SERVICE PREFERENCE IN THE SHORT SEA SHIPPING MARKET

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ABSTRACT
Purpose: This study proposed a causality model in the context of Short Sea Shipping (SSS) services to investigate the influence of purchase intention through the buyers' service preference and perceived value.

Approach: This study applies the structure equation modeling (SEM) approach to assess the empirical strength of the relationships in the proposed model. The model has been validated through empirical test that the extent of preference matching between services delivered and customer needs in each attribute influence the perceived value of customers and therefore affects the final purchase intentions.

Findings: The attributes of a service can commonly be categorized into service quality and service preference where the former represents an attitude that the more the better but the latter pertains to each one's preferred selection. The findings show that timing related services, pricing related services, warehousing services, sales services, door-to-door services, information services and advertising services have positively impact on customer preference.

Practical implications: In addition to the conventional satisfaction indicator in which the quality is perceived after using the service, we show that the perceived value can be an effective criterion for evaluating the procurement decision before the consumption of transportation service

Originality/value: Although existing studies have addressed the importance of service quality and perceived value, the service preference of customers and its relationship to perceived value and Purchase Intentions remain unexplored.

Key Words: service preference, perceived value, purchase intention, Short Sea Shipping (SSS)

Introduction

The shift of freight from road to sea is due to shipping by water is more cost-effective than by road. The short sea shipping (SSS) is as a transport alternative to road and has received considerable attention in the shipping industry over the past decade. The purpose of SSS can be a leg of transshipment or a replacement to road transport. SSS has numerous advantages such as decrease of air pollution and overall cost savings to the operators. It is also considered as a special mode favored to alleviate road congestion Paixão & Marlow, 2002; Douet & Cappuccilli, 2011). In the trend in persuading scale economies, some used-to-be large vessels now become regional feeders. This change threatens the existing market structure of SSS. Although SSS is growing popularity, academic marketing research about service preference and perceived value of customers in the SSS market is still scarce. The service preference pertains to each one's preferred selection (O'Cass & Lim, 2001). For example, every one favors low price and good product quality but not necessarily everyone needs dedicate transport service. Prior research have identified several attributes of service for maritime firms (Paixão & Marlow, 2005, 2009; Lu & Marlow, 1999; Lu, 1999, 2000, 2003), such as reliability of sailing, availability of cargo space, on-time pick-up, etc., and their influence on the selection of carriers (Lu, 2003). However, few have specifically explored the influence of service attributes on preference of customer in the SSS context. While preferential decision has been an ongoing research topic in other social science disciplines for the past three decades (Muthitacharoen et al., 2006), very little effort has been made to incorporate preference in shipping service research. Thus, this research attempts to recognize what kind of services is preferred to shippers in short sea shipping.

The customer may cognitively perceive what they get and what they have to hand over for receiving services (Zeithaml, 1988; Gronroos, 1984). The service providers should design, develop and deliver the service offering on the basis of perceived value which is also an influential factor for selection of providers. Prior research summarized the response of the carriers, shipping agencies and freight forwarders concerning their level of satisfaction with the component aspects of service (Lu & Marlow, 1999). However, there is few literature that deals with perceived value from shipper's perspective in the SSS setting. The purposes of this paper are to: (1) investigate what service attributes are shipper's preferred services, (2) gain insights into the relationship between service preference and perceived value, and (3) examine the impact between perceived value and purchase intentions. Therefore, the hypotheses presented and tested seek to provide answers to the following research question: What service attributes will influence shipper's service preference? Is perceived value a significant determinant of purchase intentions in SSS context? Is service preference a significant determinant of perceived value and purchase intentions in SSS context?

Theoretical Background and Hypotheses Development

Short Sea Shipping (SSS)

