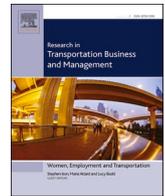


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## Selecting the right partners to maximize value for shipping companies: An exploratory study

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### ABSTRACT

As the human presence and more specifically the seafarers or the crew has been long ago recognized in the shipping (or maritime) industry as critical for company' success, little -if not at all- effort has been attributed to how to opt for the optimum partners (manning agencies) or employees (seafarers) to achieve or co-create efficiently the best value for them.

This study's objective is to bridge the gap in the relevant maritime or transport literature by aiming at i) exploring the criteria that shipping companies use to select manning agencies or agencies that provide crew for their ships as business partners and ii) examining the influence that selection criteria have on value creation for shipping companies.

Evidence has been drawn and data were collected through a survey conducted in 246 Greek shipping companies which own or manage vessels and are based in Greece. The results both endorse the positive role of a "good" selection to value co-creation and further identify that creation of value can be attributed to certain criteria such as quality, recommendation and crew management and recruitment.

### 1. Introduction

The shipping industry operates in a complex, perpetually shifting and demanding environment and is characterized by multiple forms of interaction including- but not limited to -alliances formation, joint ventures and relationship formation among all those actors involved in the transportation process, such as suppliers, flag registries, manning agencies, classification societies and many other. However, from all possible actors involved in this process, the most crucial one (IMO, 2003) is the human factor (ashore but most importantly onboard) and its management as it is in the heart of any shipping operation. Thus, the crew selection either individually selected or outsourced through the major "manning agencies"<sup>1</sup> is considered a "strategic process" and a critical activity of shipping enterprises (Franceschini, Galetto, Pignatelli, & Varetto, 2003). As such it requires a continuous process of interaction and integration (Kaipia & Turkulainen, 2017) between the shipping company and the manning agency in order to recruit the most skilled and suitable crew for their vessels, which are important features for value creation. Nevertheless, what remains unexplored is how and under

what criteria a shipping company may best select a manning agency to become its "valued" business partner as well as the influence this decision has on the company's value creation (Bloor & Sampson, 2009). Apart from that, manning agencies' cornerstone role also lies in finding, managing, training, placing and providing support to seafarers (crew) originating from different nationalities, cultures, religions and backgrounds (Theotokas & Progoulaki, 2007).

As it can be deducted, the way shipping (or maritime) companies select and retain manning agencies as their business partners is key to efficient shipping operations. It can by itself enhance the competitiveness of shipping companies (Choy, Lee, & Lo, 2004) and develop valuable business relationships (Roseira & Brito, 2014). Those relationships are formed between two committed parties that create interdependence and through trust, commitment and collaboration (Jarratt & O'Neill, 2002) develop an essential mechanism for organizations' development (Håkansson & Snehota, 1995) and value creation for all parties involved (Ryssel, Ritter, & Gemünden, 2004).

Business partners – in this context manning agencies- can be considered an important element of shipping companies' resources

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<sup>1</sup> According to the [Maritime Labor Convention \(2006, p. 3\)](#) manning agencies can be defined as "any person, company, institution, agency or other organizations in the public or the private sector which is engaged in recruiting seafarers on behalf of shipowner or placing seafarers with the shipowner".

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(Araujo, Gadde, & Dubois, 2016) and consequently, for value creation (Emden, Calantone, & Droge, 2006; Diestre & Rajagopalan, 2012; Díaz-Méndez and Saren, 2019). However, there are limited studies examining the way that shipping companies choose external partners (Seo, Ha, Yang, & Bhattacharya, 2018; Hsu, Lu, Chu, 2016; Hsu, Kannan, Tan, & Leong, 2008), and none -to the best of authors' knowledge- on the selection criteria of manning agencies.

In accordance with the Resource Based View (RBV) of the firm promoting the importance of resources as a competitive advantage of companies and in line with Vargo and Lusch (2008) work, which argues in benefit of the exchange and integration of supplier- customer resources (here manning agencies and shipping companies) for value co-creation, this research attempts to answer the following questions: What are the criteria that shipping companies use to select manning agencies, what is criteria's importance, and how this selection process drives to value creation?

This paper is divided into six sections. Section 2 gives a brief overview of the literature review and hypothesis formation of the constructs of value creation, selection criteria. Section 3 scrutinizes the research methodology, design, measurement instruments, and data analysis. Results of the study are presented in Section 4. In Section 5, the results of the study are discussed. Finally, Section 6 provides overall conclusions, practical implications, and avenues for future research.

