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# **The Impact of Corporate Social Responsibility on Customer Satisfaction, Relationship Maintenance and Loyalty in the Shipping Industry**

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## **ABSTRACT**

This paper aims to examine the impact of perceived Corporate Social Responsibility (CSR), with a focus on ethical and environment questions related to the constructs of Customer Satisfaction (CS), Relationship Maintenance (RM) and Customer Loyalty (CL), on determining the attitudinal and behavioural loyalty and maintenance of customers in the shipping industry. For this purpose, this study enhances its empirical validity by collecting data from 214 respondents in South Korea and testing the hypothesis using structure equation modelling. It was found that (1) CSR is an effective relationship marketing tool that requires further research to investigate its benefits; (2) Systemic investigation in CSR activities in the shipping industry finds publishing CSR reports the most preferred tool among major shipping companies; and (3) There is a strong empirical evidence which supports that values have a significant impact on the customers' perception of CSR performance.

**Keywords:** corporate social responsibility, relationship maintenance, customer satisfaction, customer loyalty, shipping industry.

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## **ABSTRACT**

This paper aims to examine the impact of perceived Corporate Social Responsibility (CSR), with a focus on ethical and environment questions related to the constructs of Customer Satisfaction (CS), Relationship Maintenance (RM) and Customer Loyalty (CL), on determining the attitudinal and behavioural loyalty and maintenance of customers in the shipping industry. For this purpose, this study enhances its empirical validity by collecting data from 214 respondents in South Korea and testing the hypothesis using structure equation modelling. It was found that (1) CSR is an effective relationship marketing tool that requires further research to investigate its benefits; (2) Systemic investigation in CSR activities in the shipping industry finds publishing CSR reports the most preferred tool among major shipping companies; and (3) There is a strong empirical evidence which supports that values have a significant impact on the customers' perception of CSR performance.

***Keywords:** corporate social responsibility; relationship maintenance; customer satisfaction; customer loyalty; shipping industry; relationship marketing*

## **1. Introduction**

The concept of Corporate Social Responsibility (CSR) has been a main research topic and researchers have adopted it in various perspectives over the past several decades. CSR is often cited as a key determinant of customer loyalty, either directly or indirectly, via other constructs, or together (Choi and La, 2013; Mandhachitara and Poolthong, 2011). In addition, it is widely believed that CSR has multiple dimensions (Carroll, 1991; Salmones et al., 2005), and most previous research has focused on the philanthropic component of CSR, which is a component of cause-related marketing (Choi and La, 2013; Barone et al., 2000).

In an early attempt to empirically investigate the impact of CSR, some scholars focused on the relationship between corporate social behaviour and financial performance (Aupperle et al., 1985; Sariannidis et al., 2013). Later, there have been studies in which the impact of CSR was measured in relation to socially-responsible marketing activities such as environment protection, community volunteer activities,

natural resource saving and social charities (Handelman and Arnold, 1999; Quazi and O'Brien, 2000). In addition, some scholars have tried to measure the influence of CSR on customer behaviour (Lafferty and Goldsmith, 1999; Maignan, 2001; Haddock-Fraser and Tourelle, 2010).

Since the recognition of the role of Customer Loyalty (CL) in business success (Kotler and Armstrong, 2008; Lewis and Soureli, 2006; Lii et al., 2013), there have been fairly recent attempts to incorporate CSR into the CL model (Mandhachitara and Poolthong, 2011; Salmones et al., 2005; Choi and La, 2013). However, most research topics on CL or Relationship Maintenance (RM) have been in the manufacturing industries due to distinctly different characteristics from intangible services (Lee and Cunningham, 2001; Lewis and Soureli, 2006). In the service industries, reliability and confidence play an important role in building and maintaining loyalty (Dick and Basu, 1994). Among the service industries, there are very few studies conducted in the shipping industry, and those by Shang (2012), Psaraftis and Kontovas (2010) and Dinwoodie et al. (2012) who investigated the implications of various maritime emissions reduction policies for maritime logistics were among few of them.

