

# The role of stakeholder participation and sustainability integration in maritime transport: A structure-conduct-performance analysis

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## ABSTRACT

Anchored on stakeholder management theory, this study applies the Structure-Conduct-Performance framework to analyse the effects of various stakeholders' participation on sustainability integration and organisational performance of maritime transport firms. Survey data were collected from 156 maritime transport firms. It was found that sustainability integration fully mediates the effects of stakeholders' participation on organisational performance, which highlighted the importance of developing sustainability in a business context and engaging stakeholder participation in the planning and management of sustainable maritime transport activities. The findings enrich theoretical research on stakeholder management and provide directions for maritime transport firms and transport policymakers to achieve better sustainability results.

## 1. Introduction

Since the past few decades, three driving forces namely climate change, globalisation, and information technology have magnified the salience of sustainability and its relevance to organisations (Porter and Kramer, 2017). Increasingly, there has been heightened public scrutiny on environmental and societal impact of businesses such as pollution, resource depletion, and unfair treatment of workers (Ellram and Murfield, 2017). As a result, managing sustainability has been gaining mindshare in board rooms globally.

As buyers of maritime transport services such as manufacturers or logistics companies start to make business decisions based on the need for sustainability and become aware of its potential marketing value, they demand maritime transport firms to follow likewise (Berg and Langen, 2017). In addition to economic performance, their environmental and social performances are increasingly being used as criteria for awarding shipping tenders (Pawlik et al., 2012). However, improving sustainability is not always easy and some maritime transport firms have viewed it as a hindrance to growth. Nonetheless, there are others who view sustainability as a good business opportunity. They view sustainability as a potential source of competitive advantage and a key value driver for their customers, stakeholders and, ultimately, their profits (Chang and Danao, 2017; Lirn et al., 2014).

The view of sustainability contributing to the bottom lines of maritime transport firms is consistent with stakeholder management theory which posits that organisations should focus on managing sustainability issues as they have a “moral obligation to satisfy a variety of constituents who have a legitimate (e.g. shareholders and employees) or silent (e.g. the environment and community) interest on an organisation” (Freeman, 2010; Vejvar et al., 2017; Yang, 2018a). In addition, addressing stakeholders' sustainability needs or pressures allow maritime transport firms to gain long-term commitment of valuable resources (e.g. factors of production) from their stakeholders due to greater stakeholders' satisfaction, stronger brand identification, and loyalty (Katiyar et al., 2018; Shin et al., 2017). Subsequently, this can translate to considerable cost-savings or increased market shares for maritime transport firms.

An underlying assumption or objective of most stakeholder management theory research in the current literature is to achieve utility maximisation which involves maximising the satisfaction of all stakeholder groups. However, this is hardly achievable for a few reasons. The first reason is attributed to the potential conflicting sustainability interests amongst stakeholder groups (Scandellius and Cohen, 2016). For instance, shareholders might only be interested in short-term financial returns whereas managers or employees might be concerned with growth i.e. obtaining higher long-term financial returns at the expense

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of short-term financial returns. The second reason relates to the scarcity of organisational resources, and hence the need for resource allocation. The sustainability priorities of stakeholder groups might differ (Yin and Jamali, 2016). For example, managers may tend to favour sustainability issues that improve their utility such as compensations for participating in volunteering programmes or attractive employee welfare packages. On the other hand, regulators might only be interested in pursuing their own agenda such as reducing the carbon footprint of maritime transport firms' operations. Due to the above reasons, the objective of maritime transport firms in relation to achieving their sustainability goals is about compromising rather than maximising. Specifically, to enhance the business case of sustainability, the allocation of resources to satisfy stakeholders' needs should be prioritised in accordance with the value they create i.e. their contributions to the organisational performance of maritime transport firms.

Despite the importance of stakeholder management theory that has stressed the importance of prioritisation which is crucial in the allocation of resources to satisfy stakeholder needs and maximise organisational performance, most studies have ignored the role of stakeholder participation in the planning and implementation of sustainability-related policies. Stakeholder participation in sustainability policies of maritime transport firms is crucial as it can garner stronger commitment from stakeholders and potentially result in the co-creation of values and synergies (Gunasekaran et al., 2015; Ha et al., 2019; Shin et al., 2017). Furthermore, most existing research seems to have trivialised the contribution of stakeholder participation towards integrating maritime transport firms' sustainability and business strategies. According to Carter and Rogers (2008), a sustainable activity is not sustainable if it does not enhance the competitiveness or profitability of an organisation. Their arguments suggest the importance of exploiting sustainability from the participation of stakeholders and integrating their concerns with maritime transport firms' business strategy.

This study aims to address the aforementioned gaps pertaining to the inadequate attention towards stakeholder participation and integrating it with the business strategies of maritime transport firms by bringing together theoretical insights from stakeholder management theory and the Structure-Conduct-Performance (SCP) paradigm. Anchored on Industrial Economics, the SCP paradigm posits that the performance of an organisation is influenced by its conduct, which is in turn driven by the strategy of the organisation being developed in response to the industry or market conditions (Wu and Salomon, 2016). In this context, this study proposes that stakeholders' sustainability concerns should be developed within business context (i.e. conduct) before maritime transport firms can realise any performance improvements (i.e. performance). Furthermore, the degree of integration between sustainability and business strategies of maritime transport firms (i.e. conduct) is dependent on the participation of various stakeholder groups' in the planning or implementation of sustainability-related policies in response to environmental forces such as pressures exerted by stakeholders to implement sustainability (i.e. structure). Hence, this study argues that the level of integration between a maritime transport firm's business and sustainability strategy serves as a mediator of the relationship between stakeholders' participation and organisational performance.

The rest of the paper is organised as follows. First, a research model containing a network of hypotheses is proposed. Thereafter, the methodology employed by this study is proposed and described. Following which, survey data are used to test the network of hypotheses. The results are then presented and discussed. Finally, conclusions including theoretical and managerial implications are drawn.

