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*Ph.D. Dissertation*

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*“The influence of selection criteria on the development of value co-creation in shipping companies: the role of organizational culture and cultural intelligence”*

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Doctoral Committee

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*Nikos and Ioanna*

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*Kirki*

for their patience, faith, and encouragement

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## SUMMARY

**Purpose of the research:** The shipping industry is characterized by the participation of various actors located around the world. The human factor has long played an important role in the shipping industry. The human factor, whether referring to employees or partners, is responsible for interactions and the creation of partnerships, and it is therefore an essential and integral part of the day-to-day activities of shipping companies. However, the shipping industry's complex, ever-changing, and multicultural operational environment encourages the adoption of practices, such as outsourcing, to manage the human factor. One of the most common award practices for shipping companies is that of crew management. The selection of companies' managing crews is therefore a crucial process. So far, little attention has been paid to maximizing value through the selection of business partners (such as crew agencies) or employees (seafarers). An important factor dictating the selection process is the way an organization manages and shapes its members' behavior—companies' organizational cultures. Due to the multicultural business environment in which shipping companies operate, the cultivation of advanced capabilities, such as cultural intelligence (the way in which shipping companies operate in different cultural environments) can work in support of the selection and management of partnerships and/or employees. This thesis seeks to address the issue of selecting business partners by exploring the criteria shipping companies use to select manning agencies as business partners. It also tried to examine how the selection process allows value creation for both actors (shipping companies and manning offices). The role of organizational culture and cultural intelligence in the partner selection process was also explored. Finally, bearing in mind that companies' needs depend on their size, the role of shipping companies' size was also examined.

**Methodology:** For the purposes of this work, a survey was carried out and data were collected from 246 Greek shipping companies that own or manage ships. The data were analyzed using exploratory and confirmatory analyses of factors through the AMOS and SPSS statistical packages. Regression analyses were carried out and mediation tests of Barron and Kenny were also used.

**Findings:** The results determine the criteria used by shipping companies to select manning organizations as business partners and, consequently, the attributes that (hopefully) co-create value among partners, such as quality, recommendation, recruitment, and crew management. Additionally, the results demonstrate that the

shipping companies' individual organizational cultures significantly influence the selection process, while cultural intelligence facilitates communication between different types of organizational culture.

**Originality:** The criteria by which shipping companies choose crew providers as their partners are presented. In addition, data are provided to create, increase, or strengthen mutually beneficial partnerships for shipping companies through the partner selection process. Furthermore, for the first time, the role and importance of organizational culture in the shipping industry and the concept of cultural intelligence in the context of the maritime sector are examined.

**Keywords:** selection criteria, value co-creation, organizational culture, multi-cultural intelligence, shipping industry, crew providers

## ΠΕΡΙΛΗΨΗ

**Σκοπός της έρευνας:** Η ναυτιλιακή βιομηχανία χαρακτηρίζεται από τη συμμετοχή διαφόρων δρώντων που βρίσκονται σε όλο τον κόσμο. Ο ανθρώπινος παράγοντας διαδραματίζει από καιρό σημαντικό ρόλο στη ναυτιλιακή βιομηχανία. Το ανθρώπινο στοιχείο, είτε ως υπάλληλος είτε ως συνεργάτης, είναι υπεύθυνο για τις αλληλεπιδράσεις και τη δημιουργία συνεργασιών, ως εκ τούτου ουσιαστικό και αναπόσπαστο μέρος των καθημερινών δραστηριοτήτων των ναυτιλιακών εταιρειών. Ωστόσο, το πολύπλοκο, συνεχώς μεταβαλλόμενο και πολυπολιτισμικό περιβάλλον στο οποίο λειτουργούν οι ναυτιλιακές εταιρείες, ωθεί στην υιοθέτηση πρακτικών, όπως είναι η ανάθεση των λειτουργιών τους σε εξωτερικούς συνεργάτες, για την αντιμετώπισή του. Στις ναυτιλιακές εταιρείες μια από τις πιο συνήθεις πρακτικές ανάθεσης είναι αυτής της διαχείρισης πληρωμάτων. Η επιλογή των εταιρειών που διαχειρίζονται πληρώματα αποδεικνύεται επομένως μια διαδικασία βαρύνουσας σημασίας. Μέχρι τώρα λίγη προσοχή έχει δοθεί στην αναζήτηση μεγιστοποίησης της αξίας μέσω της επιλογής επιχειρηματικών εταίρων (π.χ., γραφείων παροχής πληρωμάτων) ή υπαλλήλων (π.χ. ναυτικών). Ένας σημαντικός παράγοντας που υπαγορεύει τη διαδικασία επιλογής είναι ο τρόπος οργάνωσης και διαμόρφωσης συμπεριφορών των μελών ενός οργανισμού, δηλαδή η οργανωσιακή κουλτούρα των εταιρειών. Επιπλέον, λόγω του πολυπολιτισμικού επιχειρηματικού περιβάλλοντος στο οποίο λειτουργούν οι ναυτιλιακές εταιρείες, η καλλιέργεια προηγμένων δυνατοτήτων όπως η πολιτιστική νοημοσύνη (ο τρόπος διαχείρισης ατόμων από- αλλά και λειτουργίας των ναυτιλιακών εταιρειών σε- διαφορετικά πολιτισμικά περιβάλλοντα) μπορεί να λειτουργήσει υποστηρικτικά στην επιλογή και διαχείριση των συνεργασιών ή (και) των υπαλλήλων.

Αυτή η διατριβή προσπάθησε να αντιμετωπίσει το ζήτημα της επιλογής επιχειρηματικών εταίρων, διερευνώντας τα κριτήρια που χρησιμοποιούν οι ναυτιλιακές εταιρείες για την επιλογή εταιρειών παροχής πληρωμάτων ως επιχειρηματικών εταίρων. Προσπάθησε επίσης να εξετάσει πώς αυτή η διαδικασία επιλογής επιτρέπει τη δημιουργία αξίας και για τους δύο συνεργάτες (ναυτιλιακές εταιρείες και εταιρείες παροχής πληρωμάτων). Διερευνήθηκαν επίσης ο ρόλος της οργανωτικής κουλτούρας και της πολιτιστικής νοημοσύνης στη διαδικασία επιλογής συνεργατών. Τέλος, λαμβάνοντας υπόψη ότι οι ανάγκες των εταιρειών εξαρτώνται από το μέγεθός τους εξετάστηκε ο ρόλος του μεγέθους των ναυτιλιακών εταιρειών.