Several different definitions of SSS are found in the studies, which show the complexity of the concept. From marketing, logistics or regulatory perspectives, some authors stated that SSS can embrace different ships, from conventional to innovative ones such as fast ships, with a variety of cargo handling techniques (horizontal, vertical or a mixture of both), ports, networks and information systems, which when studied. Crilley and Dean (1993) define short sea ships as ships, employed in the movement of goods and passengers, between 100 gross tonnage (GT) and 5000GT. Since SSS carriers can either own and operate a number of ships or own and run only one or a very small number of ships, service providers of different types may offer a variety of different services to their customers (Paixão & Marlow, 2002). The service attributes related to SSS have discussed by numerous of studies. Brooks (1983, 1984, and 1985) examined the determinants affecting the shipper's choice of a container carrier. Lu (1999) investigated the logistics service attributes and compared the satisfaction level with regard to performance between two logistics firms in Taiwan. Lu (2003) identifies four generic carriers' service factors from shippers' perspective. These factors lie in the category of quality attributes also. Cariou (2008) alleges that the industrial trends have shifted to that vertical and horizontal integration prevails and colossal vessels dominate regarding to the recent development of liner shipping market. As a result of pursuing scale economies, oversized vessels increasingly rely on spoke-and-hub configuration so that the role of regional feeders becomes important and this part of freight cost becomes significant. Paixão & Marlow (2005) identified eight service attributes for short sea shipping in the multimodal transport of an integrated service. They concentrate more on the attributes in quality dimension, leaving other preference issues untouched. Since not all service attributes are critical to every firm, the service is important to one firm may not be to another (Lu & Marlow, 1999). Thus, the key to creating competitive advantage is to understand the service preference of customer. Paixão and Marlow (2007) characterize the market of short sea shipping through assessing the impact of the Trans-European Transport Networks. They have classified three types of services including dedicated, systems, and standard operation, which reflecting the extent of customer preference attached to the carrier. In addition, Paixão and Marlow (2009) select eight directions of logistics strategies out of thirteen factors through summarizing 75 best-practices for the operators of short sea shipping. Their findings lay in the attitude of the more the better, lacking the consideration of requirement matching. Most service attributes identified reflect the more the better nature instead of a view of needs matching.

Service Preference

Preference is also defined as ''the setting by an individual of one thing before or above another thing because of a notion of bitterness'' (Brown, 1984). It has also been suggested that consumers have greater preference for services that are congruent with the consumer's actual self-concept which is how they would really like to be (O'Cass & Lim, 2001). The importance of service preference to other psychological variables has been observed in prior studies, such as beliefs and intentions (Anderson, 1982; Chandrashekaran, 1994). According to Hsu and Lu (2007), customer preference is defined as "the degree of users' positive feelings about participating in online game communities". Similarly, Muthitacharoen et al. (2006), the "service preference" stresses the that to satisfy customers' various needs.

Previous studies have addressed the importance of service quality in consumer marketing; however, few studies have empirically developed a framework to measure service preference of empirical marketing. However, researchers still lack research exploration on service attributes and service preference. Lu (2003) investigated the impact of carriers' service factor on shippers' satisfaction from shipper-carrier partnering relationships. An evaluation of aggregated shippers' perceptions of carriers' service attributes showed all 30 service attributes to be satisfactory. According to the factor analysis technique, Lu (2003) identified six service attributes or key dimensions, from shippers' perspective, were: timing related factor, pricing related factor, warehousing service factor, sales services factor, door-to-door factor, information factor and advertising factor. This study attempts to examine the relationship of service attributes with customer preference. Thus, borrowing from Lu (2003)'s six service attributes; we will validate how many service attributes have the impact on customer's preference. Thus, we may have following hypotheses.

H1: The service attributes are positively related to service preference.

H1a: The timing related services are positively related to service preference.

H1b: The pricing related services are positively related to service preference.

H1c: The warehousing services are positively related to service preference.

H1d: The sales services are positively related to service preference.

H1e: The door-to-door services are positively related to service preference.

H1f: The information services are positively related to service preference.

H1g: The advertising services are positively related to service preference.

Perceived Value

According to Christopher (1992), logistics service is explored to seek out an advantageous position based upon value advantage, and the view that relative value can help a firm gains an additional competitive advantage (Ernst, 1988). To our knowledge, the perceived value construct has not received as much attention in the transportation literature as other constructs. Unlike other industries, customers directly pay for service rendered, the SSS has third party providers that may pay for all or a part of service provided. The coverage by the third party provider may impact the customers' understanding of price and perceived value. It is complicate to analysis how perceived value of services is influenced in the SSS context. A customer perceives higher value if all service attributes of provider highly meet the requirement of customer. In SSS contexts, the role of perceived value is essential to examine since shipper might not always consume the best quality service, and they might instead purchase on the basis of their assessment of the value of a service (Cronin & Taylor, 1992). However, if the carrier provides services which are shipper preferred service, the shippers may perceive more value from a psychological evaluation of the relative payments and losses associated with the offering. This leads to the following hypothesis:

H2: Service preference is positively related to perceived value.