## 2. Literature review

### 2.1. Structure-conduct-performance paradigm

The SCP paradigm is a concept rooted in Industrial Economics. It is often used as an analytical framework to postulate causal relationships

between the structure or environment of a market, the internal conduct of organisations, and their performance (Wu and Salomon, 2016).

In general, SCP posits that organisations pursue strategies in response to market conditions, which alter organisations' conduct to positively influence the level of profits they earned. According to Porter and Kramer (2011), organisational success depends on the effectiveness of strategies formulated by organisations. Such strategies should consider the context i.e. the marketplace that organisations compete in. In this regard, strategies can lead to reasoned, planned actions, which motivate organisations' conduct (i.e. behaviour) and subsequently, drive performance.

In this context, incorporating principles drawn from stakeholder management theory, this study posits that in maritime transport firms' quests to achieve superior organisational performance (i.e. performance), they should aim to achieve stronger integration between their business and sustainability strategies (i.e. conduct) by enhancing the level of centrality, appropriability, proactivity, voluntarism, and visibility of their sustainability programmes. Retrospectively, tighter integration can be achieved from the strategic management of stakeholder participation. In this regard, maritime transport firms' strategy to involve stakeholders in the planning and implementation of their sustainability policies is a result of responding to environmental forces such as pressures exerted by stakeholders to implement sustainability (i.e. structure).

The subsequent subsections first discuss the effect of stakeholders' participation on the integration between business and sustainability strategies (i.e. sustainability integration). Thereafter, the effect of sustainability integration on organisational performance is discussed.

### 2.2. The link between stakeholders' participation and sustainability integration

Stakeholder management theory holds that "managers should partake in corporate sustainability since they have a moral obligation to satisfy a variety of constituents who have a legitimate (e.g. shareholders and employees) or silent (e.g. the environment and community) interest on a firm" (Freeman, 2010).

The theory contrasts with the traditional, narrow focus of maximising shareholders' wealth (Jamali, 2008). It considers beyond direct profit maximisation, and posits that satisfying the needs of shareholders cannot be met without satisfying the needs of other stakeholders. For instance, improving relationships with employees increases their satisfaction and productivity, which subsequently contributes to an organisation's performance. Similarly, improving relationships with suppliers increases trust and consequently reduces transaction cost.

Although stakeholder management theory posits that all stakeholders matter, and that an organisation should embed their concerns into its operations, resources are limited which give rise to stakeholder classification or prioritisation. Such prioritisation can be determined by organisations' assessment of relational stakeholder attributes such as power, legitimacy, and urgency (Miles, 2017). However, the current study argues that the prioritisation process does not necessarily entail the extent to which stakeholders are being involved in the planning or implementation of an organisation's corporate sustainability or the impact of stakeholders' participation on business performance.

Whilst stakeholders' participation is crucial in the planning and formulation of corporate sustainability strategies (Lam and Lim, 2016; Lawer, 2019), it might not necessarily improve or could have varying effects on the organisational performance of organisations. This may be due to the reason that the agenda of the various stakeholders is not aligned with an organisation's business strategy.

In general, a successful corporate sustainability strategy is measured by its ability to complement an organisation's business strategy or create economic value (Schaltegger and Wagner, 2017). From reviewing the literature, this study proposes that there are five dimensions that define a successful corporate sustainability strategy, or in other words, how

successful are sustainability issues being embedded in or integrated with the business strategy of organisations (Engert et al., 2016). They relate to the level of centrality, appropriability, proactivity, voluntarism, and visibility of the sustainability activities or strategies of an organisation.

Accordingly, 'centrality' refers to the fit between the sustainability policies and the organisation's mission and objectives. 'Appropriability' refers to ability of the sustainability policies to gain financial benefits. 'Proactivity' refers to the extent to which the current sustainability policies are aligned with emerging societal or environmental trends and stakeholders' expectations. 'Voluntarism' refers to the degree of freedom given to organisations to implement their sustainability policies. 'Visibility' refers to the extent to which the sustainability policies can be observed by the firms' stakeholders.

The aforementioned dimensions suggest the importance of integrating the sustainability needs of stakeholders with the business strategy of organisations i.e. sustainability integration. An approach to enhancing sustainability integration can be achieved by engaging stakeholders through their participation in the planning or formulation phases of sustainability strategies.

This study provides four arguments as to why stakeholders' participation enhances the sustainability integration. First, stakeholders' participation enables organisations to identify the current sustainability issues and future trends from their stakeholders (Yuen et al., 2016). This prepares organisations to cope with these issues through incorporating appropriate mitigation and adaptation measures in their business strategies, which is consistent with the concept of proactivity. Next, stakeholders' participation can be viewed as a mechanism to build awareness and establish the reputation of organisations through constant monitoring and managing stakeholders' expectation, which reinforces the concept of visibility (Shin and Thai, 2015). This generates reputation capital and garner trusts from stakeholders, which is a strategic goal of most organisations. Third, stakeholders' participation can result in a stronger alignment of stakeholder values and the enhancement of the sustainability policies impact of an organisation, which is aligned with the concepts of centrality and appropriability. This enables scarce resources to be optimised by allocating them to address pertinent sustainability issues raised by stakeholders (Lam, 2015; Yuen et al., 2019b). This would align with the business strategy of organisations in relation to minimising waste and maximising stakeholders' utility. Lastly, stakeholders' participation can be viewed as a mechanism for collaboration and co-creation of values from implementing sustainability solutions (Gunasekaran et al., 2015; Tran et al., 2020), which reinforces the ideas of appropriability, voluntarism, and visibility. The broader input of sustainability ideas or solutions from various perspectives can potentially lead to innovation which strengthens organisations' business strategy of achieving a stronger differentiation or low-cost competitive edge in the market (Balci et al., 2018; Lam and Wong, 2018; Yuen et al., 2017a, 2019a; Zhou et al., 2019).

Based on the above arguments, this study posits that stakeholders' participation has a positive impact on the integration of sustainability and business strategies of maritime transport firms i.e. sustainability integration. In general, there are four stakeholder groups, namely internal value chain\*, external value chain\*, regulatory and public stakeholders (Wagner, 2011). Therefore, the following hypotheses are proposed.