**Μεθοδολογία:** Για τους σκοπούς αυτής της εργασίας πραγματοποιήθηκε έρευνα και συλλέχθηκαν δεδομένα από 246 ελληνικές ναυτιλιακές εταιρείες που κατέχουν ή διαχειρίζονται πλοία. Τα δεδομένα αναλύθηκαν χρησιμοποιώντας διερευνητικές και επιβεβαιωτικές αναλύσεις παραγόντων μέσω των στατιστικών πακέτων των AMOS και SPSS. Πραγματοποιήθηκαν αναλύσεις παλινδρόμησης και αναλύσεις διαμεσολάβησης των Barron και Kenny.

**Ευρήματα:** Τα αποτελέσματα αποκαλύπτουν τα κριτήρια που χρησιμοποιούν οι ναυτιλιακές εταιρείες για να επιλέξουν εταιρείες παροχής πληρωμάτων ως επιχειρηματικούς εταίρους και ότι η αξία μεταξύ των συνεργατών μπορεί να επιτευχθεί βάσει ορισμένων κριτηρίων: ποιότητα, συστάσεις, πρόσληψη και διαχείριση πληρώματος. Επιπλέον, τα αποτελέσματα έδειξαν ότι η οργανωσιακή κουλτούρα των ναυτιλιακών εταιρειών επηρεάζει σημαντικά τη διαδικασία επιλογής, ενώ η πολιτισμική νοημοσύνη αναδεικνύεται ως ενισχυτικός παράγοντας μεταξύ διαφορετικών τύπων οργανωτικής κουλτούρας και επιλογής επιχειρηματικών εταίρων.

**Πρωτοτυπία:** Παρουσιάζονται τα κριτήρια με τα οποία οι ναυτιλιακές εταιρείες επιλέγουν ως συνεργάτη εταιρείες παροχής πληρωμάτων. Επιπλέον παρέχονται στοιχεία για τη δημιουργία, αύξηση ή ενίσχυση αμοιβαίων επωφελών συνεργασιών για τις ναυτιλιακές εταιρείες μέσα από τη διαδικασία επιλογής συνεργατών. Ακόμα αναδεικνύεται για πρώτη φορά ο ρόλος και η σπουδαιότητα της οργανωσιακής κουλτούρας των ναυτιλιακών εταιρειών ενώ εισάγεται για πρώτη φορά η έννοια της πολιτισμικής νοημοσύνης στο ναυτιλιακό κλάδο.

**Λέξεις κλειδιά:** κριτήρια επιλογής, συν-δημιουργία αξίας, οργανωσιακή κουλτούρα, πολιτισμική νοημοσύνη, ναυτιλιακή βιομηχανία, εταιρείες παροχής πληρωμάτων

# CHAPTER 1 INTRODUCTION

Chapter 1 presents the main concepts examined in this thesis. The stimuli that led to the present study and its main objectives are also presented. Finally, this chapter describes the main contribution and structure of this thesis.

## 1.1 Generally

Both the shipping industry and the academic community have been interested in national and international buyer–supplier partnerships for several years (*Sam and Walter, 2003*; Green and Hui, 1996). Both academics and professionals have recognized the importance of creating business relationships that benefit all the companies involved. Most importantly, partnerships are a mechanism through which companies respond to changes in their complex and competitive operational environment (Varis et al., 2005). Collaborations between companies provide opportunities for international partnerships by establishing long-term relationships with a global network of enterprises, offering access to new markets, sharing complementary skills and resources, and exploiting partners' differences and advantages (Varis et al., 2005; Cavusgil, 1998; Green and Hui, 1996).

Through partnerships, companies seek to exchange resources that will complement their existing ones in order to achieve their goals. According to Barney (1991), resources can be categorized as physical, human, and organizational. Consequently, partners can be considered an essential element of corporate resources, recognizing the benefits of collaborative partnership (Araujo et al., 1999; Wernefelt, 1989). Through the proper management of their resources, companies seek to achieve a competitive advantage. Nevertheless, they recognize that without the acquisition of resources, skills, and knowledge from other companies, they cannot cope with the broader market environment and meet their organizational objectives.

In general, resources and capabilities can be seen as the basis for any source of competitive advantage (Madhani, 2010), while value co-creation is an additional procedure to achieve it. The concept of co-creation of value argues that all actors in an exchange process are active participants. It is argued that the process of co-creation of value is created at all stages of the transaction and not only at the final stage (Vargo and

Lusch, 2012). More specifically, it is stated that co-creation of value "begins with the creation of resources through resource integration and service exchange, that precede these punctuated dyadic exchanges as well as the resource integration and service exchange activities that created the context in which the value is realized" (Vargo and Lusch, 2012, p.4). Value co-creation is not static: on the contrary, it is systemic because resources' interactions continuously evolve (Vargo and Lusch, 2011). Therefore, resources are considered a critical component in the logic and process of value co-creation. The partnerships companies establish generate mutual interdependence. Successfully managing resources' interactions can give companies competitive advantage as resources can significantly influence the formation and acquisition of desirable skills. Furthermore, managing resources' interactions determines the success of value co-creation activities and processes (Kim et al., 2015).

The above highlights the importance of intentional collaborations between companies who share common goals, recognize their interdependence, and gain mutual benefits (Mohr and Spekman, 1994). Consequently, the role of partners is identified. According to Holmberg and Cumming (2009), partners are necessary since successful cooperation that renders mutual benefits depends on selecting the appropriate partner.

