancement and automation of port operational systems and the introduction of more efficient and productive port equipment. Given the dynamic nature of the latent variables, the current findings have the potential to change over time. In this regard, future studies need to consider the adoption of longitudinal research to assess the alterations in the organizational characteristics and their relationship with organizational performance and improvements arising from reforms in governance structures and the requisite stakeholder management techniques necessary to mitigate possible conflicts arising thereof over time. Future studies could consider adopting across-culture indicators questions in stakeholders' management questionnaires to establish if cultural practices across differing contexts have an impact on stakeholders' management and how they impact seaport performance. Finally, future studies should consider interviewing seaport stakeholders themselves instead of relying on port executives whose views could be subjective.

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