**H1.** Maritime transport firms' internal value chain stakeholder participation has a positive effect on sustainability integration

**H2.** Maritime transport firms' external value chain stakeholder participation has a positive effect on sustainability integration

**H3.** Maritime transport firms' regulatory stakeholder participation has a positive effect on sustainability integration

**H4.** Maritime transport firms' public stakeholder participation has a positive effect on sustainability integration

### 2.3. The link between sustainability integration and organisational performance

This study further proposes that sustainability integration contributes to organisational performance. In this study, organisational performance is defined as the extent to which organisational benefits are being enjoyed by a firm as a result of its sustainability strategy. These benefits include advantage in recruitment and retention, cost savings, corporate image and relationship, new market opportunities and improved customer loyalty (Yang, 2018b; Yuen et al., 2018).

**Note.** \* 'value chain' refers to processes or activities that add value to a company. Value chain activities can be internal or external.

Carter and Rogers (2008) pointed out that sustainability of and by itself is not completely sustainable unless it is developed within a business context and contributes to business performance. Their arguments suggest that sustainability policies should complement rather than contradict the primary objective of organisations i.e. to make economic profits (Carroll and Shabana, 2010).

Consistent with the preceding paragraph which argues for the business case of sustainability, this study suggests that such business case is enhanced when sustainability issues are integrated with the business strategy of organisations. As indicated earlier, the sustainability integration can be reflected by the centrality, appropriability, proactivity, voluntarism, and visibility of the sustainability activities, policies, or strategies.

With regard to centrality, when sustainability policies are consistent with and expressed in organisations' mission and objectives, the values of being sustainable are espoused by all stakeholders of the organisations (Lee et al., 2013). This allows policies to be clearly communicated without conflicts to all stakeholders, and garners commitment from stakeholders. In addition, measurable goals can be formulated to assess the extent to which these sustainability policies are implemented and to achieve organisations' objectives, thereby enhancing organisational performance.

As for appropriability, the positive financial contributions of the sustainability policies directly improve organisational performance. In addition, it portrays a positive image to stakeholders that the organisation is not compromising or sacrificing their core business i.e. achieving greater environmental or societal performance at the expense of making less profits in the long-run (Yuen and Thai, 2017).

As for proactivity, the active identification of future stakeholders' sustainability needs, sustainability regulations, and trends allows organisations to anticipate and prepare for the future (Lam and Lim, 2016). The continuous scanning of the environment can enhance stakeholder satisfaction, capture new market opportunities due to changing sustainability needs and regulations, and lower the risk of operations (Yuen et al., 2016). This enhances organisational performance.

As for volunteerism, greater autonomy in the management of sustainability as opposed to responding to legal constraints, fiscal incentives, or industry practices allows organisations to take advantage of the opportunity to build firm-specific resources and capabilities (Skovgaard, 2014). This results in the creation of value of the organisations which improves organisational performance.

Lastly, greater visibility is expected from stronger integration between business and sustainability strategies. This would indicate that stakeholders are more aware of the sustainability involvement of an organisation and are more likely to reward or commit to the cause of the organisation which results in stronger organisational performance (Shin et al., 2017). Therefore, the following hypothesis is proposed.

**H5.** Sustainability integration has a positive effect on organisational performance

The network of hypotheses is depicted in Fig. 1.

### 3. Methodology

#### 3.1. Measurement item development

A review of the academic literature and secondary sources such as maritime transport firms' sustainability reports and annual financial reports was first conducted to identify relevant measures for the respective constructs presented in Fig. 1. Based on the review, an initial list of measures was developed.

The measures were then validated with two experienced industry practitioners for readability, interpretability, and clarity. The first industry practitioner works in one of the top logistics companies and oversees all sustainability initiatives in the company. The other has served as Senior Vice-President in the top container shipping company and has taken charge of the strategic planning of container operations and green initiatives. Comments and suggestions taken during the interviews were used to modify the measures. The measures of each construct and their sources are presented in Table 1.

The measures for internal value chain, external value chain, regulatory, and public stakeholder participation were adapted from Wagner (2011) and Yin and Jamali (2016). A seven-point Likert scale was employed to evaluate the extent of the specific stakeholders' participation in the sustainability policies of the maritime transport firm. Under internal value chain stakeholder participation, there are two key stakeholder groups i.e. shareholders and employees. For shareholders, two measures pertaining to the level of their participation in the maritime transport firms' policies on sustainable financial returns and growth, and information disclosure and transparency were developed. For employees, three measures relating to their participation in the maritime transport firms' policies on setting competitive wages and welfare, promoting occupational health and safety, and training and career development were developed.

The external value chain stakeholders consist of both customers and suppliers. Three measures were developed to operationalise customers' participation in the maritime transport firms' policies on managing service quality and excellence, planning and implementing sustainability programmes and meeting customer expectations. On the other hand, two measures were developed to reflect suppliers' participation in the maritime transport firms' policies on creating win-win partnerships and attaining social and environmental goals collectively.

The regulatory stakeholder participation primarily relates to engaging the government via their participation in the maritime

transport firms' policies on enhancing public-private partnership or collaboration, subsidies for new vessel technologies, government capacity building, alignment with government initiatives and concerns, and legal compliance.

The public stakeholder participation concerns involving the local community and non-governmental organisations in the maritime transport firms' policies on investment in community development, community engagement and dialogue, as well as on promoting environmental activities such as establishing a green workplace, environmental management of operations, and participating in philanthropic activities.