## 2. Theoretical background and hypotheses formation

### 2.1. Selection criteria of business partners in shipping industry

The way business partners are selected is vital for firms' success, achievement of organizational results and creation of competitive advantage (Roy et al., 2020) and it is advocated that it is influenced by both companies' needs and requirements and by factors associated with the external environment the companies are operating in (Zimmer, Fröhling, & Schultmann, 2016). For example, Geringer (1991) introduced a rather common typology (followed by many i.e., Solesvik & Westhead, 2010; Islam, Ali, & Sandhu, 2011) including two groups of criteria when selecting business partners; i) task related criteria, which can encompass tangibles or intangible variables such as technical knowhow, financial resources, experienced personnel and ii) partner related criteria such as partners corporate or national culture, trust, organizational structure, partners compatibility. As the issue remains a priority both for academia and practice, other scholars have introduced several mechanisms for partner's selection including Liou's approach (2012) of organization-, strategy-, finance- and service- related criteria or Abidi, Dullaert, De Leeuw, Lysko, and Klumpp (2019) study on financial, organizational, operational performance and strategic criteria for strategic partners of logistic network providers.

In the shipping (or maritime) industry the way shipping companies select business partners from a multi-national environment tends to be a rather prevailing practice and has attracted the interest of many scholars. Borch and Solesvik (2016), for example, supported that shipping companies wishing to form alliances for R&D projects choose partners emphasizing on trust, expertise, competence, experience and financial profitability criteria, whereas Mitroussi (2004) argues that to select employment of third-party managers (e.g. manning agencies) shipping companies consider organizational characteristics (e.g. size, age), flexibility, reputation, information technology, crew availability and desirability. Others support that for selecting partners the shipping companies focus on quality, relationships, costs and services (Aguetzoul, 2014), technical competence and experience, delivery date, on-time delivery, number of similar ships built, quality control policy and use of protective equipment (Kafali & Özkök, 2015). Asuquo, Coward, and Yang (2014), using a case study of a shipping company that wanted to select third-party ship management, found that the most vital criteria were reputation and experience, while the least significant were cost and location. Finally, Silva and Oliveira (2017) argue in benefit of the

importance of specific company's characteristics as these -characteristics- shape their evaluation perceptions when selecting their potential partners.

As the human element is not only a competitive factor but also a crucial one in maritime industry, and the composition of a crew consists of individuals of different cultures, religions and backgrounds, most companies are reluctant or unable to undertake the role of selecting individual seafarers and usually outsource this selection to manning agencies (McVeigh & MacLachlan, 2019) providing them however with the principles of each one's manning strategies; some choose to have only nationals, others foreigners, and others a combination of the two. A study conducted for a Turkish shipping company concluded that the criteria to select a manning strategy are language, salary, overtime working, service quality, conflict resolution, and crew insurance (Bulut, Duru, & Yoshida, 2010). The nationality and training of crew (Progou-laki & Roe, 2011) or its characteristics (Fan, Fei, Schriever, & Fan, 2017) are among the factors that influence the selection of external partners (such as manning agencies) for shipping companies.

Although work is evident on how to select individual seafarers or other partners, the criteria of how to select employment (or manning) agencies in shipping remains still a rather unexplored area leaving space to positioning our paper.

Based on the literature previously presented we may support that shipping companies choose their business employment partner (manning agency) using criteria such as:

- the suppliers' quality as perceived by them (Vijayakumar, Rahim, Ahmi, & Rahman, 2019; Wong, Tjosvold, & Zhang, 2005),
- the reputation/ brand name that the potential partner enjoys in the market (Chen & Lin, 2009),
- the company and crew characteristics (Panayides & Cullinane, 2002) and
- other cost elements (Aguetzoul, 2014)

Based on the above we form our first Hypothesis as:

**H1.** The criteria used by shipping companies in order to choose a "manning agency" as external partner is a multi-dimensional construct including cost, quality, brand name/reputation, crew characteristics, and company characteristics.

### 2.2. Value co-creation

Companies select partners and form business relationships in order not only to gain competitive advantage, but also to operate efficiently by exploiting and benefiting from exchanging of each other's resources. In other words, organizations aim to co-create value and the meaning of "value co-creation" has recently gained keen interest in the relevant literature, which has been expressed by McColl-Kennedy, Vargo, Dagger, Sweeney, and Kasteren (2012) as "...benefits realized from integration of resources through activities and interactions with collaborators in the customer network..." (p. 375) and is based on mutual exchange and a combination of resources, which depend on the actors' behaviors toward the common process to co-create value (Vargo & Lusch, 2008). As such, it cannot follow rules but it actually refers to the exchange of experiences rather than simple resources (Grönroos & Voima, 2013) and the common utilization of products and services (Gong, Choi, & Murdy, 2016; Laud & Karpen, 2017). It is further supported that value co-creation leads to satisfaction (Navarro, Linares, & Garzon, 2016), generates loyalty (Kasnakoglu, 2016) and develops organizational capabilities (Martelo-Landroguez & Martin-Ruiz, 2016).

This process of co-creation can be achieved through two types of behavior: participation behavior and citizenship behavior (Yi & Gong, 2013). Participation behavior refers to a necessary requirement to achieve value creation, described as in-role behavior. Citizenship behavior refers to a voluntary behavior, described as an extra-role

behavior involving sacrifices from customers, which may have an impact on a firm's performance (Fowler, 2013; Yi & Gong, 2013). Customer participation behavior consists of information seeking, information sharing, responsible behavior, and personal interaction dimensions. Customer citizenship behavior contains feedback, advocacy, helping, and tolerance dimensions (Yi & Gong, 2013).