Purchase Intentions

Most studies have focused on understanding the initial purchase behavior (or behavioral intention) of customers, including willingness to buy (e.g. Jarvenpaa & Tractinsky, 1999); purchase intention (e.g. McKnight et al., 2002); willingness to transaction intention (e.g. Bhattacherjee, 2001); and behavioral intention to use (e.g. Suh & Han, 2003). There are multiple behavioral intentions, including customer loyalty, positive recommending behavior and repurchase intentions (Zeithaml, 1996; Cronin et al., 2000; Oh, 1999). In addition, Zeithaml et al. (1996) proposed a multidimensional measure of these indicators that include purchase intentions, complaint behavior, price sensitivity, and word-of-mouth communication. Some studies have confirmed that customer perceived value is et al., 1991; Cronin et al., 2000). In addition, since service is intangibility, inseparability, heterogeneity, and perishability (Etzel et al., 2001), "service preference" stresses the accessibilities of service and service variety

which involves the ability to provide different kinds of service that to satisfy customers' various needs (Muthitacharoen et al., 2006). If a customer perceives a shipper's services to be of high attribute he will be more likely to generate a favorable attitude towards it, demonstrate behavioral control over it, which in turn, translates into a higher intention to purchase it (Pavlou & Fygenson, 2006). In accordance with the previous research, it is hypothesized as follows:

H3: Perceived value is positively related to purchase intentions.

H4: Service preference is positively related to purchase intentions.

Therefore, we propose a research model as Figure 1.

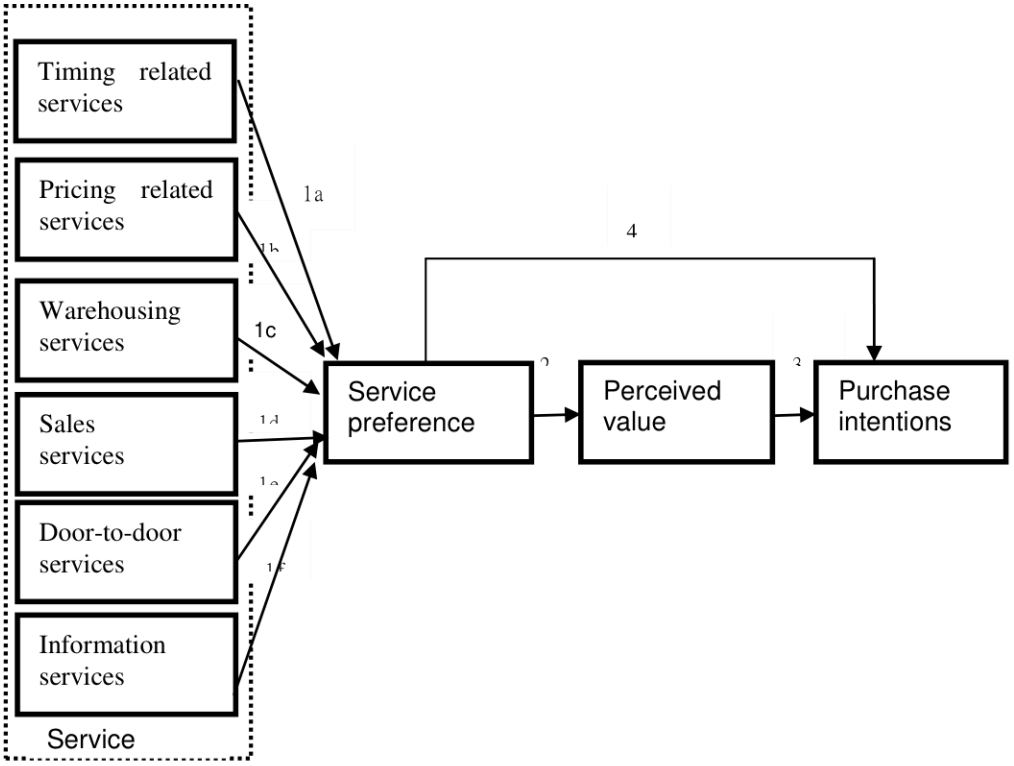

Figure 1. Research Model

Methodology

Questionnaire development and data collection
A questionnaire including 22 items was generated. All of the items were measured using 5-point Likert type scales with anchors ranging from strongly disagree (1) to strongly agree (5). For this study, all measurement items in the questionnaire were developed either by adapting measures that have been validated by other researchers or by converting the definitions of constructs into a questionnaire format. A pretest of the questionnaire was performed to ensure content validity and reliability within the target context. Five experts in the maritime area were invited to assess wording clarity, task relevance, and question item sequence adequacy. The comments collected from these experts lead to several minor modifications of the wording and the item sequence. Furthermore, a pilot study was conducted involving 30 individuals have working experience in firms of carrier or shipper. Comments and suggestions on the item content and structure of the instrument were solicited.