Many researchers from various fields have studied the criteria for selecting collaborators. Some of the criteria companies consider during the selection process are quality, cost, distribution, commitment, availability, reliability, efficiency, flexibility, size, culture, and technological expertise (Wu and Barnes, 2011; Feng et al., 2010; Glaister, 1999; Shah and Swaminathan, 2008; Emden et al., 2006). However, it is worth noting that according to Wu's and Barnes's study (2011), most researchers examine the selection criteria used in the last phase of the selection process: the previous steps have not received enough attention.

Selecting partners is a time-consuming and complex process but of the utmost importance for companies. Each company selects based on its standards, perspectives, and perceptions regarding the prospective partners. An additional factor to consider when choosing partners in the context in which each company refers to (Liang and Mei, 2019; Shah and Swaminathan, 2008; Geringer, 1991).

Given the potentially volatile environment that companies operate in, the choice of partner is crucial. Particularly in recent years, there has been a tendency among companies to outsource both core and non-core functions to external partners (Wu and Barnes, 2011; Feng et al., 2010). Choosing partners is, therefore, of strategic importance for companies. The choice will determine both the quality of relationship and the companies' success (Guertler and Lindermann 2016; Shah and Swaminathan, 2008).

Organizational culture plays a vital role in how companies operate and is one factor that can influence and determine the selection of external partners (Alvesson and Sveningsson, 2003; Alvesson, 1985; Denison, 1984). Studies have shown that decisions, behavior, and management practices result from organizational culture (Cameron and Quinn, 2011). Each organization's culture directs the top management's behavior and, consequently, determines the formation of business strategy and decision-making (O'Reilly et al., 2014). Companies make decisions initially based on maintaining or developing their competitive advantage and developing their skills and knowledge. However, companies' actions toward a joint decision in a collaboration depend highly on companies' organizational culture (Murphy et al., 2019), which is an important factor for a partnership's success. Therefore, it is assumed that how each company is structured directly influences the criteria by which they will choose an external partner, since the outcome of the operations and, consequently, their efficiency depends on it.

Selecting partners becomes even more critical given the complex, changing, competitive, and globalized environment in which shipping companies operate. A major challenge that businesses have to face, particularly in recent years, is managing different multicultural human resources (Livermore, 2015). Consequently, managing partnerships across different cultural backgrounds is crucial for corporations (Cavusgil, 1998).

Aiming to exchange resources and skills through their partnerships, companies operating in multicultural environments need to develop unique abilities. In this context, cultural intelligence, defined as "the ability to operate effectively through national and organizational cultures" (Livermore, 2015), is considered the most useful attribute.

Cultural intelligence has been the subject of scholarly research in recent years. It has been associated with many organizational outcomes and processes, such as adaptive behavior and performance in multicultural settings (Ng et al., 2012; Thomas et al., 2008),

intercultural adaptation (Ward et al., 2009; Ang et al., 2007;), and communication and decision-making (Ang et al., 2007).

Implementing cultural intelligence requires business leadership commitment for change and adaptation. As previously mentioned, a company's management style, and therefore top management behavior, is linked to the organization's values. Organizational culture is characterized by the values and beliefs that top management represent (Quinn and Cameron, 1989). Therefore, a culture that fosters the development of cultural intelligence can bring significant benefits to companies, such as specialization in different markets, innovation, identifying opportunities, and exploiting different perspectives. Additionally, culturally intelligent companies enjoy a more thorough understanding of their partners and potential partners. They can communicate better as they understand their partners' diversity and adapt their behavior accordingly. Unsurprisingly, cultural intelligence can enhance a company's competitive advantage.

An additional factor that affects organizational performance and acquiring competitive advantage of companies is their size (Roza et al., 2011). Companies of different sizes have different dynamics due to the different resources they own. Access for example in technology and human resources can enhance the companies to acquire more capabilities to respond effectively to the changing dynamic operating environment (Karra, Phillips, & Tracey, 2008; Rothwell, 1989; Rothwell & Dodgson, 1993). There is research in various disciplines that investigates the importance of size in various organizational outcomes and activities (Lun and Quaddus, 2011; Vaccaro et al., 2012; Greve, 2011; Lee, 2009; Halkos and Tzeremes, 2007; Majocchi et al., 2005).

The highly globalized shipping industry necessitates many collaborations around the world. Shipping companies operate in a complex environment affected by many factors, but the main factor to be managed is the human factor.

According to the IMO (A.947 (23), 2003), the human factor is a complex, multidimensional issue and affects maritime safety and the protection of the marine environment. It encompasses the full range of human activities performed by ship crews, people in offices, regulators, shipyards, legislators, and everyone must work together to tackle the human factor effectively (Barnett and Pekcan, 2017). Therefore, the creation of partnerships and their management is a significant issue for shipping companies.



It is common for companies (including shipping companies) to outsource their core operations to external companies/partners. Outsourcing is defined as “the process by which an activity traditionally carried out internally is outsourced” (Domberger, 1998 in Papadimitriou et al., 2005, p.3). For example, shipping companies tend to outsource the activity of crew management to manning agencies. 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*”. As such, manning agencies are in charge of finding the right crew, training and supporting them throughout ship’s voyage. The recruitment and management of seafarers is not an easy process, especially considering the instability in the seafarers’ market due to the imbalance between supply and demand (Nguyen et al., 2014). The motivation for outsourcing activities can be attributed to various factors, such as cost-effectiveness and the opportunity to take advantage of the global reach of resources (i.e., different markets’ approaches to human resources).

Shipping companies can either recruit seafarers directly—through private crew companies owned by the parent shipping company, a practice predominantly used by large companies who can bear the cost of establishing and maintaining these crew companies—or indirectly—through external partners, such as crew management offices (manning agencies), a practice used by small- and medium-sized companies, mainly due to financial weaknesses (Nguyen et al., 2014). Studies have shown that size impacts many organizational activities such as decision-making (Li et al, 2018; Pantouvakis et al., 2017; Vaccaro et al 2012). Companies with different sizes have different amount of resources and therefore different needs they want to meet (Bashir & Verma, 2019). Therefore, size is an important factor that should be considered (Josefy et al. 2015; Das and He 2006) while, its examination in the light of service theory and organizational behavior needs further investigation (Roza et al., 2011).