Notwithstanding, partner compatibility and complementarity constitute essential factors for the value co-creation process and, consequently, the occurrence of value co-creation behavior. Characteristics, such as abilities, resources, and skills, can be used by the actors involved to cover or strengthen their weaknesses and can describe partner complementarity. The similarity of the company's structure, culture, and policy characterize partner compatibility, which promotes understanding, communication, exchange of knowledge, and thus, culminates in the optimal performance of involved actors (Chang, Wang, & Bai, 2020; Gummesson & Mele, 2010; Lew, Kim, & Khan, 2019; Mitsuhashi & Greve, 2009; Tsou, Cheng, & Hsu, 2015).

The concept of value co-creation in the shipping sector is still at its infant stage, but research interest is growing. It was first introduced by Forsström (2005) who through an in-depth interview studied the relationship between buyer-seller in the shipping industry and argued that co-creation of value can take place if there is interdependence between the parties involved.

Some ten years later Hammervoll, Halse, and Engelseth (2014) conducted a research examining the role of maritime clusters in the relationship between service exchange (through the forms of strategic knowledge sharing and information exchange) and two types of value co-creation, reciprocal and sequential, considering also the factor of geographical proximity and they concluded that companies adapt to their partner's conditions and create value through the promotion of mutual knowledge. They supported that exchange of knowledge builds strong relationships among partners, which is reinforced by the fact that geographical proximity enhance trust between partners, thus leading to co-creation of value. Recently Garcia, Wigger, and Hermann (2019) concluded that shipping companies are more reluctant to co-create value through resource and knowledge partnerships and this has a negative impact on the whole network of actors.

Finally, the majority of existing studies are focusing on the importance of customer value co-creation behavior mostly from the individual's view (Chen, Yang, & Leo, 2017; Delpechitre, Beeler-Connelly, & Chaker, 2018), whereas studies at an organization level -as this one are limited (Jouny-Rivier, Reynoso, & Edvardsson, 2017) despite calls for further examination of the concrete role of business customers on value co-creation (Mustak, Jaakkola, & Halinen, 2013) especially in services sector (i.e. shipping) (Hansen, 2019).

### 2.3. The link between selection criteria and value co-creation in the shipping industry

Studies examining the relationship between selection criteria and value co-creation are very scarce in general and not at all evident in the shipping sector in particular. Simpson, Sigauw, and Baker (2001) conducted a study on supplier value creation for resellers, and they suggest that, among others, market orientation and the right product configuration can lead to the creation of value in the relationship of the reseller-supplier. Using case studies, Emden et al. (2006) point that technological, strategic, and relational alignment are the criteria that firms should seek in co-development alliances, which will potentially generate synergistic value. Diestre and Rajagopalan (2012) conducted a study in the pharmaceutical sector, suggesting that the criteria used by new biotechnology companies for choosing an alliance partner (i.e., pharmaceutical company) - as long as the alliance partner uses these skills for value creation- are the technologically relentless and the developmental experience. Using multiple case studies from advertising agencies, Díaz-Méndez and Saren (2019) examined the role and characteristics of customers in the process of value co-creation from the supplier

perspective and their research indicates that high and low novice customers and control-concerned ones harm value co-creation, which results in value destruction.

An early study of Katsikeas and Leonidou (1996) examined the role of supplier selection criteria on companies' behavior. They found that supplier characteristics of assurance and reliability are determining factors for a lasting collaborative partnership, recognizing that the success of a partnership requires the participation of all actors involved.

Capabilities, evaluation, and selection criteria of business partners play an important role in the perception of customers for their suppliers and the development of a business relationship that leads to value co-creation (Roseira & Brito, 2014). The motivation for actors to be involved and engaged, thus achieving a co-creation behavior, depends on the perception that buyers and suppliers have on the benefits that everyone can offer and receive. For example, Mulyana, Rudiana, and Taufiq (2019) support that value co-creation influence customers perceived quality which in turns influence brand advantage. They further suggest that in order for customers to develop a positive perceived quality, it is essential that the quality and value of the products and services they receive are in line with their expectations. Huang and Lin (2020) and Xu, Liu, and Lyu (2018) argued that if the products or services offered to customers meet their expectations in terms of quality then their positive emotions and well-being are enhanced and consequently their participatory behavior in the value creation process.

This process creates a strategic advantage for all parties involved, but it depends on the choice of the participating parties (Bettencourt, Lusch, & Vargo, 2014). Characteristics such as attitudes, behaviors, and knowledge of customers tend to facilitate business relationship formation and provide mutual benefits for the involved parties (Díaz-Méndez and Saren, 2019). Studies have shown that a shortage of these features is an indication of lack of partner compatibility, which can have negative results (Moeller, 2010; Zhu et al., 2017). Partner compatibility and complementarity are of paramount importance for the partner selection process and consequently, to business partnerships (Al-Khalifa & Peterson, 1999; Cummings & Holmberg, 2012; Leischnig, Geigenmüller, & Lohmann, 2014). Within their study of open innovation, Mantungvorapun and Gerd Sri (2016) supported the idea that during the partner selection process, partner compatibility and complementarity can enhance business partnership and are based on companies' strategic goals.