As there has not been any application of CSR in relationship marketing in an empirically rigorous manner, this study narrows its focus to the ethical-environmental components of CSR in investigating the perceived CSR and other key constructs associated with relationship marketing. In an attempt to deepen the understanding of how customer perceptions of CSR are connected with other customer-related outcomes, we proposed a comprehensive model that encompasses and investigates the relationships between CSR and other key constructs such as CS, RM and CL.

The rest of this paper is structured as follows. First, the theoretical background is briefly reviewed and resulting research hypotheses are proposed. Then, the empirical

validation of the theoretical model using an SEM approach is presented. The last part of this paper presents the results of the analysis, discussion of findings, limitations and suggestions for future research and practical application.

## **2. Theoretical Background**

### **2.1. CSR as a Relationship Marketing Tool**

Although the concept of CSR has many interpretations among scholars, the suggestion of Carroll's (1991) of a broad concept that encompasses four dimensions (economic, legal, ethical and philanthropic) has been fairly widely accepted (Mohr et al., 2001; Salmones et al., 2005; Hassan and Ibrahim, 2012).

Studies of customers-oriented CSR have adopted various analysis approaches. Several studies analysed the impact of cause-related marketing actions, observing the favourable predisposition of customers towards firms that engage in these activities (Ross et al., 1992; Ellen et al., 2000). Lafferty and Goldsmith (1999) and Handelman and Arnold (1999) found a greater effect of social responsibility on the overall valuation of a firm and its product. Other works have focused more on ethical aspects (for example, see Sen and Bhattacharya, 2001).

In addition, there are two main approaches to CSR as a marketing tool (Mohr et al., 2001). While the first approach deals with CSR in association with various stakeholders of the organization, the second is based on societal marketing concept (Kotler, 2008). Although the two groups have different views of CSR from each other, they share the same emphasis on socially-responsible company's concerns beyond short-term profitability. Meanwhile, Salmones et al. (2005) noted that there is the need to continue investigating the benefits of CSR as a marketing tool. As it was recognized that service industries are relational by nature, the traditionally prevailing view of marketing as a

series of transactions had been replaced with the relational marketing since the 1980s (Dwyer et al., 1987; Sheth and Parvatiyar, 2000). Ravald and Gronroos (1996) found that relationship marketing has been put forth as a way for firms to develop mutually beneficial and valuable long-term relationships with customers. Numerous studies have since provided empirical evidence on the impact of relationship marketing on behavioural loyalty which affects customer retention (Bolton et al., 2000; De Wulf et al., 2001).

Built upon previous studies, this paper investigates the influence of CSR with respect to its ethical and environmental components as a relationship marketing tool in the shipping industry. Considering the voluntary aspect of CSR, it is worth investigating the degree to which market leaders integrated the concept into their strategies. Moreover, Dahalan et al. (2012) argued that shipping companies adopted the concept of CSR towards the safety of navigation as a way to improve their branding and image.

As Korea is a major shipping and port logistics country, many Korean shipping companies are making more efforts to achieve ethical and transparent management and address social concerns since the Asian crisis in 1997. According to the Korea Maritime Institute, Korea is ranked in the world's top five maritime nations in 2013 with her fleet capacity of 55 million DWT and accounted for 3.5% (470.63 million TEUs) of the world's container throughput in 2012. In addition, its domestic 177 ocean-going shipping companies contributed about 3.4% of national GDP with sales of KRW 42 trillion.

Facing tougher competition in the international shipping logistics market, especially with the commercial deployments of ultra-large containerships in the near future, major shipping companies in Korea have recently adopted customer-oriented market strategies based on relationship marketing focusing on CS, RM and CL. For example, Hanjin

Shipping Co. Ltd. is the first Korean-flagged shipping company that introduced sustainable management as its long-term goal. The company has published the biennial report on its CSR since 2006 and has conducted Customer Satisfaction Index survey every year to assess its service quality. In addition, among the various attempts to mitigate climate change, Hanjin established Green Management Part in January 2010 to oversee and implement environmental management initiatives such as strategic compliance, green chain management and green reputation. Regarding social contribution, Hanjin's Yang Hyun Foundation has supported a variety of academic research projects since 2006. In line with Hanjin, other major shipping companies in Korea, such as STX Pan-Ocean and Hyundai Merchant Marine, have also developed their own CSR activities.