In shipping, the company-partner (customer-supplier) relationship seeks stability. Shipping companies are distinguished by the tendency for rational decisions (Kouand Luo, 2016) and strong interpersonal relationships (Harlaftis and Theotokas, 2004). Moreover, shipping companies are surrounded by a vast network of partners, with which organizations aim to establish stable and efficient relationships, creating mutual value for

all involved parties (Vargo et al., 2016). However, shipping companies' process of partner selection depends on many factors, such as the multicultural environment in which they operate and how the shipping companies are organized and structured.

Based on the above, in-depth research into this topic is needed for the following reasons:

- to better understand the criteria shipping companies use to select their partners and, more specifically, their manning agencies
- to assess the concept of value co-creation and its relationship with the criteria used for selecting external partners
- to examine the role of shipping companies' organizational culture on the selection criteria for external partners
- to investigate the cultural intelligence in shipping companies and its influence on the criteria for selecting external partners
- to investigate the role of firm size in relation to the above

## **1.2 Thesis Stimuli and Aims**

Companies aim to develop and create partnerships and relationships with a view toward the long term. For proper interaction of actors in relationships and partnerships requires a necessary character in order to gain a competitive advantage and mutual benefits through the exchange of resources (*Chang et al., 2015; Wang and Kess, 2006*). The actors who participate in this process must meet certain conditions and characteristics that will lead to successful cooperation and thus achieve the company's goals (*Cancer and Knez-Riedl, 2005*).

There remains, therefore, the need to determine the fundamental criteria that companies consider when selecting partners, as they contribute significantly to companies' performance and success (*Wetzstein, 2019*). Moreover, the choice of partners has been shown to be connected indirectly to attaining a competitive advantage (*Tsou et al., 2015*).

Scholars' interest in the strategic importance of selection criteria to companies' success is evident from the plethora of research on the topic (*Momeni and Vandchali,*

2017). Recognition of this importance is present in both the industrial (*Haeri and Rezaei, 2019; Wang et al., 2018; Guertler and Lindemann, 2016; Donaldson, 1994; Ellram, 1990; Nair et al., 2015; Lieneland et al., 2013; Luo, 1997; Gattringer et al., 2017;*) and service sectors (*Liang and Mei, 2019; Tsou et al., 2019; Tsou et al., 2015; Feng, Faand Ma, 2010; Shah and Swaminathan, 2008; Whyte, 1993*).

According to studies in the shipping industry, the main criteria that are considered to contribute to the development of business collaborations are reputation, trust (*Benett and Gabriel, 2001*), the stakeholders' focus, matching strategies (*Tran et al., 2013*), and task-related and partner-related criteria (*Solesvik and Westhead, 2010*). Despite the number of different criteria proposed, there is no specific set of criteria to apply in each case (*Ellram, 1990*). The process of selecting partners is a complex process (*Feng et al., 2010*). Managers, therefore, decide what criteria will facilitate a collaboration's desired outcome (*Solesvik and Echeva, 2010*).

This research aims to ***highlight the criteria that shipping companies consider when forming partnerships with other companies***, specifically with companies that manage human resources (such as manning agencies).

The importance of resources has been established over the years in the literature pertaining to management and service. Resources are a company's basic tools with which to gain a competitive advantage over others (*Barney, 1991*). To achieve this advantage, companies seek to enter partnerships and relationships with other companies (*Tsou et al., 2019*) with the ultimate goal of mutually benefiting from the exchange of resources and capabilities. This interaction and interdependence between companies can be seen through the concept of value co-creation. According to Akaka et al. (2012,2013), co-creation of value can be defined as an ability to integrate, adapt, and access resources.

The concept of co-creating value has gained the attention of scholars in recent years, particularly in the services sector. Co-creating value is a process associated with the shift of companies' orientation from goods-dominant logic to service-dominant logic.

According to service-dominant logic, the role of all partners in a company's network (companies, customers, suppliers, employees), who can be considered as service systems (*Vargo et al., 2008*), becomes more participatory.

Therefore, any transaction is based on actors' participation and behavior. Rodie and Kleine defined customer involvement as "a behavioral concept that refers to the actions and resources provided by customers to produce and deliver services" (2000, p. 111). Consequently, value co-creation behavior refers to the active participation of customers in the creation of value through their own experiences (Gronroos and Voima, 2013), developed via the utilization of products and services (Gong et al., 2016). So, the process of co-creating value involves creating behaviors that lead to efficient collaboration and mutual benefits.

The choice of actors (or service systems) with whom a company will cooperate can determine the development of behaviors that will lead to the co-creation of value since the choice is based on characteristics set by companies. Thus, this research has an objective *to investigate the role of partner selection criteria on value co-creation behavior*.

The main factor that shapes the attitude and behavior of companies is organizational culture. Its importance is deeply entrenched in the literature as it has been shown to influence critical organizational processes and results. Organizational culture is the foundation of companies: it indicates how they are organized and operate (Veliquette and Rapert, 2001). In addition, it greatly influences communication and decision making, something that, as already mentioned, plays a significant role in the selection of partners. Organizational culture is also associated with attaining a competitive advantage (Tsai et al., 2013), something else that is also achieved by successfully selecting partners. Organizational culture contributes significantly to the adoption and development of initiatives for change and adaptation to the environment and market demands to achieve a company's' goals (Cui and Hu, 2012).

Studies into organizational culture within the shipping industry are rare. Another objective of the present study is to *examine shipping companies' organizational cultures and how they influence the criteria used to select partners*.

The need for companies to be adaptive in a competitive, multicultural, and globalized environment has led to the development of new capabilities, which can be expressed through the concept of cultural intelligence. The concept of cultural intelligence has gained traction within the academic community in recent years as it is

positively associated with decision-making, conflict management, and other processes (Goncalves et al., 2016).