To investigate the research model, a survey technique was used to collect data. Candidate firms randomly were selected from a list of International Ocean Freight Forwards and Logistics Association in Taiwan. 200 firms were contacted by an introductory letter, and then a follow-up phone call

describing the goal of this study and eliciting the firm's support. All respondents were required to have knowledge of logistics and transportation. At the end of this screening process, 130 questionnaires were sent to those firms willing to help. In the e-mail welcoming and thanking them for doing the survey gave some statements ensuring the participants the privacy when filling up the questionnaire. From August to September 2011, we received 105 complete questionnaires; 86 usable data were used for analysis, yielding a response rate of 82 percent.

Table 1. Questionnaire items and factor loadings

Construct	Items	Measure	Factor Loadings
Timing related services (TS)	TS1	On-time pick-up	0.92
	TS2	Short transit time	0.95
	TS3	High frequency of sailing	0.89
Pricing related services (PS)	PS1	Freight rates	0.88
	PS2	Price and discount structure	0.90
	PS3	Willingness to negotiate	0.86
Warehousing services (WS)	E1	Customs clearance service	0.75
	E2	Storage service	0.92
	E3	Packaging/labeling service	0.82
Sales services (SS)	S1	Frequency of sales representatives calls to shippers	0.79
	S2	Knowledge ability of sales personnel	0.85
	S3	Ability of sales representatives to handle problems	0.83
Door-to-door services (DS)	DS1	Door-to-door service and good condition of containers	0.78
	DS2	Door-to-door service was the highest	0.80
Information services (IS)	IS1	Computer EDI interface	0.77
	IS2	Computer cargo tracing	0.91
Service Preference (SP)	SP 1	Transaction Cost Preference	0.94
	SP 2	Product Preference	0.88
	SP 3	Social Interaction Preference	0.79
Perceived value (PV)	PV1	The service would be economical	0.80
	PV2	The service is value for money compared with that of major competitors	0.88
	PV3	The choice of transacting with the firm is a right decision when price and other expenses are considered	0.82
Purchase intentions (PI)	PI1	I intend to transaction with the firm in the near future.	0.82
	PI2	I plan to purchase the service from the firm in the near future.	0.89
	PI3	I predict that I would consider purchasing service from the firm in the near future.	0.92

Data analysis procedure and methods

Three main statistical analyses were described as followed. (1) Descriptive Statistical Analysis: in order to summarize the characteristics of respondents and better understand each research variable, descriptive statistical analysis was used to illustrate the means, and standard deviations of each research variable.(2) Confirmatory Factor Analysis: CFA is used to test the reliability and validity. A reliability test for each construct was applied to assess the internal consistency from composite reliability. (3) Structural Equation Modeling: SEM is used to verify the goodness of fit of the research framework and to describe the relationships among the construct variables. In order to investigate the objectives of this study and test the hypotheses, PLS (partial least squares) was employed to help us analyze the collected data. The PLS software package is used to analyze the relationships in the entire research model to find out the relationships among variables in this model. PLS provides the analysis of both a measurement model and a structural model. PLS places minimal restrictions on measurement scales, sample size and residual distribution (Chin & Newsted, 1999).

Data Analysis and Results

Data analysis involves analyses of the measurement model and structural model. The adequacy of the measurement model was evaluated on the criteria of reliability, convergent validity and discriminant validity. Reliability was examined using the composite reliability (CR) values, which should be greater than the benchmark of 0.7 to be considered adequate (Fornell &Larcker, 1981). Additionally, the convergent validity of the scales was verified by using two criteria suggested by Fornell and Larcker (1981): (1) all indicator loadings should be significant and exceed 0.7 and (2)

average variance extracted (AVE) by each construct should exceed the variance due to measurement error for that construct (i.e., AVE should exceed 0.50). Most items exhibited loading higher than 0.7 on their respective construct, providing evidence of acceptable item convergence on the intended constructs.