To operationalise sustainability integration, five measures were developed to reflect the centrality, appropriability, proactivity, voluntarism, and visibility of the sustainability activities, policies, or strategies of an organisation. A seven-point Likert scale was employed to evaluate the extent of sustainability integration. These measures were developed based on Husted and Allen (2009) and Engert et al. (2016). Subsequently, they were modified to fit the context of this study. Similarly, a seven-point Likert scale was employed to evaluate the extent of the integration between business and sustainability strategies. Accordingly, 'Centrality' is measured by the extent to which sustainability is embedded in the maritime transport firms' vision, mission, objectives, and goals. 'Appropriability' is operationalised based on the extent to which the maritime transport firms' sustainability policies are implemented with the primary goal of achieving profits, and social or environmental objectives simultaneously. 'Proactivity' is measured by the extent to which sustainability policies of the maritime transport firms are constantly reviewed and adjusted based on the feedback of its stakeholders. 'Voluntarism' is operationalised by the extent to which the maritime transport firms' sustainability policies are selected and implemented with autonomy rather than to fulfil specific regulatory obligations or industry norms. Finally, 'visibility' is reflected by the extent to which the maritime transport firms' sustainability policies are actively communicated or disclosed to its stakeholders.

Finally, organisational performance is operationalised by five measures reflecting the various organisational benefits enjoyed by the maritime transport firm in the past three years. The measures are adopted from Brik et al. (2011) and Kuo et al. (2017). They relate to (1) better employees' recruitment and retention, (2) cost savings, (3) improved corporate image and relationship with stakeholders, (4) new market opportunities, and (5) improved customer loyalty. A seven-point Likert scale was employed to evaluate the extent of the benefits received

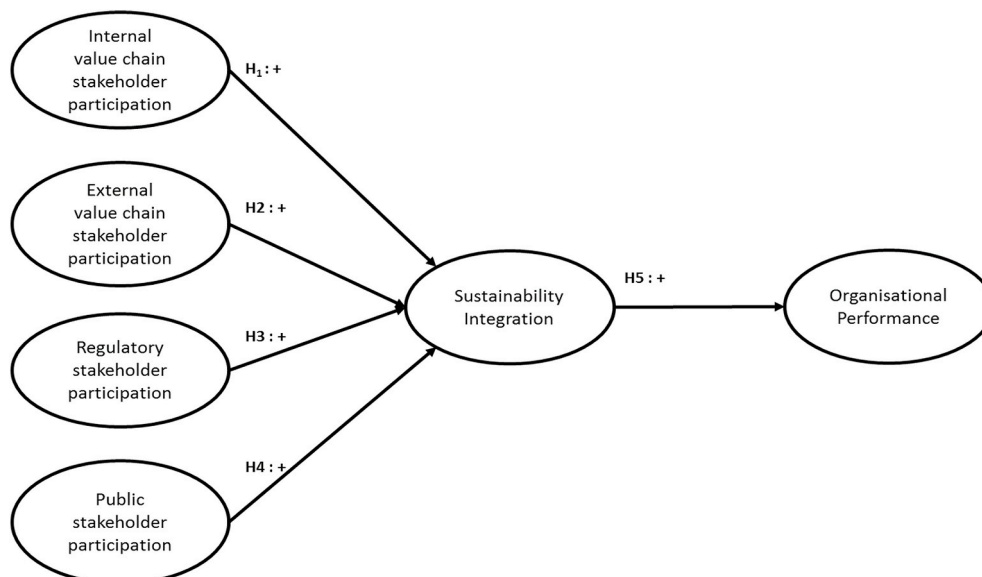


Fig. 1. A structure-conduct-performance framework for stakeholder participation.



**Table 1**  
Constructs, measures and sources.

Construct	Measure		Source
Internal value chain stakeholder participation	Shareholders	IVC1. Sustainable financial returns and growth	Murillo-Luna et al. (2008); Wagner (2011); Yin and Jamali (2016)
		IVC2. Information disclosure and transparency	
	Employees	IVC3. Competitive wages and welfare	
		IVC4. Occupational health and safety	
		IVC5. Training and career development	
External value chain stakeholder participation	Customers	EVC1. Product quality and service excellence	
		EVC2. Planning and implementing sustainability programmes	
		EVC3. Meeting customers' sustainability expectations	
	Suppliers	EVC4. Win-win partnerships	
		EVC5. Collective attainment of social and environmental goals	
Regulatory stakeholder participation	Government	RES1. Public-private partnership or collaboration	
		RES2. Government capacity building	
		RES3. Alignment with government initiatives and concerns	
		RES4. Legal compliance	
		RES5. Subsidies for investing in new vessel technologies	
Public stakeholder participation	Community, environment, and non-governmental organisation	PUS1. Community development	
		PUS2. Community engagement and dialogue	
		PUS3. Green workplace	
		PUS4. Environmental management of operations	
		PUS5. Philanthropic activities	
Sustainability Integration			
	INT1. Sustainability is embedded in my company's vision, mission, objectives, and goals		Husted and Allen (2009) Engert et al. (2016)
	INT2. Sustainability policies in my company are implemented with the primary goal of achieving profits, and social or environmental objectives simultaneously		
	INT3. Sustainability policies in my company are constantly reviewed and adjusted based on the feedback of our stakeholders		
	INT4. Sustainability policies and performance of my company are actively communicated or disclosed to our stakeholders		
	INT5. Sustainability policies in my company are selected and implemented with		

**Table 1 (continued)**

Construct	Measure	Source
Organisational Performance*	autonomy rather than to fulfil specific regulatory obligations or industry norms	
	PER1. Improved employees' recruitment and retention	Brik et al. (2011)
	PER2. Cost savings	Kuo et al. (2017)
	PER3. Improved corporate image and relationship with stakeholders	
	PER4. New market opportunities (e.g. attract new customer & ability to enter new market)	
	PER5. Improved customer loyalty	

Note: \* economic measures of organisational performance are reflected by PER2, PER4 and PER5.

from maritime transport firms for implementing sustainability in their organisations.

### 3.2. Sampling frame and sample size

Ideally, each of the stakeholders as shown in Table 1 should rate their participation in the sustainability activities of the engaged maritime transport firm. However, this poses great challenges for data collection. The reason is that for each maritime transport firm that participates in the survey, the firm has to refer their stakeholders (i.e. shareholders, employees, customers, suppliers, government and community) to us. Subsequently, we must contact and administer a survey on them. Due to various reasons such as (1) the maritime transport firm not willing to refer their stakeholders to us or (2) the referred stakeholders not willing to participate in the survey, many missing data will be expected. The missing data would create reliability and validity issues when testing the hypotheses of this study.