Despite the high level of interest, previous research on cultural intelligence focused on the individual level. However, research has shown that cultural intelligence is an essential factor for multicultural companies and organizations as it can facilitate organizational adaptiveness to change and new processes. For this reason, the capabilities that an organization must develop in order to meet the operational environment's requirements are examined (Trefry, 2006).

Companies are invited to work with enterprises and individuals from different cultural backgrounds, requiring companies to develop the skills that will enable them to operate effectively in this multicultural context. For this reason, scholars recommend the examination of cultural intelligence at the organizational level (Ang and Inkpen, 2008).

Cultural intelligence is related to decision-making and is an additional factor that helps in adaptation and selecting partners because cultural intelligence refers to the ability to perceive and communicate more efficiently and work with people from different cultural backgrounds. The role of organizational culture in cultural intelligence has been suggested in the literature as an avenue warranting further investigation (Ott and Michailova, 2016).

Cultural intelligence is particularly relevant in the context of the shipping industry, a fully globalized industry with contacts and collaborations around the world. Moreover, the industry employs a culturally diverse, international workforce.

With this in mind, the research aims to **highlight the role of cultural intelligence in shipping companies**. This thesis also marks the **first examination of cultural intelligence at an organizational level** using empirical data from the shipping industry.

### 1.3 Thesis Contribution

The criteria specifically used by shipping companies to select an external partner are presented and analyzed. The research was inspired by studies that suggested further investigation was needed because partner selection criteria vary depending on the reference context (Wetzstein, 2019).

The need to create beneficial partnerships and value for companies is gaining more interest in academia and industry. The concept of value co-creation is examined in the context of shipping. The role and importance of actors' behavior for value co-creation are explored, following scholars' suggestions to explore the process that precedes value co-creation, such as the formation of behaviors that render mutual benefits. The study was based on similar surveys conducted in the services sector. This thesis, driven by studies that state that the way we make decisions shapes attitudes about organizational results, examines the role of selection criteria in value co-creation behavior (Diaz-Mendez and Saren, 2017; Hammervoll et al., 2014; Katsikeas and Leonidou, 1996).

The present research looks at the importance, dimensions, and role of organizational culture in shipping companies via empirical data. Although the concept of corporate culture has been studied extensively in various fields, empirical and extensive studies in the maritime domain are limited (*Karakasnaki et al., 2019; Tuan, 2013; De Silva et al., 2011*). The role of organizational culture in relation to the criteria for selecting partners is also explored.

The notion of cultural intelligence at the organizational level is introduced and examined for the first time in the context of the shipping industry. The research was inspired by the fact there are limited studies on cultural intelligence beyond the individual level and proposes examining the phenomenon using empirical data (*Moon, 2010; Ang and Inkpen, 2008; Triandis, 2006*).

Finally, considering research that argues that companies of different sizes operate differently (Bashir & Verma, 2019; Pantouvakis et al., 2017), the size of shipping companies in the above relationships is examined.

## **1.4 Thesis Structure**

The remainder of the thesis continues as follow:

Chapter 2 provides the theoretical background of the constructs under examination. A detailed literature review of organizational culture, cultural intelligence, selection criteria, and value co-creation behavior is described, including the definitions, measurement instruments, and their implications for business.

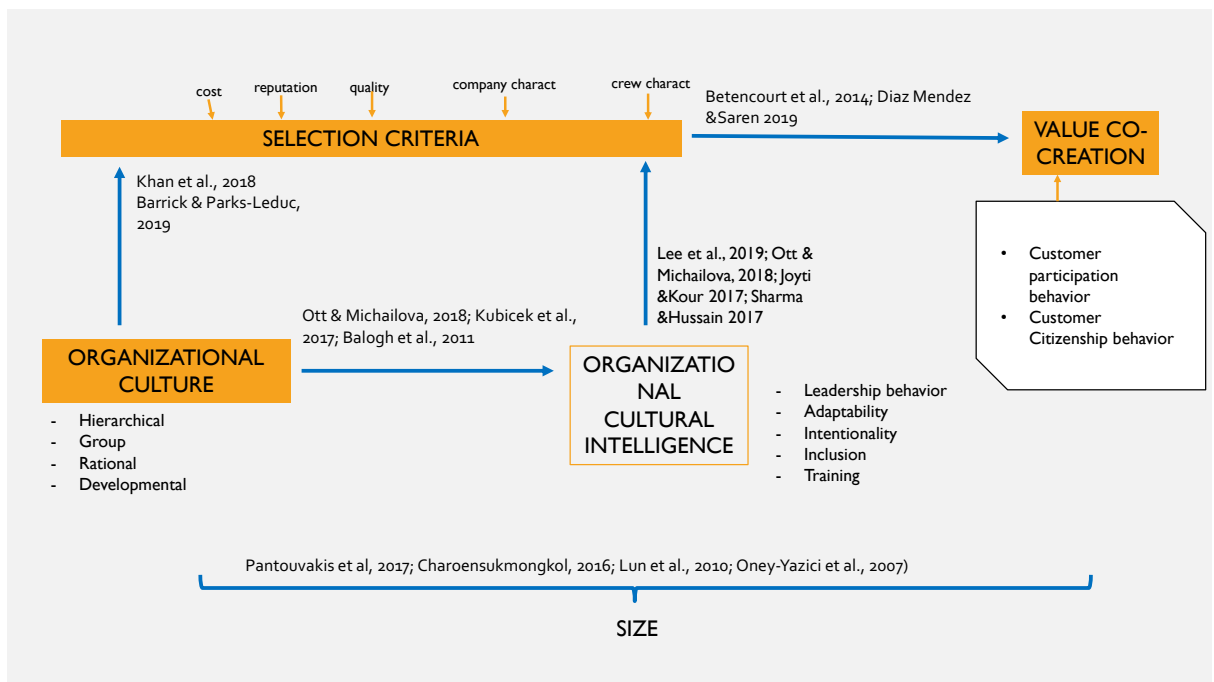
Chapter 3 outlines the development of study's research hypotheses with reference to previous relevant studies

Chapter 4 presents the methodology used for this research. It includes the research design, the sample, and the instruments used for the data analysis.