Thus, it seems evident from the above that for successful cooperation between companies, corporate characteristics expressed as the ability to communicate, create friendly relationships, skills, resources and consistency among companies in terms of management and organization, are motivational factors in the process of co-creation of value (Bonamigo, Dettmann, Frech, & Werner, 2020) are needed. Moreover, reputation of business partners has been identified as of importance for companies to co-create value and -companies- seek to collaborate with reputable firms to enhance, inter alia, their own reputation (Pera, Occhiocupo, & Clarke, 2016) and to co-create value (Chih et al., 2019).

In line with suggestions from Díaz-Méndez and Saren (2019) this paper examines the perspective of customers in the process of value co-creation and their behavior toward it. In other words, this study investigates companies' perceptions of the characteristics that their partners must have for the emergence of value co-creation and proposes that the choice of the best business partner (i.e., manning agencies) is a driving factor for the creation of value for the shipping companies. Based on the above, it is important to consider to what extent partner selection criteria affect the behaviors developed through active customer participation during the process of value co-creation.

**H2.** The criteria shipping companies use to select manning agencies influence the creation of value.

3. Research methodology

3.1. Research design

This research was conducted in the Greek shipping which is considered to be the biggest in the world with 4936 vessels of 389.69 million deadweight tones and represents 21% of the global tonnage (UGS, 2019) or 53% of the EU tonnage. It is considered as typical to the whole industry and one may -reasonably- assume that its behavior may be reflecting the behavior of the whole industry as shipping companies are regulated by common characteristics such as the legal framework in which they operate, the use of multicultural crews, cooperation with suppliers and customers from around the world, the operating practices they follow, and the object of their activity, i.e. the management of ships for production of maritime transport services.

A self-administered questionnaire was used to collect data for the constructs of value co-creation and selection criteria. The initial convenience sample consisted of 444 Greek shipping companies out of a population of 700 that were contacted via e-mail and phone. Since the focus of the analysis is at an organizational level, only crew managers from each company has been addressed, while in case of their inability with other senior executives aware of crew management processes, as they are considered representatives of their organizations (Yamak, Nielsen, & Escribá-Esteve, 2014). Our final sample consists of 246 usable questionnaires, resulting in a satisfactory participation rate of 55.18%. Given the potentially sensitive nature of the questions, confidentiality and anonymity were assured.

The respondents consisted of crew managers (58.13%), operations managers (13.01%), DPA (6.10%), general managers (4.88%), and executives in “other” positions (17.89%). Of all companies participated in the study 50% of the companies operate in the dry bulk sector, 13.01% in liquid bulk, 3.66% in the containership industry, and 33.33% in a combination of sectors.

To check for the coherence, vagueness, and integrity (Pagell & Krause, 2004), the instrument was pre-tested by asking executives from 10 Greek shipping companies, randomly selected, to review it. Considering the nature of the constructs to be clear and understandable to the respondents, the original English questionnaire was translated into Greek. After taking suggestions of the executives in the pilot data collection, the final items of the questionnaire were refined, and it was then retranslated back into English.

3.2. Measurement instruments

The shipping industry is the focal point of this study, thus the measurement instruments selected are suitable to examine the study’s hypotheses since they have been used to the service sector (Table 1). Fig. 1 depicts the schematic representation of the research model. Respondents were asked to evaluate from “not at all” to “absolutely” (7-point Likert type scale), how much various factors affect their company’s choice to

Table 1  
Summary of the constructs under examination and hypotheses formation.

Summary of the constructs under examination and hypotheses formation		
Construct/ Hypothesis	Defined/suggested by	Measurement instruments/ suggestions
Selection criteria	Solesvik & Westhead, 2010; Wetzstein, Feisel, Hartmann, & Benton Jr, 2019	Adaptation from Solesvik & Westhead, 2010; Aguezzoul, 2014; Panayides & Cullinane, 2002; Mitroussi, 2004
Value co creation behavior	Rivier et al.,2017; Mustak et al., 2013; Hansen, 2019	Yi & Gong, 2013
Selection criteria -> Value co creation behavior	Katsikeas & Leonidou, 1996; Díaz-Méndez & Saren, 2019	Further research from the customer perspective is required

collaborate (or if needed to cooperate) with an external partner (e.g a manning agency). (see Appendix).

This paper referred to the general literature on partner selection and used criteria that covered a wide range of categories, i.e. cost, reputation and quality. Specifically, it is assumed that selection criteria are a multifaceted construct which includes quality, crew characteristics, company characteristics, reputation and cost, based on the literature on selection criteria in the shipping industry (Aguezzoul, 2014; Asuquo et al., 2014; Panayides & Cullinane, 2002).