The survey is designed in a manner whereby the maritime transport firm can answer all the survey questions presented in Table 1, based on maritime transport firm's perception of each stakeholder participation in its sustainability activities. The survey questions (i.e. measurement items) are asked from the perspective of the maritime transport firm (i.e. the extent to which the firm *involves* a stakeholder in the participation of a particular sustainable activity). Hence, it is reasonable to assume that the maritime transport firm can reliably and accurately rate the level of participation from each stakeholder.

After finalising the main survey instrument, a sampling frame comprising 440 logistics companies comprising both freight forwarders and third-party logistics were retrieved from the Singapore Logistics Association online directory. Disregarding duplicated contacts, a total of 394 companies were selected. In addition, 200 shipping companies obtained from World Shipping Directory were also included. For shipping companies, only container, dry and liquid bulk shipping companies were included in the sampling frame.

The sample companies were largely international companies and only one representative was chosen from each company. The targeted candidates were mainly managers from the Sustainability, Corporate Social Responsibility (CSR) or Health, Safety, Security and Environment (HSSE) department.

Due to the perceptual nature of the study, there is, inevitably, possibility of biasness from respondents. To reduce the likelihood and extent of biasness, anonymity of response was emphasised. Respondents were also informed that their responses will be aggregated and will not be linked to them or their company.

An online survey was adopted for data collection because of its convenience for the respondents and due to cost consideration. The survey was created via an online survey site. An invitation email was sent out to the representative of the company on September 19, 2016. Up to six reminder emails were sent out subsequently between October

2016 and March 2017, at an interval of 1 month. In total, 156 companies out of the 594 responded to the online survey representing a response rate of 26.3%. The profile of the survey respondents is shown in Table 2.

### 3.3. Construct reliability and validity

Based on the survey data, a confirmatory factor analysis was performed to evaluate the measurement model fit and the validity and reliability of the measures.

Table 3 presents the factor loadings, their t-values, average variance extracted (AVE), and composite reliability of the constructs. As shown in Table 3, the  $\chi^2$  fit of the measurement model is 526.80 ( $df = 390$ ). Respectively, the other fit indices such as comparative fit index (CFI), Tucker-Lewis index (TLI), and standardised root mean square residual (SRMR) are 0.98, 0.98, 0.033. These values are acceptable as according to Hu and Bentler (1999), which suggests good model fit.

The measures are also considered reliable since all of the factor loadings and composite reliabilities are above the suggested value of 0.70 (Hair et al., 2010; Yuen et al., 2018). There is also convergent validity since the constructs' AVEs are above 0.50. Lastly, there is also discriminant validity since the squared correlations of the constructs are less than their AVEs (Table 4). Hence, the above results suggest that the measures are valid and reliable.

### 3.4. Common method bias analysis

Due to using cross-sectional data collected from survey questionnaire, common method bias might be an issue in this study. This study adopts the recommendation from Podsakoff et al. (2003) to examine common method bias by using Harman's single factor test. It was suggested that common method bias is an issue only if a single factor accounts for more than 50% of the variance of all 28 measures. An exploratory factor analysis was performed. It was found that the

**Table 2**  
Profile of survey respondents.

Category	Sub-category	No. of firms	%
Annual Revenue	<\$250 K	6	3
	\$250 K–\$500 K	8	5
	\$501 K–1 Million	11	7
	1+ Million – 5 Million	19	12
	5+ Million – 20 Million	23	15
	20+ Million – 50 Million	12	8
	50+ Million – 100 Million	20	13
	>100 Million	57	37
No. of Employees*	<10	8	5
	10 to 25	20	13
	26–50	28	18
	51–100	14	9
	101–250	20	13
	>250	66	42
Sector	Shipping company	58	37
	Logistics company (freight forwarders and third-party logistics)	98	63
Job position	Director	32	21
	Managers	94	60
	Non-management	30	19
Department	Sustainability	33	21
	Health safety security and environment	69	44
	Commercial	41	26
	Technical or operations	13	8

\* The basis of division is to consider for companies of different sizes. There are some very small companies. Therefore, they are categorised into smaller intervals of 10 or 15 (i.e. 0 – 10, 10–25 & 26–50). There are also mid-range companies. Therefore, they are categorised into larger intervals of 50 and 100 (i.e. 51 – 100 & 101–250). Lastly, large companies are those which have employees of more than 250 (>250).

**Table 3**  
Confirmatory factor analysis results.

Construct (j)	Measure (i)	Standardised Factor Loadings ( $\lambda_{ij}$ )	Average Variance Extracted ( $AVE_j$ )	Composite Reliability ( $CR_j$ )
Internal value chain stakeholder participation (IVC)	IVC1	0.79	0.66	0.91
	IVC 2	0.85		
	IVC 3	0.76		
	IVC 4	0.86		
	IVC 5	0.79		
External value chain stakeholder participation (EVCs)	EVC1	0.80	0.62	0.89
	EVC 2	0.76		
	EVC 3	0.83		
	EVC 4	0.76		
	EVC 5	0.78		
Regulatory stakeholder participation (RES)	RES1	0.79	0.62	0.89
	RES2	0.80		
	RES3	0.76		
	RES4	0.82		
	RES5	0.75		
Public stakeholder participation (PUS)	PUS1	0.70	0.57	0.87
	PUS2	0.75		
	PUS3	0.74		
	PUS4	0.77		
	PUS5	0.81		
Sustainability integration (INT)	INT1	0.72	0.57	0.87
	INT2	0.77		
	INT3	0.73		
	INT4	0.71		
	INT5	0.74		
Organisational performance (PER)	PER1	0.72	0.60	0.88
	PER2	0.74		
	PER3	0.77		
	PER4	0.79		
	PER5	0.84		

Note: Model fit indices:  $\chi^2 = 526.80$  ( $p < 0.05$ ,  $df = 390$ ); CFI = 0.98; TLI = 0.98; SRMR = 0.033.