Looking at the global aspect, leading shipping companies, for instance, Maersk Line and NYK Line, have integrated the concept of sustainability into the core of their corporate strategies. This fact implies that CSR is essential to meet customers' needs and to establish long-term relationship. Thus, this study is significant as one of the earliest trials to investigate the influence of CSR on CS, RM and CL in the shipping industry.

## **2.2. Influence of CSR on CS, RM and CL**

As CSR has been identified as a priority for many companies (Luo and Bhattacharya, 2006), there have been attempts to examine the relationship of CSR to various variables and most of them suggest that CSR has an impact on customer product responses (Brown, 1998). In addition, several studies of CSR noted that social responsibility programs can provide a variety of benefits for companies, not just increased loyalty (Berens et al., 2005; Lichtenstein et al., 2004; Salmons et al., 2005; Marín et al., 2012).

Also, it is reported that customer behaviour towards a firm is positively affected by CSR initiatives (Bhattacharya and Sen, 2003; Folkes and Kamins, 1999) and service valuation models reveal CSR's direct (Mohr et al., 2001) or indirect (Salmones et al., 2005) influence. Besides, CSR has a significant impact on purchase intentions and vice versa (Barnes et al., 2005). As previously mentioned, there have been very few investigations on the effect of perceived CSR on customer satisfaction (CS) in the shipping industry. Subsequently, the impact of CS on RM and CL in the shipping industry is also examined in the present research.

It is noted that CSR can positively affect customer-company identification, customer donations (Lichtenstein et al., 2004), customer attitudes toward a product (Berens et al., 2005) and financial outcomes such as Tobin's q and stock returns (Luo and Bhattacharya, 2006). With positively perceived CSR, customers have a tendency of favourable evaluation of and attitudes toward a firm (Gürhan-Canli and Batra, 2004; Sen and Bhattacharya, 2001; Mandhachitara and Poolthong, 2011). Luo and Bhattacharya (2006) also found a direct relationship between CSR and CS by showing that a firm's CSR initiatives could increase customer satisfaction. Therefore, we can consider the possible existence of the direct relationship between CSR and CS. Hence, the following hypothesis is put forward:

***Hypothesis 1 (H1):*** There is a positive relationship between CSR and CS.

Further from the above, Choi and La (2013) found that CS may lead to not only enhanced loyalty and the spread of positive word-of-mouth but also more positive perception of CSR. In turn, several other authors such as Aldlaigan and Buttle (2005), Liljander and Roos (2002), Reinartz and Kumar (2002) found that customers who are loyal to a firm display more favourable attitudes towards the firm, in comparison to competitors. CS and CL are highly correlated (Athanasopoulos et al., 2001; Hallowell,



1996; Hur et al., 2013), but form two distinct constructs (Bennett and Rundle-Tiele, 2004; Oliver, 1999). CS is a good basis for loyalty (Bloemer et al., 1998; Pont and McQuilken, 2005). Several studies have shown that CS has a positive impact on customer maintenance, service usage, and/or share of customer purchases, and loyalty (Bolton et al., 2000; Hallowell, 1996; Leverin and Liljander, 2006; Aurier and N'Goala, 2010). In addition, Aurier and N'Goala (2010) investigated the specific meanings and role of each of these key relationship marketing constructs in service relationship maintenance and development.