For value co-creation, the instrument of the customer value co-creation behavior scale- adapted from Yi and Gong (2013)- was chosen. It consists of two main factors: customer participation behavior with information seeking, information sharing, responsible behavior, and personal interaction dimensions; and customer citizenship behavior with feedback, advocacy, helping, and tolerance dimensions. Additional refinement of scale items was necessary, considering that this construct is new to the context of shipping.

3.3. Data analysis

The statistical packages of SPSS 25 and AMOS were utilized to analyze the data. Exploratory factor analysis (EFA) was first conducted to explore the factors that best represent the structure of the variable of the selection criteria. Items with factor loadings of 0.50 were included. To further validate the structure of the construct, we ran the confirmatory factor analysis (CFA).

To test our theory-based construct of value co-creation, CFA was utilized, using the maximum likelihood estimation. The structure of value co-creation construct was derived from the existing literature and theory; therefore, CFA was considered an appropriate method to examine their nature (Jackson, Gillaspay Jr., & Purc-Stephenson, 2009).

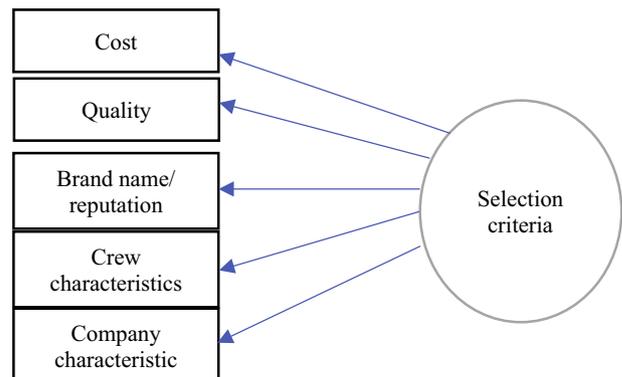
Construct reliabilities are at a satisfactory level since Cronbach’s alpha for selection criteria was 0.906 and VCB equals 0.809. To confirm the convergent validity of the measurement model, the standardized regression weights of the measurement items of the construct are greater than 0.05. Tolerance and variance inflation factor (VIF) indices provided us with information for multicollinearity (Midi, Sarkar, & Rana, 2010) affirming that no evidence of multicollinearity since VIF indices are below the value of 10.

In order to examine the strength of the impact and the significant relationship between the dependent and independent variables, regression analysis was employed.

4. Results

4.1. Test of hypothesis 1

The first hypothesis aims to investigate the criteria that companies consider when selecting business partners. For this study we use the shipping industry as an example and in particular the selection of manning agencies as business partners by shipping companies.



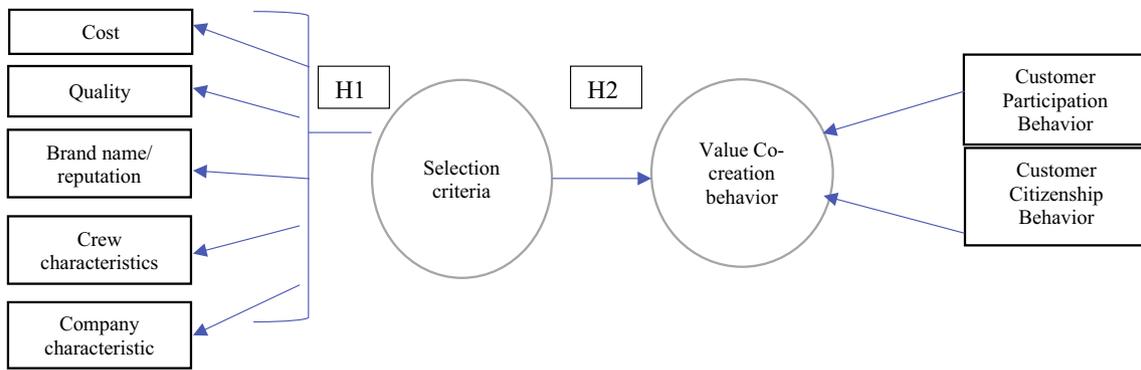


Fig. 1. Schematic representation of the research model.

Manning agencies provide crew services and charging fees that are made on a per-capita per rank basis. Hence, knowing that the fees do not vary significantly, it is assumed that cost would not be an important factor in the selection process. This is in line with previous studies showing a shift in the decision criteria), suggesting that the criterion of cost is considered the least important when selecting business partners, such as suppliers (Asuquo et al., 2014; Luthra, Govindan, Kannan, Mangla, & Garg, 2017; Taherdoost & Brard, 2019).

To test this assumption, correlation analysis was used to investigate the strength of the relationship between the variables. To do so, summated scales of all items were used and correlation analysis between each criterion and each dimension of VCC was conducted. The results support the assumption since it was found there was no strong effect on our variables; therefore, it is excluded from the statistical analysis.

To test the first hypothesis, an EFA with varimax rotation was conducted to test the factorial structures of the construct selection criteria. Results of the EFA provided seven factors, namely quality consisting of seven items, reputation with four items, recommendation with two items, recruitment with two items, crew characteristics and crew management with three items each, and personal relationships with two items. All factors have been renamed according to the loadings of the items to be easily understood.