Chapter 5 provides the results of the analysis. This chapter describes Exploratory and Confirmatory Factor Analysis as well as Regression analysis used for testing the hypotheses.

Finally, chapter 6 discusses the managerial implications and limitations derived from the conclusions, plus avenues for future research.

Figure 1. The proposed constructs under examination





## **CHAPTER 2 THEORETICAL BACKGROUND**

Chapter 2 presents the literature review of the concepts examined in this thesis.

### **2.1 SELECTION CRITERIA**

#### ***2.1.1 Generally***

The criteria for selecting partners have been of great concern to the academic community. Some of the criteria considered by companies when selecting a partner include quality, cost, distribution, commitment, availability, reliability, efficiency, flexibility, size, culture, and technological expertise (Wu and Barnes, 2011; Feng et al., 2010; Geringer, 1999; Shah and Swaminathan, 2008; Emden et al., 2006).

In the past, one could say that the primary concern of companies was to increase their profitability. However, today, the goals of the companies have changed. Companies are looking for ways to maintain their attractiveness and competitive advantage in a globalized and ever-changing environment. The main goal of companies is to maximize their value, but not purely in financial terms. In this way, they seek to minimize uncertainty but at the same time to strengthen and exploit their strengths and weaknesses.

Given the above, most organizations understand that the exploitation and use of their resources and capabilities alone are insufficient. There is, therefore, an increasing tendency of companies to create relationships and partnerships of various forms (strategic partnerships, alliances, and international joint ventures). Mohr and Spekman (1994) define partnership as "purposive strategic relationships between independent firms who share compatible goals, strive for mutual benefit, and acknowledge a high level of mutual interdependence" (p.135). Each company selects a partner based on its standards, perspectives, perceptions, and context (Liang and Mei, 2019; Shah and Swaminathan, 2008;). There are many reasons why companies build relationships with partners (Cavusgil 1998) with the ultimate goal of an interactive relationship that will generate mutual benefits (Wang and Kess, 2006; McQuaid, 2000). Some of these benefits focus on achieving price reductions (or generally lowering costs), ensuring a reliable supply source, improving quality, and reducing and simplifying administrative procedures (Ellram, 1995). Additional factors that contribute to developing partnerships between

companies are the exploitation of technological expertise, access to different resources, experience, skills, and stakeholders' abilities (Liang and Mei, 2019; Ellram, 1990). But the ultimate goal is to cooperate in order to add value to both parties. In companies with global operations, the reasons can be extended to include easy access to markets, the establishment of favorable political relations, the acquisition and exploitation of knowledge, the understanding of cultural differences, and access to resources (Luo,2002).

One common form of business partnership is outsourcing (Wu and Barnes, 2011; Fen et al, 2010). Quelin and Duhamel (2003) defined outsourcing as "the operation of shifting a transaction govern internally to an external supplier through a long-term contract and involving the transfer of staff to the vendor" (p.648). Mishra et al. (2018) support the development of a relationships with external partners who can provide the resources that will help companies meet their organizational goals. The outsourcing relationship developed between the companies (such as shipping companies and manning agencies) is significant as it is a continuous interaction and integration process (Kaipia and Turkulainen, 2017). A preference from multiple to fewer or single sourcing further highlights this outsourced relationship's significance (Kakouris et al., 2006).

As with other forms of partnerships, there are various reasons to outsource core or non-core activities. Some reasons include the reduction of costs, enhancement of company's success, access to new markets, and focusing on core competencies, as well as the lack of information technology, manpower, knowledge, experience, and resources are some of the main reasons for outsourcing (Sigala and Wakolbinger, 2019; Quelin and Duhamel, 2003; Jharkharia and Shankar, 2007). Through this practice, companies can exchange knowledge and ideas, exploit opportunities, and improve service provision, strengthen their competitive advantage and resources.

The resource-based view theory argues that resources provide companies with a competitive advantage. Researchers have defined resources as "tangible and intangible elements that are semi-permanently associated with companies" (Wernefelt, 1984, p.172), and as "all assets, processes, capabilities, and knowledge, controlled by the firm" (Barney, 1991, p.101). Resources can, therefore, be machines or components, processes, know-how, and human and financial capital (Wernefelt, 1984). These resources allow

businesses to add value to the customer value chain (Madhani, 2010). Business partners can be considered an essential element of companies' resources as companies increasingly recognize the benefits and usefulness of a cooperative relationship (Araujo et al., 1999). For this reason, several scholars focus, among other things, on the Resource-Based View theory when examining business partner selection criteria since their choice is considered important and crucial for the creation and success of the partnership (Tran et al., 2020; Tsou et al., 2019; Roseira and Brito, 2014; Saxena and Bharadwaj, 2009; Prashant and Harbir, 2009; Cancer and Knez-Riedl, 2005; Wang and Kess, 2006; Luo, 1997).

Given the dynamic and unstable environment in which companies operate, the choice of partners becomes essential. It holds strategic importance for companies, as it is an indicator of both the quality of a relationship sub-configuration and its success (Guertler and Lindermann 2016; Shah and Swaminathan, 2008). Thus, companies' choice of with whom they will be involved in a long-term relationship is important as it affects both parties' tangible and non-tangible assets (Jiang et al., 2007).

Creating business relationships and partnerships is not an easy process nor is it automated. On the contrary, preparation by all participating parties to determine whether there are suitable grounds for a relationship based on expediency, desire, and cultural compatibility (Altinay, 2006). It is therefore prudent to argue that in order to build relationships and collaborations, there must first be the stage of evaluating and selecting potential partners. As discussed above, partner choice is paramount, and special attention should be paid to the selection criteria companies use when forming partnerships.