Apart from these aspects relating to the commercial strategy perspective, CSR can also influence loyalty either indirectly or directly (Sureshchandar et al., 2002; Maignan and Ferrell, 2001; Salmones et al., 2005; Choi and La, 2013; Gundlach and Murphy, 1993; Romána, 2003). Bolton et al. (2004) analysed the need to consider actual customer patronage behaviour and to better reflect the length (customer retention), depth (service usage), and breadth (cross-buying) of the service relationship. As most CEOs in the world regard customer loyalty and retention as the most important task (Ball et al., 2004), Choi and La (2013) investigated the role of CSR and customer trust in the context of recovery satisfaction and loyalty after service failure. Alrubaiee and Al-Nazer (2010) also reported a positive relationship between CS and CL. Therefore, the following hypotheses are postulated:

***Hypothesis 2 (H2):*** There is a positive relationship between CS and RM.

***Hypothesis 3 (H3):*** There is a positive relationship between CS and CL.

Meanwhile, it has also been argued that RM and its development contribute to the long-term profitability of the customer (Aurier and N'Goala, 2010). RM as customer retention is a critical parameter of customer lifetime value (Reinartz and Kumar, 2000; Gupta et al., 2004; Gustafsson et al., 2005). A clear antecedent of loyalty is the RM

(Dagger et al., 2011; Aurier and N'Goala, 2010). Previous research also shows that RM influences CL directly (Bloemer et al., 1998; Jones et al., 2000; Athanassopoulos et al., 2001). As a consequence, in order to examine this relationship in the shipping industry, the following hypothesis is proposed:

***Hypothesis 4 (H4):*** There is a positive relationship between RM and CL.

### **3. Research Methodology**

#### **3.1. Measures and data collection method**

The literature review indicates that customer perception of CSR has a positive influence on CS (Sen and Bhattacharya, 2001; Lichtenstein et al., 2004; Luo and Bhattacharya, 2006; Mandhachitara and Poolthong, 2011), and RM also has a positive influence on CL (Bloemer et al., 1998; Jones et al., 2000; Athanassopoulos et al., 2001). In addition, CS has a positive impact on both RM and CL (Bolton et al., 2000; Hallowell, 1996; Aurier and N'Goala, 2010). Based on the previous literature, we selected measurement items that were deemed appropriate for the present study. All measures used for the analysis are shown in Table 1.

*Insert Table 1 about here*

A survey was employed as the main method of data collection for the empirical validation of this research. The survey participants were asked to respond using the seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Before collecting the data, the survey instrument was pre-tested for content validity as suggested by Dillman (2001) and Hult et al. (2007). The clarity, accuracy, and readability of the survey items were pre-tested with 13 respondents: three from operations and strategies departments of exporters and importers; 10 from freight

forwarders (seven are senior managers and three are members of the board of directors). Base on their feedback, the instrument was modified and some redundant or ambiguous factors were eliminated.

### **3.2. Sample**

Survey data were collected using a questionnaire administered electronically between March and May 2013. The study population consists of 1,000 shippers and freight forwarders randomly selected among container shipping service users in South Korea, which were obtained from the database of Korea International Trade Association. The sample can be considered representative of the population, with non-observation errors being low. The survey was circulated to potential respondents, consisting of staff in charge of operations and strategies and CEOs of shippers and freight forwarders. Within a week of contacting the potential respondents, a reminder email was sent, and within three months from the first mail-out 223 responses were received, of which 214 were usable, resulting in an effective response rate of 21.4%. To test for non-response bias, we compared the responses of early respondents with those of late respondents (Lambert and Harrington, 1990). Results of t-tests showed that there were no statistically significant differences (at the 99% confidence level) between these two groups. Our final sample size compares favourably to most of the ones of previous studies (such as those by Tabachnick and Fidell, 2001; Hair et al., 2006). A total of 97 respondents (47.3% of the total sample) are shippers and 117 of them (54.7%) are freight forwarders or third party logistics service providers. The detailed sample characteristics are shown in Table 2.

*Insert Table 2 about here*

## **4. Analysis and Results**

### **4.1. Construct Validity and Reliability**

The measurement model was evaluated for overall fit using tests of reliability, convergent and discriminant validity. Construct validity was established using confirmatory factor analysis (CFA) (Churchill, 1991). The properties of all of the items were described as reflective measures on their respective factors and evaluated via CFA using AMOS 21.0 software.