To further validate the structure as resulted from EFA, CFA was implemented. The results confirm the structure for selection criteria providing us with six selection criteria that companies use when selecting a business partner, namely quality, reputation, recruitment, recommendation, crew characteristics, and crew management (Table 2). The factor of personal relationships was eliminated from further analysis due to insignificant loadings. The model indicates a good fit (Chi-square 315.166, p.000, chi-square/df 2.033, GFI 0.889, AGFI 0.849, NFI 0.870, CFI 0.928, RMSEA 0.065). Based on the above, Hypothesis 1 is partially supported.

4.2. Test of hypothesis 2

To evaluate the construct of value co-creation, a CFA was applied. Results revealed two dimensions of VCB: customer participation behavior consisting of the dimensions of information seeking with five items, information sharing with four items, and responsible behavior with three items; and customer citizenship behavior consisting of the dimensions of feedback and advocacy with three items, respectively. Goodness-of-fit indices indicate a good fit (Chi-square 279.783, p.000, df 129, GFI 0.889, AGFI 0.853, CFI 0.882, RMSEA 0.069). Hair et al. (2010) suggest avoiding problems with the measurement model. All standardized residual covariances are below the limit of 2.5.

To test the second hypothesis, regression analysis was employed to investigate the relationship between the examined constructs, selection criteria, and VCB. For regression analysis, the summated scales of the constructs were used (Fig. 2). Selection criteria were used as the

Table 2  
CFA standardized estimates.

CFA standardized estimates for selection criteria	
Selection criteria	
Quality	
The quality and the characteristics of the recommended crew	0,545
The MA's overall performance according to our company's expectations	0,643
The time required from the MA to respond to our requests	0,751
The capability of the MA to understand and correctly respond to our company's needs	0,772
The reliability of the services provided	0,784
The accuracy in type of response	0,818
The trust that the MA will deliver as promised	0,793
Reputation	
The way the manning agency presents its services (preselection/recruitment processes prior the selection of the manning agency)	0,570
The reputation the manning agency has on the market	0,689
The reputation and characteristics of Directors and operators of the manning agency	0,890
The reputation and characteristics of the Director/ Owner of the manning agency	0,862
Recruitment	
The capability of MA to suggest to us recruitment of totally new crew nationalities for: B. Officers	0,861
The capability of MA to suggest to us recruitment of totally new crew nationalities for: A. Ratings	0,965
Recommendations	
The recommendations we get for the manning agency from other market professionals	0,749
The recommendations we get for the manning agency from friends/acquaintances	0,966
Crew characteristics	
The Crew evaluation after disembarkation	0,531
The time (years) the crew works for reliable companies	0,744
The offered crew' experience on a specific type of vessel	0,571
Crew management	
The quality certificates of the manning agency (MA)	0,605
The web monitoring capability of crew data amendments	0,476

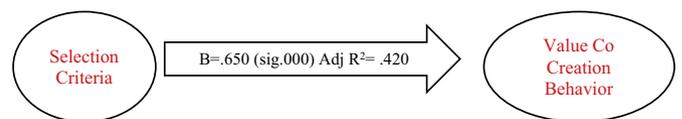


Fig. 2. Regression analysis results of selection criteria and value co-creation behavior (Hypothesis 2).

independent variable while the two dimensions of value co-creation as a dependent (Fig. 3).

According to the above results, selection criteria have a positive and significant impact on value co-creation behavior. The results are supported by a previous study showing that partner selection has an impact on partners' behavior (Moeller, 2010).

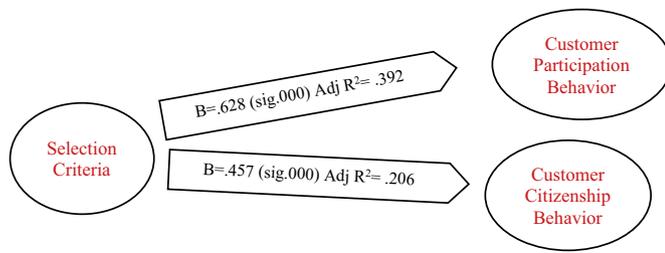


Fig. 3. Regression analysis results of selection criteria on value co-creation behavior dimensions.

Running multiple regression analysis between the already- specified selection criteria and value co-creation behavior, one can notice that value co-creation behavior is attributed to certain factors such as quality, recommendation, and crew management. The results are presented below in Table 3. The factors enhancing the co-creation of value between the shipping companies and manning agencies as their business partners are the way that manning agencies manage services, suggestions that shipping companies get for manning agencies, and the quality of services that manning agencies provide.

According to the above results, selection criteria have a positive and significant impact on value co-creation behavior. Quality ( $b = 0.265$ ), Recommendation ( $b = 0.238$ ), Crew management ( $b = 0.238$ ) and Recruitment ( $b = 0.105$ ) selection criteria have a significant impact on value co-creation behavior. On the other hand, the criteria of reputation, and crew characteristics show no statistically significance. Following the above, Hypothesis 2 is supported.