**Table 4**  
Average variance extracted and squared correlations of constructs.

	IVC	EVC	RES	PUS	INT	PER
IVC	<b>0.66</b>	0.28	0.17	0.05	0.37	<0.01
EVC	0.53	<b>0.62</b>	<0.01	0.07	0.28	<0.01
RES	0.41	0.08	<b>0.62</b>	0.01	0.18	<0.01
PUS	0.23	0.27	0.10	<b>0.57</b>	0.08	0.02
INT	0.61	0.53	0.43	0.28	<b>0.57</b>	0.29
PER	0.11	0.02	0.03	0.14	0.54	<b>0.60</b>

Note: bolded values along main diagonal are AVEs, values below main diagonal are correlations, values above main diagonal are squared correlations.

variance of a single factor model is only 38%. Hence, common method bias is not a serious issue.

## 4. Results and discussion

### 4.1. Mediation testing

Since the central tenet of this study is grounded on the SCP paradigm which suggests mediated effects (refer to Fig. 1), a bootstrapping technique recommended by Zhao et al. (2010) was conducted. The hypothesised paths in the model presented in Fig. 1 were bootstrapped based on a predefined sample distribution. The estimates of the direct, indirect, and total effects of the four exogenous variables i.e. 'internal value chain stakeholder participation', 'external value chain stakeholder participation', 'regulatory stakeholder participation', and 'public stakeholder participation' were generated based on a random sampling with replacement process consisting of 5000 reiterations.

Based on the bias-corrected two-tail significance tests, the indirect effects of all stakeholders' participation on integration are statistically significant. However, all direct effects are not statistically significant, indicating that only indirect relationships exist. This is consistent with the conceptualisation of the research model proposed in the current study (Fig. 1).

In general, the results are aligned with stakeholder management theory which suggests that (1) stakeholders' participation in the planning and implementation of sustainability policies and (2) sustainability integration contributes positively to the organisational performance of maritime transport firms. Furthermore, the results concur with the SCP paradigm which posits that sustainability integration, which can be considered as a conduct of maritime transport firms, fully-mediate the effect of stakeholder participation in the planning and implementation of sustainability policies (i.e. structure) on maritime transport firms' organisational performance (i.e. performance).

#### 4.2. Structural model and hypothesis testing

The structural model presented in Fig. 1 is estimated using the obtained survey data. The results are depicted in Fig. 2. Overall, the structural model presented in Fig. 2 possesses good model fit (Model fit indices:  $\chi^2 = 518.56$  ( $p < 0.05$ ,  $df = 457$ ); CFI = 0.96; TLI = 0.97; SRMR = 0.053). The fit indices are within the recommended thresholds suggested by Hu and Bentler (1999). Additionally, the coefficient of determination ( $R^2$ ) for integration and organisational performance are 0.55 and 0.46, respectively. These values are acceptable in the context of organisational studies concerning organisational behaviour and performance.

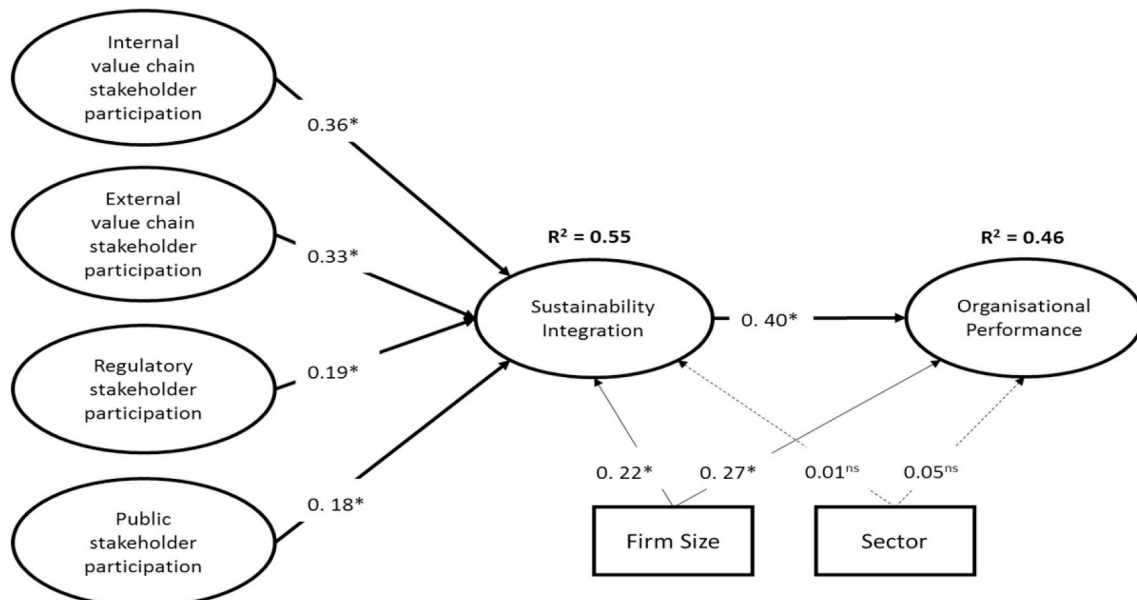
Two firm-characteristic variables which include 'firm size' and 'sector' are added in the research model to control for any spurious effects in the model estimation. It was found that the size of the firm has a positive effect on integration ( $b = 0.22$ ,  $p < 0.05$ ) and organisational performance ( $b = 0.27$ ,  $p < 0.05$ ). This indicates that compared to smaller firms, larger firms are more inclined to integrate their sustainability and business strategy, perhaps due to greater scrutiny from stakeholders and hence the need to invoke their participation in the

planning and implementation of sustainability policies (González-Benito and González-Benito, 2010). In addition, larger firms are positively correlated with organisational performance. Larger firms, which are associated with having more employees, allow specialisation i.e. efficient division of labour (Lee, 2017). This enhances productivity of employees which translates to stronger organisational performance. Meanwhile, 'sector' has no significant effects on integration ( $b = 0.01$ ,  $p > 0.05$ ) and organisational performance ( $b = 0.05$ ,  $p > 0.05$ ). This suggests that there are no sectorial differences in the results. Hence, the model can be applied to both the shipping and logistics sectors.