The results of CFA, as shown in Table 3, showed that all item loadings are significant, with t-values ranging from 5.05 to 8.95. Moreover, the smallest standardized loading is 0.76, above the recommended minimum value of 0.50 (Bagozzi et al., 1991). Therefore, the constructs exhibit adequate convergent validity. The value of the squared multiple correlations (SMCs) range from 0.58 to 0.90, which indicates a moderate to good reliability. The fit of the measurement model was assessed using significant indicator loadings, composite reliability (CR), and average variance extracted (AVE). Both the CR and AVE represent the convergent validity of the measures with values between zero and one. The convergent validity exists when CR are greater than 0.7 and AVE are greater than 0.5 (Fornell and Larcker, 1981). The statistical assessment indicated that items A1, A4 from CSR scale, items A7 and A8 from CS scale, items A15 and A16 from RM scale, and item A20 from CL scale should be considered as candidates for removal to improve measurement model fit, and they were dropped from the measurement scale accordingly. Reliability of the factors was calculated using the cronbach's  $\alpha$  value. The cronbach's  $\alpha$  of CSR, CS, RM, CL are 0.90, 0.89, 0.87, and 0.93 respectively which are very reliable (Hair et al., 2006).

*Insert Table 3 about here*

The discriminant validity was assessed by comparing the AVE values with the square of the correlations between each pair of constructs. The AVE values should exceed the squared correlations values (Fornell and Larcker, 1981). As seen in Table 4, square-root AVE of each construct satisfies this criterion, hence providing evidence for discriminant validity (Anderson and Gerbing, 1988).

*Insert Table 4 about here*

#### **4.2. Hypotheses Testing**

Figure 1 illustrates the model with the structure equation modelling (SEM) results. SEM was conducted to test the hypothesized relationships. The structural model has a statistically significant chi-square value ( $\chi^2=122.111$ ,  $df=61$ ,  $p=0.00$ ). The data for all other relevant fit indices are also within an acceptable range (GFI=0.921, AGFI=0.881, RMR=0.064, NFI=0.946, CFI=0.972, RMSEA=0.069). Therefore, the adequacy of the structural equation models was evaluated on the criteria of overall fit with the data. The estimated path coefficients are shown in Figure 1.

*Insert Figure 1 about here*

The individual paths of the model were also evaluated. The hypothesized relationships were tested using their associated standardized regression coefficient and t-values. Results of hypothesis testing are shown in Table 5. It can be seen that CSR has a significant positive impact on CS ( $\beta=0.610$ ,  $p<0.01$ ); hence H1 is supported. The link between CS and RM ( $\beta=0.622$ ,  $p<0.01$ ) is also significant, implying the support for H2. The positive relationship between CS and CL (H3) indicates that positive customer assessments of CSR lead to a greater firm loyalty ( $\beta=0.387$ ,  $p<0.01$ ). Meanwhile, RM was found to have a significant positive influence on CL ( $\beta=0.512$ ,  $p<0.01$ ) which is in accordance with H4.

*Insert Table 5 about here*

## **5. Discussion and Implications**

### **5.1. A summary of findings**

In this paper, we aimed to deepen the understanding of the concept of CSR from the customers' perspective, as well as its benefits as a relationship marketing tool. Specifically, we carried out the research based on a survey with service users (shippers and freight forwarders) within the shipping industry in South Korea. With this consideration, we extended the existing literature on the relationship between CSR and customer behaviour (CS, RM, and CL) to the shipping industry by empirically testing four hypotheses.

Through the literature review, it became clear that CSR-related studies towards customers need to be developed further, since the consequences of CSR actions in the shipping industry are still unclear. As a result, we proposed the research hypotheses that firms' CSR behaviour has a direct and positive influence on customers in their overall satisfaction, as well as in RM and CL towards the firm. Specifically, the relationships between perceived CSR and other constructs, e.g. CS, RM, and CL in the context of relationship marketing in the shipping industry were examined in this study. The result of each hypothesis is as follows.