### ***2.1.2 Definitions***

Companies choose partners based on their needs. Since criteria for selecting partners differ from company to company, there is no universal definition of selection criteria. However, some researchers have attempted to clarify the concept of partner selection criteria based on broader features. Choice of partner(s) is linked to decision-making as companies try to associate with partners who will complement the company conditions for success and objectives fulfillment. On this basis, researchers have agreed that partner selection criteria is based on decision-making and problem-solving. Sarkis et al. (2007) state that the criteria for selecting partners (such as suppliers) are a set of

standards that facilitate the alignment of external resources with company goals. Others say it is an organizational activity aiming to solve arising issues (Baum et al., 2005 in Liang and Mei, 2019). Similarly, in the context linking selecting (suppliers) with problem-solving, Haeri and Rezaei (2019, p.768) defined partners selection criteria as "a multiple criterion decision-making (MCDM) problem where a limited number of alternative suppliers are evaluated with respect to a limited set of (conflicting) criteria." Taherstood and Brard (2019) offered a more comprehensive and straightforward definition, stating that the selection of a supplier is the "process by which firms identify, evaluate and contract with suppliers" (p.1024).

### ***2.1.3 Elements of Business Partners' selection criteria***

Partner selection criteria are different for each company, according to each organization's needs, both in terms of job tasks and personnel and regarding the broader operating environment (Solesvik and Westhead, 2010; Dacin et al., 1999). Geringer (1991) was one of the first researchers to categorize criteria in task-related and partner-related criteria. Task-related criteria include tangibles or intangible variables such as technical know-how, financial resources, experienced personnel, whereas partner-related criteria include the partners' corporate or national culture, trust, organizational structure, partners compatibility.

Another researcher (Wilson, 1994) stated that the criteria could be divided into performance, economic, integrative, adaptive, and legalistic categories, which align with the criteria of quality, price, service, and delivery. Shortly afterward, Luo (1997), based on Geringer's typology, categorized the criteria into cooperation criteria (organizational traits) and operation criteria (strategic traits). Many authors later followed this typology (Islam et al., 2011; Solesvik and Westhead, 2010; Dong and Gleister, 2006). Katsikeas and Leonidou's (1996) study on international supplier selection examined supplier selection criteria based on company characteristics, behavior and attitude, reputation, short delivery times, and continuous long-term supply. These were further classified into two broad factors: supplier assurance and supplier reliability (Katsikeas and Leonidou, 1996). A later study about developing and emerging markets reported that the partner selection criteria included technical and managerial skills, the willingness to share knowledge, market knowledge, and the ability to access a new market (Hitt et al., 2000;

Shi et al., 2012). Moreover, in research into the interdependence of selection criteria under uncertain conditions in the Iranian automotive industry found innovation to be the main criterion, followed by technological capability and management commitment (Haeri and Rezaei, 2019).

*Table 2.1 Selection criteria used in the literature*

<b>Reference</b>	<b>Criteria</b>	<b>Methodology approach</b>
Abidi et al. et al. 2019	Financial      Organizational      Strategic Performance	MCDM
Altinay, 2006	Task-related and partner-related criteria	Qualitative
Asian et al., 2019	24 possible criteria for 3PL selection: price, financial conditions, experience, location, asset ownership, international scope, annual efficiency, optimization capabilities, customer service, 3PL's supply chain vision, creative management, continuous improvement, availability of top management, cultural fit, general reputation labor relations, human resources policies, technological innovation, service quality, communication, flexibility, market knowledge, inventory management, shipment, and tracking	KANO model
Batarliene and Jarasuniene, 2017	cost reduction, operational parameters, information technology systems, flexibility, quality management, collaboration with customers, fixed assets, and performance evaluation	Statistical

Bennett and Gabrel, 2001	reputation, trust, commitment, closeness	
De Araujo et al., 2015	<p>deliver, price, geographical location, Production Capacity and Facilities, Compliance with company procedures, Ability to meet the specifications of the package, Responsiveness, Technical capabilities, Desire to enter business deals, Management and organization of suppliers, Management systems, Commitment, Credibility, Efficiency, Quality of product/service, Technical capabilities, Flexibility, Cooperation capability, Impression</p>	PROMETHEE – GDSS
Cheraghi et al., 2004	<p>Based on the results of this study, it seems appropriate to conclude that supplier selection criteria will continue to change based on an expanded definition of excellence to include traditional aspects of performance (quality, delivery, price, service) in addition to non-traditional, evolving ones (JIT communication, process improvement, supply chain management). We also expect further erosion of the ranking of price</p>	Literature Review

Dacin et al., 1997	Financial Assets, Complementarity of Capabilities, Unique Competencies, Industry Attractiveness, Cost of Alternatives, Market Knowledge Access, Intangible Assets, Managerial Capabilities, Capabilities to Provide Quality Product/Service, Willingness to Share Expertise, Partner's Ability to Acquire Your Firm's Special Skills, Previous Alliance Experience, Special Skills That You Can Learn From Your Partner, Technical Capabilities	
Doherty, 2009	financial stability, business know-how, a good understanding of the local market, a shared understanding of the brand, businesses' strategic future, and chemistry between the two partners	Qualitative
Donaldson, 1994	service, adaptability and responsiveness, delivery performance, price	Statistical
Dong and Gleister, 2006	Task-related criteria (e.g., knowledge, value chain access, production technology Partner-related criteria (e.g., reputation trust and prior ties Business relatedness, company size, and financial stability	Statistical
Ecer, 2018	Cost, relationship, services, quality, information system, flexibility, delivery,	MCDM

	professionalism, financial position, location, and reputation	
Ellram, 1990	Four broad categories: Financial Issues, Organizational Culture and Strategy Issues Technology Issues, Other Factors	Statistical
Feng et al., 2011	Individual attributes include technology capability, financial health, knowledge and managerial experience, and capability to access a new market. Collaborative attributes consist of: resource complementarity, overlapping knowledge bases, motivation correspondence, goal corresponded, and compatible cultures.	MCDM
Gardas et al.,2019	Cost of wastage, distribution cost, cost of training, etc., Service quality, Quality certification, and health safety, Technology innovation and IT capability, Healthy relationship with employee and customers, Agility and flexibility, Expansion capacity into health management distribution service, Capability of robust supply network/distribution network, Satisfaction level of the employee, Environmental quality certifications, Governmental rules and regulations and political stability, Financial performance,	MCDM