As shown in Fig. 2, the participation of all stakeholder groups (as perceived by the respondents from maritime transport firms) contributes positively and significantly to sustainability integration, which is proposed to consist of five dimensions related to centrality, appropriability, proactivity, voluntarism, and visibility of a maritime transport firm's sustainability activities, policies, or strategies. This finding supports the study's argument that stakeholders' participation enhances the aforementioned dimensions of sustainability integration through the (1) better identification, prioritisation, and fulfilment of stakeholders' needs, (2) creation of awareness, reputation, trust, and commitment from stakeholders who can influence the outcomes of a maritime transport firm, (3) optimisation of scarce organisational resources of a maritime transport firm to improve sustainability, and (4) increased collaboration between a maritime transport firm and its stakeholders, resulting in co-creation of values from implementing sustainability solutions.

Firstly, the standardised path estimate linking internal value chain stakeholder participation to integration is positive and significant ( $b = 0.36$ ,  $p < 0.05$ ). Thus,  $H_1$  is supported. There are several explanations for this. Firstly, when there is strong involvement from internal value chain stakeholders, there is higher tendency for them to take ownership of and commit to the sustainability initiatives. Secondly, strong involvement from internal value chain stakeholders may reflect an intrinsically motivated company where both employees and shareholders have interest in sustainability effort.

Secondly, the standardised path coefficient from external value chain stakeholder participation to integration is also statistically significant,



Note: Model fit indices:  $\chi^2 = 518.56$  ( $p < 0.05$ ,  $df = 457$ ); CFI=0.96; TLI=0.97; SRMR=0.053

\* Solid paths indicate significant effects ( $p < 0.05$ )

<sup>ns</sup> Dotted paths indicate not significant effects ( $p > 0.05$ )

Fig. 2. Estimates of structural model.

but less strong ( $b = 0.33, p < 0.05$ ). Therefore,  $H_2$  is supported. This correlation may be explained by Operant Conditioning. According to resource dependency theory, external value chain stakeholders have the ability to provide 'punishments' and 'reinforcers' to maritime transport firms (Yuen et al., 2017b). They may withdraw partnership in cases of non-compliance or provide more business opportunities in exchange for compliance with their sustainability requirements. As such, high participation from external value chain stakeholders will result in maritime transport firms placing more emphasis on their sustainability strategy and ensure better integration with business strategy.

Thirdly, the standardised path from regulatory stakeholder participation to sustainability integration is also positive and significant ( $b = 0.19, p < 0.05$ ). Hence,  $H_3$  is supported. However, it is noted that the magnitude of the effect is considerably lower than the value chain stakeholders. A reason is because requests from regulatory stakeholders may be taken to be mandatory and resources may be used to ensure compliance of such request rather than on other aspect that enhances integration with maritime transport firms' existing business strategy (Husted and Allen, 2009). As such, this reduces autonomy in the management of sustainability, which is a dimension reflecting the success of integration. Consequently, this obstructs maritime transport firms to take advantage of the opportunity to build firm-specific resources and capabilities that are congruent with their business strategy.

Lastly, the standardised path from public stakeholders to sustainability integration is also positive and statistically significant ( $b = 0.18, p < 0.05$ ). Hence,  $H_4$  is supported. However, similar to regulatory stakeholder participation, the effect of public stakeholder participation on sustainability integration is considerably lower than value chain stakeholders. This may be explained by the fact that logistics is primarily a business-to-business industry and have less visibility to the public as compared to business-to-consumer industries (Skovgaard, 2014). Public stakeholders which include communities, public, non-governmental organisations and media generally have less interference in how maritime transport firms operate, and thus, their participation has lesser effect on the level of integration between business strategy and sustainability strategy.

Regarding sustainability integration and organisational performance, the standardised path coefficient is positive and significant ( $b = 0.40, p < 0.05$ ). In this regard, organisational performance of maritime transport firms can be improved through stronger integration of sustainability and business strategies in their organisation. These dimensions could be viewed as a set of conduct or capabilities that are developed or enhanced through stakeholder participation by identifying, prioritising, and embedding their input into maritime transport firms' sustainability and business strategy. This conduct ultimately leads to stronger organisational performance for maritime transport firms.

## 5. Conclusion

### 5.1. Summary of findings

Through the theoretical lens of stakeholder management theory, this research applies the SCP paradigm to analyse the effects of stakeholder groups' participation on the integration of maritime transport firms' sustainability and business strategy (i.e. sustainability integration). It also examines the effect of integration on organisational performance of maritime transport firms.

A research model comprising a network of hypotheses was developed, and a survey questionnaire was administered on 156 maritime transport firms located in Singapore. Subsequently, the obtained data were used to examine the research model.

Consistent with the SCP paradigm, the results show a fully-mediated model whereby the effects of stakeholder groups' participation on organisational performance of maritime transport firms are indirect. The effects are channelled via sustainability integration.

In addition, aligned with stakeholder management theory, the results

reveal that participation from stakeholder groups has varied effects on sustainability integration, and subsequently, their organisational performance. This finding further strengthens the business case of implementing sustainability wherein stakeholder engagement and participation are crucial in the planning and implementation of sustainability policies of maritime transport firms. Furthermore, the policies should be strategically devised and embedded into the business strategy for maritime transport firms to realise improvements in their organisational performance.