First, we examined the effect of CSR on CS. The results of the hypothesis testing provide support for the effect of CSR on CS. Previous research has suggested that a link exists between perceived CSR and CS. In turn, the literature (Folkes and Kamins, 1999; Alexander, 2002; Whalen et al., 1991) found that unethical marketing behaviour adversely influences consumers' attitudes, satisfaction, and behavioural intentions. The support for H<sub>1</sub> demonstrates that there is a positive relationship between the firm's CSR

and CS. This is due to the fact that CSR is considered to indicate a social norms between a company and customers (Carroll, 1991; Achrol and Kotler, 2012).

Secondly, we also investigated the effects of CS on RM and CL. In line with previous research (such as those by Gundlach and Murphy, 1993; Romána, 2003; Choi and La, 2013), results from the present research show that H<sub>2</sub>, H<sub>3</sub>, and H<sub>4</sub> were supported which demonstrate the positive relationship between CS and RM and CL.

The above results demonstrates that this research's findings are particularly noteworthy because this is the first research that proves the link between CSR as a relationship marketing tool and CS, RM, and CL in the shipping industry. This is in line with some earlier studies which examined CSR as a marketing tool (Choi and La, 2013; Salmones et al., 2005). The results show that CSR has an influence on customer loyalty and valuation of service. Successful CSR may not be sufficient to guarantee CL unless customers are satisfied. On this basis, the current findings suggest that CSR initiatives can help to build CS and then RM and CL subsequently. In the shipping industry, CSR is carried out mainly by global containership operators. However, as reviewed in the cases of Hanjin Shipping and Maersk Line, they tend to concentrate on the environmental aspect to satisfy international environmental requirements, while lack of in-depth understanding of customer needs. Hence, shipping companies should revise their policy to address latent CSR demands by trying to understand the needs of economic entities in the whole supply chain, and by integrating them into the development of their CSR related business practices.

## **5.2. Managerial Implications**

First, managers of shipping companies need to be aware of perceived CSR as a key variable to improve CS. For shipping practitioners, results from this research would

support their decision to invest in responsible business practices and sheds light on identifying factors affecting the potential benefits of investing in such intangible assets. In this regard, the perceived responsible business practices and distinct branding can provide a fundamental guidance on the to advantages of CSR-related capabilities and their practical application in managing customer satisfaction and loyalty. Moreover, this study can be useful for practitioners to assess the potential long-run effect of the CSR-related investments on customer loyalty. Thus, shipping companies need to establish internal CSR-devoted department that collaborates with all external stakeholders and supports CSR-related marketing or purchasing activities such as the prequalification of potential suppliers based on environmental and social criteria or CSR-related risk assessments of sub-suppliers.

Secondly, the results obtained in this research suggest that investment in CSR should be strongly encouraged in the shipping industry. Given that long-term success and maximization of shareholders' value are closely linked with not only economic responsibilities but also social orientation, it can be concluded that a company with the code of ethics, social commitment and concern for the environment will be able to enhance its economic performance. Thus, the first step to improve CSR activities of a firm is to understand the meaning and implications of this philosophy. Furthermore, shipping companies should carry out eco-friendly operations to reduce environmental impacts and do their best to protect the environment from ship's emission as well as unexpected accidents such as collisions and oil spills.

Last but not the least, CSR provides shipping companies both challenges and opportunities. With respect to challenges, shipping companies should tackle new business requirements from both existing and potential customers. The requirements include, for instance, certification, compliance, CSR-related business practices, or even beyond their corporate boundaries. On the other hand, with respect to opportunities, movement of market initiative from suppliers to buyers may cause structural change in the shipping market. This kind of change creates additional business opportunities for those major suppliers with superior capability to ensure a responsible upstream supply chain.



### **5.3. Limitations and Future Research**

There are various limitations of this work, which in turn lead us to propose future research directions. First, the hypotheses have been tested in the shipping industry in South Korea, which limits the external validity of the results. In order to generalise the results, and taking into account the scarcity of empirical work on this particular research area, we consider it necessary to broaden the study to other industries and countries.

Secondly, although earlier studies indicated that CSR includes four dimensions of economic, legal, social, environment, in this research we have examined CSR as a construct focusing only on the ethical-environmental component. Although previous research indicated that the ethical-environmental dimension is a primary component of CSR (Choi and La, 2013; Salmones et al., 2005), we suggest that the relationships between the research variables with all CSR dimensions be analysed in the future studies, in order to determine possible differences in the influence of various CSR dimensions on CS, RM, and CL.