5. Conclusion

The way partners are selected, and alliances or collaborations are formed is supported that create value through complementarities of resources and capabilities of the partner firms and sometimes evolve as an important means to achieve sustainable competitive advantage. While this argument is well supported in several contexts in both services and manufacturing industry (Guertler & Lindemann, 2016), their association with the theory of value co-creation can offer remarkable conclusions (Tsou et al., 2015). Moreover, what remains unexplored is how and under what criteria a shipping company may best select its partners -in this case manning agencies - to become its “valued” business partner as well as the influence this decision has on the company’s value creation (Bloor & Sampson, 2009).

To address these issues, in accordance with the Resource Based View (RBV) of the firm that promotes the importance of resources as a competitive advantage of companies and in line with Vargo and Lusch (2008) work, which argues in benefit of the exchange and integration of supplier- customer resources for value co-creation, this study answers the following three research questions: i) What are the criteria that shipping companies use to select manning agencies, ii) what is criteria’s

influence in value co-creation, and iii) how this selection process drives to value creation. Evidence is drawn from a sample of Greek shipping enterprises that is considered typical of the way most shipping companies globally operate and the relationship examined is this of selecting manning (employment) agencies to provide crew (seafarers or employers) for their ships.

We contribute to the literature in three ways. First, we develop and confirm a framework that shipping companies consider when selecting business partners taking a market perspective that incorporates key features -as subjectively are perceived by shipping companies. Those features are the “quality of the partner”, the “recruitment” process followed by the partner, “recommendations” received from the industry and finally the way the partner manages its crew (“crew management”) the “reputation” of the name of the partner, and the corresponding “characteristics” of the crew.

Second, we introduce the concept of value co-creation behavior (VCCB) for the first time -at least empirically- in the shipping industry and we have examined its structure. Results reveal two first order dimensions of VCCB: i) customer participation behavior (CPB) describing the process of information exchange between partners either in the form of information seeking, or information sharing, and responsible behavior and ii) customer citizenship behavior (CCB) consisting of the dimensions of feedback and advocacy. We have further examined and confirmed -in line to a previous study of Moeller (2010)- that the way shipping companies select partners explains and has a positive and significant impact on value co-creation behavior (VCB) in total and separately to both its dimensions (CPB) and (CCB).

Finally, we quest for the influence that the selection process followed, and the relevant six selection criteria previously identified and applied by a company has on Value Co-Creation Behavior (VCCB) within the context of shipping industry.

This study shows that that value co-creation behavior (VCCB) is attributed mainly if solely to certain selection factors such as “quality”, “recommendation”, and “crew management” that reflect a firm’s selection management capability and choice. Thus, determinants of partners’ selection and creation of value are interdependent. In addition, the findings reveal that certain selection criteria -such as cost or partners’ reputation or the special characteristics of the crew- are not important or significant predictors of co-creation of value (VCCB) in the shipping context. This may be attributed to the global nature in shipping operations and the “strict” regulatory framework that does not allow major differentiations at salaries and wages of the seafarers and greatly restricts the pricing policies of the manning agencies. Moreover, crew qualifications, either for ratings or for officers are clearly described and mandatory by law, constituting thus another area of non- competition among partners.

Concluding this study is the first or among the very few in the transport sector to provide insights into the relationships between antecedents and consequences of partners’ selection and thus contributes to a deeper understanding of the value co-creation process that occur during this relationship.

5.1. Managerial implications

A critical question facing managers who seek to benefit from their business partners and create value or competitive advantage is “whom and how to select” partners. Typically, each company should seek a partner whose attributes reinforce their own.

This paper examines what are the criteria to be used and how every criterion influences the results or the value obtained especially in the way shipping companies select manning (employment) agencies. The most interesting result of this study is that cost (or price offered for services by a manning agency) is not at all significant for creating value for any business relationship. Since the value created is mostly quality driven, attributes such as the “quality” of the manning agency as well as the “recommendations” received by colleagues or the industry and the

Table 3  
Regression Analysis Results of components of Selection Criteria on Value co-creation behavior.

Independent variables	Dependent variable: VCCB
Selection criteria	Sig. 000 Adj R2 = 0.477 F = 34.028 DF (6239)
	Standardized beta
Quality	0.265 (sig.000)
Reputation	0.070 (ns.248)
Recruitment	0.105 (sig.038)
Recommendation	0.238 (sig.000)
Crew characteristics	0.111 (ns.052)
Crew management	0.238 (sig.000)

way the manning agency qualifies and manages the crew “crew management” are far more influential in forming long lasting and of value relationships.

Managers thus, should seek and provide information about both potential partners (crew companies) and services they want to receive either through word of mouth, recommendations or the use and development of online platforms or social media. Moreover, as the human factor is widely recognized in the sector for the quality and efficiency of operations the quality of the services -and corresponding crew- of the partner agency has not only been highlighted by many practitioners and academics but the need of an interactive, reliable and participatory role of the selection process is evident.

Overall, managers need to understand the market-wide competition and invest in the “right” mixture of quality -rather than economic- attributes when selecting partners in shipping for value creation and profits to be achieved.