### 5.2. Theoretical contributions and managerial implications

This study contributes to both theory and practice in several ways. Firstly, from the theoretical perspective, this finding enriches the literature on stakeholder management theory which stresses the importance of building the business case of sustainability. Increasingly, scholars have argued that implementing sustainability need not necessarily result in trade-offs between social and economic performance. Instead, the simultaneous achievement of social and economic goals is possible through various approaches such as conducting stakeholder analysis as well as cost-benefit analysis and searching for cumulative capabilities i.e. finding synergies with existing operations. Specifically, this study contributes to the literature by revealing that such a feat is also possible through sustainability integration i.e. if sustainability policies or strategies are implemented with the participation of stakeholders and these policies are congruent with or embedded into the business strategy of maritime transport firms. Sustainability integration is reflected by centrality, appropriability, proactivity, voluntarism, and visibility of the sustainability activities or strategies of an organisation. As shown in this study, these dimensions of sustainability integration can be enhanced through the engagement of stakeholders by involving them in the planning and implementation stage.

Another theoretical contribution of this study is that it establishes the relationship between stakeholder participation, integration, and organisational performance by introducing the SCP paradigm. The paradigm posits that the structure of a market gives rise to the development of relevant strategies, which influences the conduct of an organisation. Subsequently, the conduct of an organisation drives performance. Applying the central tenet of the SCP paradigm to this context, stakeholder participation can be viewed as a strategy that can be adopted in response to the environment in the logistics market where there has been growing pressure exerted by stakeholders on maritime transport firms to implement sustainability. Subsequently, the strategy of involving stakeholders in the planning and implementation of sustainability leads to stronger sustainability integration as it enhances centrality, appropriability, proactivity, voluntarism, and visibility of maritime transport firms' sustainability activities. Consequently, this leads to stronger organisational performance such as increased market shares, reduction in cost, and improved corporate image and relations with stakeholders.

Thirdly, unlike the majority of the previous research on stakeholder management theory that adopts a descriptive approach to explain *why* implementing sustainability can result in stronger organisational performance, for instance, due to growing pressures exerted by stakeholders, this study addresses the question of *how* sustainability can be implemented in organisations to optimise their performance. This provides more implications for practitioners. Specifically, this study focuses on explaining how participation from stakeholders can enhance organisational performance via sustainability integration through the enhancement of centrality, appropriability, proactivity, voluntarism, and visibility of sustainability activities, policies, or strategies of a maritime transport firm.

The last theoretical implication of this study is that it introduces the term 'sustainability integration' and contributes to its operationalisation. In response to the increasing call for embedding sustainability issues into the strategy and operations of organisations, the current study



has coined and defined sustainability integration using five dimensions. They are centrality, appropriability, proactivity, voluntarism, and visibility. This provides rich avenues for future research to explore the relationship of sustainability integration with other organisational or sustainability concepts such as competitive capabilities, customer-company fit, stakeholder-company fit as well as stakeholder loyalty and satisfaction.

From the applied perspective, this study has addressed the allocation of resources to optimise maritime transport firms' organisational performance. Organisation resources are scarce. As a result, maritime transport firms must allocate resources to satisfy a myriad of stakeholders' sustainability needs. Maritime transport firms should allocate more resources to stimulating interest, garnering involvement from internal value chain stakeholders and partnering with external value chain stakeholders. Their participation has the strongest influence on sustainability integration and performance. To enhance internal value chain stakeholder participation, top-down commitment can be nurtured as that enables a company-wide effort towards planning and developing sustainability. Reward and promotion schemes may also be tied with organisational performance to recognise individuals' contribution towards achieving sustainability objectives. Likewise, external value chain stakeholder participation may be developed through 'collaborative partnerships'. In other words, maritime transport firms should develop win-win situations with their suppliers or customers by examining approaches that create synergies or complementarities in their operations rather than stipulating environmental or societal requirements which erodes the profits of their value chain partners. By working together to achieve sustainability objectives, maritime transport firms can help external value chain stakeholders appreciate the need for such actions and ensure better coordination and alignment with their sustainability and business strategies.

This study also has implications for public officials towards improving the organisational performance of maritime transport firms. They should minimise interfering with the sustainability strategy formulation process of maritime transport firms through specifying rules and regulations. Rules and regulations may restrict the autonomy of maritime transport firms to pursue sustainability programmes that are also beneficial to their economic performance. Public officials should value the importance of autonomy in the strategic implementation of sustainability by specifying sustainability targets without influencing the process of achieving these targets. This can be further complemented by incentives or taxes targeted directly at maritime transport firms or indirectly at the stakeholders of maritime transport firms. With reference to the latter, stakeholders will become more motivated towards implementing sustainability. Subsequently, this would compel maritime transport firms to follow suit and involve stakeholders in the planning and implementation of sustainability policies, leading to better sustainability integration and consequently, stronger organisational performance.

### 5.3. Limitations and recommendations

Regarding research limitation, the sample size is only sufficient for aggregated analysis but not sub-group analysis. There are possibilities that the effects may vary with business contexts such as industries (e.g. clean vs. dirty industries), national culture (e.g. high vs. low power distance), company's origin and location (e.g. stringent vs. lax sustainability regulations). Future research can consider examining these nuances to broaden the applicability of the results.

Another limitation of this study concerns its scope which only considers the effects of stakeholder participation, sustainability integration, and organisational performance. As mentioned earlier in the implications, future research can consider expanding the model by considering the interaction of stakeholder participation or sustainability integration with other organisation concepts or theories such as competitive capabilities, customer-company fit, stakeholder-company fit as well as

stakeholder loyalty and satisfaction.

In addition, there may also be limitation due to nature of the method adopted. Survey data are subject to limitations such as the perceptual nature of the factors used to assess the various constructs, the possibility of common method bias even though it has been shown to be of a minor concern in this study. Similar to most studies, this study surveyed only a person from each company. While this may be a potential limitation, it is also an opportunity for future research. It is recommended that in future, a broader respondent base within the organisation may be used to allow the researcher to identify and analyse the difference in opinions between senior management and junior employees. A case study which focuses on a specific maritime transport firm and its stakeholders can also be conducted. This allows the different stakeholders' participation to be objectively evaluated by the respective stakeholder and generates more managerial insights at the micro level.

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