Thirdly, it could be more useful for shipping managers in their marketing strategies if future studies distinguish customers of CSR-implementing shipping companies from those of non-implementing ones. In addition, there is a need to further develop the measuring scale of CSR from the customers' perspective. In the previous phase of the current research, we detected the lack of customers' awareness about shipping companies' CSR activities. Thus, our understating of customers' perception of CSR will be more comprehensive with further research in the area of CSR implementation.

And last but not least, there was no distinction between actual shippers (cargo owners) and freight forwarders (representatives of cargo owners) in the present research. It could be more reasonable to estimate some differences between these two groups of respondents. Therefore, we suggest that further research in which the attitudes to CSR

of these two groups of customers of shipping companies are compared to derive meaningful real-world implications for the shipping industry. Furthermore, we also propose that more in-depth studies are conducted to understand the differences between shipping companies' and customers' views of relationships, and to gain better comprehension of how shipping operation managers cope with having to develop different types of relationship marketing with different types of customers. These prospective studies in the area of CSR as a relationship marketing strategy will provide meaningful implications to both academics and practitioners at large especially in the contemporary business era.

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## LIST OF FIGURES & TABLES

Constructs	Variables	Supporting literature
Corporate Social Responsibility	A1. Top management's long-term plan for the company	Carroll (1991)
	A2. Cooperation with regional communities and educational institutions	Choi and La (2013) Mohr et al. (2001)
	A3. Corporate social responsibility in proportion to sales	Salmones et al. (2005)
	A4. Supporting additional education for its staffs	Hur et al. (2013)
	A5. Involvement in the voluntary activities in the community	Lii et al. (2013)
	A6. Contribution of eco-friendly activities to improvement of corporate image and sales	Aurier and N'Goala (2010) Luo and Bhattacharya (2006)
Customer Satisfaction	A7. Little regrets to have trade connection with the shipping company	Morgan and Hunt (1994)
	A8. Satisfaction with the communication with the shipping company	Sen and Bhattacharya (2001) Lichtenstein et al. (2004)
	A9. Satisfaction with the results from the transactions with the shipping company	Luo and Bhattacharya (2006) Mandhachitara and Poolthong (2011)
	A10. Satisfaction with the customer relationship management of the shipping company	
	A11. Satisfaction with the service quality (route, schedule, freight rate etc.) of the shipping company	
Relationship Maintenance	A12. Intention to invest time and money to keep the trade connection with the shipping company	Bloemer et al. (1998) Jones et al. (2000)
	A13. Intention to keep the trade connection with the shipping company despite the slightly higher freight rate than those of other shipping companies	Athanassopoulos et al. (2001)
	A14. Strong sense of loyalty to the shipping company	
	A15. Beneficial to keep the trade connection with the shipping company	
	A16. Important to keep the trade connection with the shipping company	
	Customer Loyalty	A17. Intention to the trade connection with the shipping company
A18. Intention to extend or renew the contract with my the shipping company in the future		Hallowell (1996)
A19. Intention to recommend the services of the shipping company to other companies		Aurier and N'Goala (2010)
A20. Intention to deliver positive word of mouth about the service of the shipping company to other companies		

**Table 1.** Construct Measurement

Variable		N	%
Company type	Shipper	97	45.3
	Freight forwarder/3PL	117	54.7
Relationship length	Less than 4years	59	27.6
	5-9years	71	33.2
	More than 10years	84	39.3
Working Career	less than 3years	16	7.5
	3-9years	72	33.6
	more than 10years	126	58.9
Gender	Male	178	83.2
	female	36	16.8

