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# The effect of sustainable shipping practices on shippers' loyalty: The mediating role of perceived value, trust and transaction cost



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#### ABSTRACT

This study investigates the role of perceived value, trust, and transaction cost in mediating the effect of sustainable shipping practices (SSP) on shippers' loyalty. Theoretical and alternative models were proposed and compared using survey data collected from 289 shippers. The results show that the relationship between SSP and shippers' loyalty is mediated by shippers' perceived value of SSP, shippers' trust in a shipping company's commitment towards sustainability, and sustainability-related transaction cost. This study offers an alternative theoretical explanation to the relationship and provides important managerial insights to strengthen shippers' loyalty through implementing SSP.

#### 1. Introduction

Maintaining and building a strong base of loyal customers are imperative for the survival of shipping companies in view of growing competition, which is reflected by aggressive market consolidation, alliances, horizontal integration, and competition with other transport modes (Notteboom et al., 2017). There has been growing consensus in the recent literature that implementing sustainable shipping practices can be viewed as a strategy to nurture shippers' loyalty, which is associated with positive word-of-mouth, willingness to pay more, and repurchase intention (Lun et al., 2015; Shin et al., 2017; Yuen et al., 2016a).

In this study, sustainable shipping practices are referred to as a set of organisational activities aimed at the integration of societal and environmental concerns with the business operations of shipping companies and in the interaction with stakeholders on a voluntary basis (Yuen et al., 2017b). The stakeholders of a shipping company primarily include its shareholders, employees, customers or shippers, suppliers, societies and the environment (Skovgaard, 2014).

Existing theoretical research suggests that sustainable shipping practices can positively influence shippers' loyalty based on institutional theory (Vejvar et al., 2017; Yang, 2017). Institutional theory posits that organisations strive for legitimacy and stability, which can be attained by conforming to regulative, normative, and coercive pressures exerted by stakeholders. For instance, driven by the increasing demand from their downstream supply chain partners and end-consumers to reduce businesses' societal and environmental impacts, shippers are also exerting coercive pressures on shipping companies to practise sustainability (Skovgaard, 2014). According to Pawlik et al. (2012), ISO 26000 (i.e. social responsibility certification) and ISO 14000 (environmental management certification) are increasingly being used by shippers as indicators of shipping companies' sustainability performance and the basis for awarding shipping tenders. In this regard, failing to conform to such pressures from shippers may exclude shipping companies from securing the tenders, or cause existing shippers to switch loyalty by choosing greener services offered by other shipping companies. The loss of shippers to competitors could potentially affect the long-term profitability and survivability of a

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shipping company.

Although institutional theory has provided a means-to-an-end explanation for adopting sustainable shipping practices i.e. to gain shippers' loyalty, there is currently a lack of understanding as to how sustainable shipping practices lead to the formation of shippers' loyalty. Furthermore, a majority of the existing research is conducted on industries that have a direct contact with consumers i.e. business-to-consumer (B2C). To some extent, their findings are not applicable to the shipping industry which involves business-to-business (B2B) transactions. There are arguments in the literature stating that customers' evaluation of and response to sustainable practices are to some extent different between B2C and B2B settings (Yuen et al., 2016b). Firstly, B2B industries are positioned further away from end-consumers. As a result, their sustainable activities are concealed from and less scrutinised by the end-consumers, public, and media. Secondly, product and service evaluations are more complex and rational in B2B settings due to the myriad of stakeholders' concerns to be accounted for during the evaluation process.

There are presently very few studies that examine the decision-making process of shippers i.e. the various intermediary mechanisms that exist between sustainable shipping practices and shippers' loyalty. With the deliberate consideration that the shippers' behaviours are rational and are hence profit-maximisers, this study argues that shipping companies' sustainable shipping practices should provide benefits to shippers and hence, incentivise them to exhibit loyalty to a shipping company in the form of continued patronage. For instance, such benefits could be derived from the enhancement of utility, development of a relational contract, and reduction in overall cost from using a particular shipping service.

Based on reviewing the extant literature, this study summarises three organisational theories that underpin the above considerations and arguments. Specifically, it combines (1) perceived value theory, (2) social exchange theory, and (3) transaction cost theory to model the relationship between sustainable shipping practices and shippers' loyalty. Based on the theories, the intermediary constructs of sustainable shipping practices and shippers' loyalty were identified, and their interconnections were specified.

The rest of the study is organised as follow. Firstly, the theoretical model which illustrates the network of hypotheses and their associated theory is introduced. Thereafter, each hypothesis is discussed. Next, measurement items are developed to operationalise the constructs in the theoretical model. Subsequently, survey data are collected from shippers located in Singapore. Based on the data, the theoretical model is examined using structural equation modelling. The results are then presented and discussed. Finally, conclusions are drawn.

#### 2. Theoretical model, theories and hypotheses

The central argument of this study is that sustainable shipping practices implemented by shipping companies can lead to shippers' loyalty only when such practices provide benefit to shippers, who are profit-maximisers. Compared to B2C industries, the objective of profit-maximising is especially pronounced in the shipping industry since shippers are also producers. From reviewing the literature, the benefits of sustainable shipping practices can be segmented into the enhancement of utility, strengthening of relational contract, and reduction of transaction cost. Accordingly, this study proposes three theories to represent each segment. They are perceived value theory, social exchange theory, and transaction cost theory.

Fig. 1 depicts the theoretical model of this study. The model specifies the network of hypotheses linking the constructs "sustainable shipping practices", "shippers' perceived value", "shippers' trust", "transaction cost", and "loyalty". As shown in Fig. 1, each hypothesis is supported by an underpinning theory.  $H_1$  and  $H_2$  are underpinned by perceived value theory.  $H_3$  and  $H_4$  are supported

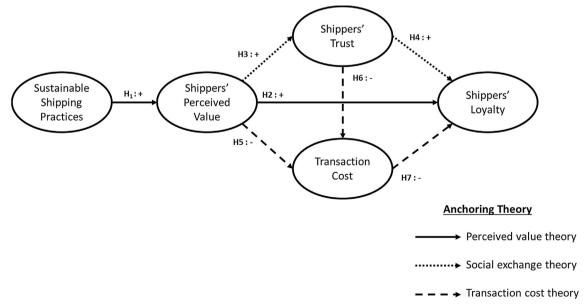


Fig. 1. The Theoretical Model.

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