Discriminant validity was assessed by examining the factor loadings to see if questions were loaded more highly on their intended constructs than on other constructs (Fornell & Larcker, 1981). Therefore, we conclude that the measure for each construct satisfies construct reliability and validity. In the examining of the impact of service attributes on customer preference, the empirical findings show that timing related services, pricing related services, warehousing services, sales services, door-to-door services, information services and advertising services have positively impact on customer preference. This study has found the door-to-door services and information services have the positive impact on customer preference, though the significance of these two services is weaker than the other attributes such as timing related services, pricing related services, warehousing services and sales services. Customer preference has a strong impact on perceived value (b=-0.53, p<0.001), validating H2. The higher the shipper's preference, the more likely the shipper will perceive more value from carrier's service. Customer preference also has a direct and significant impact on purchase intentions (b=-0.18, p<0.01), validating H4. In addition, perceived value has a strong impact on purchase intentions. This finding is consistent with previous research (Dodds et al., 1991; Cronin et al., 2000) indicating that customer perceived value has a significant influence on purchase intentions transactions.

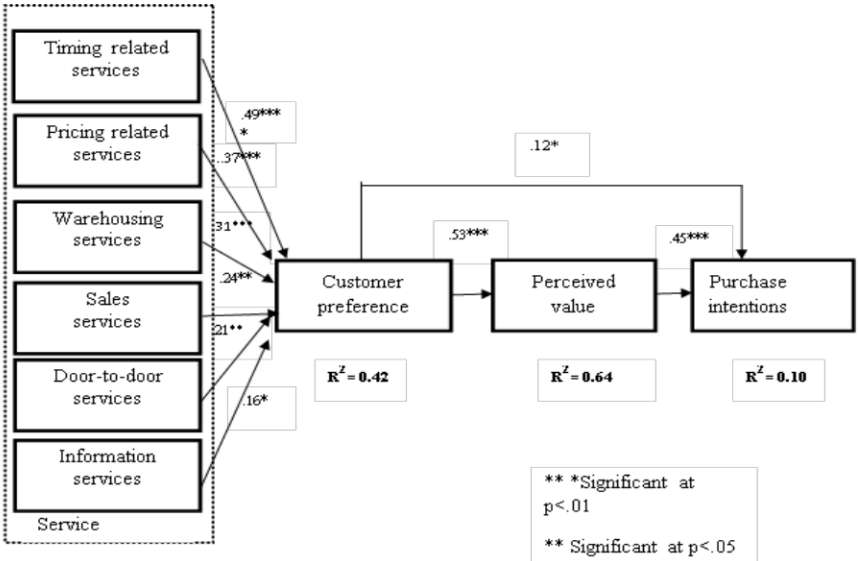

Figure 2. SEM analysis of research model

Conclusions

The development of SSS services offer a potential market (Paixão and Marlow, 2002) but researchers have paid little attention to this phenomenon in Taiwan. This study is to conduct an empirical examination of the effects of perceived value on purchase intentions within SSS context. It also contributes to identify the relationship between service attributes and customer's preference. The findings of this research should benefit both practitioners and academics by elaborating on our theoretical understanding of constructs in the model and their postulated relationship within SSS contexts in Taiwan. For practitioners, this work can significantly help managers of carrier to manage relationships with their shippers. Most of shippers focus on means of providing excellent service quality for customers. However, they may ignore the shipper's preferred services are related to customer's requirement. Thus, they should try to provide the proper services for customers. SSS service providers can use the results from the current research to identify the critical factors affecting the customers' purchase intentions and directions of improvement, and their action will increase the target customers' stickiness on them. The measuring and attaining of service useful since it is under control of SSS provider. The research also has great managerial implications as carrier' managers can use the developed questionnaire in order to assess the service preference, thus facilitating the

universal measurement based on the customer perceptions in the shipping industry. The findings of this study will contribute to the academic literature by providing clarity of consumer behavior framework in the context of SSS. The results will also be significant because they provide new information on a previously uninvestigated area – Taiwan. Therefore, the results of this research will help to begin the process of organizing a framework for understanding the link between service preference, perceived value, and important attributes of service preference within SSS contexts. In particular, the findings with respect to multi-attributes of service preference and perceived value should lead to an understanding of the broader issue of the mechanisms whereby users are attracted to purchase.

In conclusion, these findings lead carriers to understand the relationship among service attributes, perceived value and purchase intentions from shipper's perspective. Therefore, our research offers managerial and academic implications for SSS marketing. The implications of the findings may guide carrier's managers in providing the appropriate services and adopting right marketing strategy to the shippers in the future.

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