### 5.2. Limitations and suggestions for future research

Nevertheless, it is suggested that future studies on the current topic need to be performed. First, this study is conducted in the shipping

industry in Greece, which although typical may need further validation to other national contexts and thus future research in this field is considered of essence. Second, the relationship of selection criteria and value co-creation is examined from the scope of shipping companies toward manning agencies. Future studies may investigate the relationship focusing on other corporate actors, i.e., flag registries, P&I clubs, and classification societies in their relationship to shipping companies and their value co-creation process.

### Author statement

As I cannot find anywhere in your site the content of the required statement for the revised submission, I assume that I have to declare -on behalf of both authors- that the submitted manuscript contains only our work and that any work of others has been legally and ethically cited. Moreover, no funding has been received from any source.

### Declaration of Competing Interest

None.

## Appendix A

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Selection criteria
Costs/budget
The overall cost of service provided (commissions, crew costs etc)
The commission charged from the manning agency
The total (absolute) cost of employed seafarers
The relative cost of the service provided in relation to competition
Brand name/reputation of manning agency
The reputation the manning agency has on the market
The reputation and characteristics of the Director/ Owner of the manning agency
The reputation and characteristics of Directors and operators of the manning agency
The way the manning agency presents its services (preselection/recruitment processes prior the selection of the manning agency)
The recommendations we get for the manning agency from friends/ acquaintances
The recommendations we get for the manning agency from other market professionals
The list of shipping companies that cooperate with the manning agency
Personal relationship with the owner of the manning agency
Crew
Crew availability from MA in order to meet our company’s usual needs
Crew availability from MA in order to meet our company’s needs in unusual or extreme cases
The quality and the characteristics of the recommended crew
The quality of the training of the recommended crew
The offered crew’ experience on a specific type of vessel
The time (years) the crew works for reliable companies
The Religion of the recommended crew
The capability of the MA to control the behavior of the crew, especially in case something goes wrong
The common knowledge/ notion on the way the recommended crew is believed to behave (e.g. drinking, shouting)
The skills of the offered crew to handle difficult or extraordinary situations
The Crew evaluation after disembarkation
Company (characteristics)
The size of the manning agency
The crew is managed directly from countries of origin (e.g. Philippines)
The quality certificates of the manning agency (MA)
The number and types of nationalities of the seafarers provided by the manning agency (MA) (Filipinos, Ukrainian, Vietnamese)
The management and the organization of the MA
The specific knowledge from MA of the local markets when recruiting crew
The skills of the crew operators
The way the MA respond to possible problems should they appear
The training centers provided/ owned by the manning agency
The web monitoring capability of crew data amendments
The communication style’ compatibility between the manning agency (MA) and our company
The forming of personal relationships between the manning agency (MA) and our company
Quality
The courtesy of the personnel of the MA
The capability of the MA to understand and correctly respond to our company’s needs
The time required from the MA to respond to our requests
The accuracy in type of response

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The trust that the MA will deliver as promised  
 The reliability of the services provided  
 The capability of the MA to handle our company's even unusual or extraordinary needs  
 The MA's overall Performance according to our company's expectations

## Value co-creation behavior

## Information seeking

We collect information from many sources regarding overall quality of services, before we choose a manning agency  
 We search for information regarding the manning agency from: the internet  
 We search for information regarding the manning agency from: Friends and colleagues  
 We search for information regarding the manning agency from: Other (shipping) companies  
 We search for information regarding the manning agency from: The market  
 We often seek and appraise manning agency's (MA) performance and way of cooperation with other shipping companies (other than us)

## Information sharing

We clearly explain to the manning agency (MA) about the services we want  
 We provide the manning agency with all the necessary information in order to provide us with the best possible offer/ solution  
 We regularly inform the manning agency (MA) about the existing working conditions on board

## Responsible behavior

We timely respond to all MA's queries regarding service related questions  
 We honour all our commitments/promises to the manning agency (MA) as agreed (time, cost)  
 We treat the manning agency in a proper and polite way in recognition of its role as our collaborator/ close partner

## Personal interaction

We follow the manning agency's recommendations on issues related to the service provided  
 Friendly relationships are created between our crew department members and the manning agency (MA)  
 We rarely misbehave in our relationship with the manning agency

## Feedback

If the manning agency has a suggestion to improve the service, we always pay great attention to it  
 When we receive good services from the manning agency we appreciate and comment on it  
 When we experience a problem with the crew, we inform the MA and ask for their help to solve the problem

## Advocacy

We say positive things about the MA to others  
 We recommend the MA to other shipping companies if we are satisfied  
 We encourage our friends and acquaintances to use this manning agency

## Helping

We assist the MA to handle crew problems should they appear  
 We seek for advice from third parties when problems with the manning agency arise

## Tolerance

Even If the service from the MA is not exactly delivered as promised we are willing to put up with it  
 Even If the MA's operator makes a (minor) mistake during the service delivery, we are willing to discuss it over with his superior before taking further actions  
 Even If we have to wait longer than we normally expected to receive the services from our MA, we are willing to adapt

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