**Table 2.** Demographic distribution of survey respondents

Constructs	Variables	Standardized loadings	t-value	SMCs	Cronbach's $\alpha$	AVE	CR
CSR	A2	0.86	7.45	0.73	0.90	0.61	0.86
	A3	0.88	6.78	0.77			
	A5	0.81	8.39	0.65			
	A6	0.80	8.47	0.64			
CS	A9	0.85	7.46	0.73	0.89	0.70	0.87
	A10	0.87	6.84	0.76			
	A11	0.86	7.36	0.73			
RM	A12	0.76	8.59	0.58	0.87	0.61	0.82
	A13	0.85	7.06	0.72			
	A14	0.88	5.93	0.78			
CL	A17	0.93	6.23	0.87	0.93	0.82	0.93
	A18	0.95	5.05	0.90			
	A19	0.94	8.95	0.71			

**Table 3.** CFA and scale reliability

Notes:  $\chi^2=115.938$ ,  $df=59$ ,  $\chi^2/df=1.97$ ; GFI=0.925, AGFI=0.885, RMR=0.54, CFI=0.974, TLI=0.965, and RMSEA=0.067.



Constructs	CSR	CS	RM	CL
CSR	<b>0.61</b>			
CS	0.37*	<b>0.70</b>		
RM	0.09*	0.40*	<b>0.61</b>	
CL	0.22*	0.49*	0.57*	<b>0.82</b>

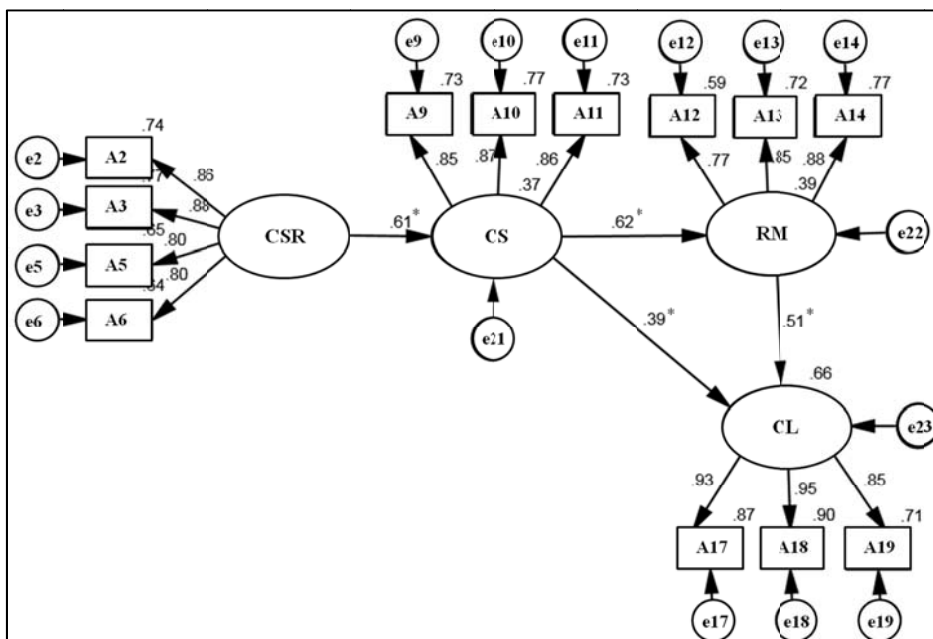
**Table 4.** Discriminant validity analysis

Notes: The bold diagonal values represent AVE; the off-diagonal values are the square of the correlations among the constructs. Significant at \*p < 0.01.

Hypothesized path	Hypothesis	Standardized path coefficients	t-values	Results
CS ← CSR	H1	0.610	8.537*	Accepted
RM ← CS	H2	0.622	8.687*	Accepted
CL ← CS	H3	0.387	5.638*	Accepted
CL ← RM	H4	0.512	7.227*	Accepted

**Table 5.** Results of hypothesis testing

Notes: Significant at \*p < 0.01.



**Figure 1.** Results of the main SEM model

Notes: Model fit statistics:  $\chi^2=122.111$ ,  $df=61$ ,  $\chi^2/df=2.00$ ,  $p=0.00 < \alpha=0.05$ ; GFI=0.921, AGFI=0.881, RMR=0.064, NFI=0.946, CFI=0.972, RMSEA=0.069; All coefficients are standardized; \*significant at p < 0.01