	Sustainable eco-friendly process/recycling, availability of cold storage vehicles and suitable drivers	
Gattringer et al., 2017	trust, commitment, geographical proximity, complementarity	Action research approach
Guertler and Lindemann, 2016	operative-technical (expertise, know-how competencies) strategic-political (power, interest, attitude)	combining different approaches, such as Lead-User identification and stakeholder analysis
Haeri and Rezaei, 2019	Quality, Price, Delivery, Innovativeness, Technology capability, Resource consumption, Green Image, Pollution production, Pollution control, Management commitment	MCDM
Hofstede et al., 2009	trust, status, loyalty, learning	
Islam et al., 2011	Task-related criteria (e.g., partner's knowledge of the local market, local culture, of the production process) Partner related criteria (e.g., partner's ability to negotiate, Partner's reputation in the market, trust between partners and top management teams, Financial	Statistical

	status/financial resources of the partner, Quality of partner's management teams, company size, compatibility of cultures)	
Jovcic et al., 2019	price, delivery, safety, technology level, and social responsibility	MCDM
Prashad and Harbir, 2009	complementarity, commitment, and compatibility	
Kar and Pani, 2014	Product quality, compliance with the delivery schedule, price, technological capability, production capability, financial strength, and the electronic transaction capability	Literature Review
Katsikeas et al., 2004	reliability, competitive pricing, service support, and technological capability	Statistical
Lee, 2019	inter-firm cooperation, alliance cost, organizational learning	Statistical
Liang and Mei, 2019	inertia	Statistical
Luo, 1997	strategic traits (absorptive capacity, market power, product relatedness, industrial expertise) organizational traits (organization form, no of employees, experience, organizational collaboration)	Statistical

Nair et al., 2015	<p>Two categories:</p> <p>strategic related criteria (e.g., technology capability of the suppliers, ability to contribute to new product development)</p> <p>Operational related criteria (e.g., quality, flexibility, and customization capabilities)</p>	Statistical
Oliveira Neto et al., 2017	<p>Credibility and Experience, Quality management, Information Technology, Human Resources, Reliability, Responsibility and Operation Infrastructure (concluded from 15 criteria)</p>	MCDM
Nikitakos and Pirkatis, 2011	<p>Price, Quality of Services, Reliability, Capability, Outsourcing Experience, Experience of Shipping It, Economic Force, Size of Vendors' Firm, Reputation</p>	MCDM
Radziszewska-Zielina, 2010	<p>The base of Orders, No of Suppliers, Service Quality, Division Costs, Adaptation to Market Changes, Participation in New Offers, Mutual relations, Communication, Information Sharing, Conflict Solving, Rules of Behaviors, Frequency of Contact, Trust</p>	MCDM
Rau et al., 2016	<p>Transportation cost, Fleet capacity, Vehicle type, and quality, Driver rejection, Performance, Flexibility, Lead (response) time</p>	MCDM and Mathematical programming

Rezai et al., 2016	Cost of delivery, Lead time, Non-competitor on specialties, Price, Production facilities and capacity, Quality, Compliance on certification, Sustainability performance	MCDM
Roy and Oliver, 2009	Partner-related criteria (i.e., character, market power, intent, ability) Task-related criteria (i.e., political ties, factors of production)	Statistical
Roy and Sengupta, 2018	Six broad categories: Basic criteria Capabilities, Quality, Client relationships, Labour relations, Sustainability	Literature review
Shah and Swaminathan, 2008	commitment, complementarity, trust, value	Qualitative
Solakivi and Ojala, 2017	Cost quality, service, IT, environment	Statistical
Tatoglou, 2000	Partner-related criteria (e.g., knowledge of local market, Trust between top management teams, Reputation Compatibility, Quality, Financial status/financial resources, Size of partner, Complementarity, Experience) Task-related criteria (e.g., access to knowledge of the local market, local culture, to capital)	Statistical

Tavasszy, Kaa and Liu, 2020	Transportation costs, Door-to-door travel time, On-time reliability, Flexibility, Frequency, Reduction of Co2 emissions	MCDA
Tsou, Chen, and Hsu, 2015	Partner compatibility, partner expertise, partner complementarity, partner reliability	Statistical
Tsou, Chen, and Wang, 2019	Partner compatibility, partner expertise, partner reliability	Statistical
Varis, Kyivalainen, Saarenketo, 2005	Business criteria (e.g., company's history and financial situation) Marketing criteria (e.g., marketing capabilities and resources, existing contacts with potential customers and competitors) Partner-potential criteria (e.g., relationships, reputation, business culture) Technical criteria (e.g., experience, know-how, and expertise)	Qualitative
Wadhwa and Ravindran, 2007	Price, lead-time and quality	Mathematical programming
Wang et al., 2018	Criteria of cost (OPEX and COGS)	Mathematical programming

Whyte, 1993	The Ability of representative, Promotional material, Physical facilities, Financial viability, Ability to provide a good service, Price, Size — national company preferred, size — local company preferred, Location the firm should have a local depot, Likelihood of establishing a long-term relationship, An established name and reputation Previous experience with the haulier, flexibility to your future requirements, reputation for integrity, Livery, Market knowledge, Computer link, Administrative support	Statistical
Wilson, 1994	quality, price, service, and delivery	Statistical

As the above table (2.1) illustrates, companies considering their current needs use subjective criteria to select partners. Partner selection criteria vary from company to company and from industry to industry. Additionally, different methods are used to investigate selection criteria. According to De Boer et al. (2001), there are four distinguished phases for selection criteria: problem definition, formulation of criteria, qualification, and choice. They argue that most studies only focus on the final selection stage and suggest that steps before the final decisions need examination. Their framework depicts all stages. They further argue that important factors affecting the partner selection process are the number of suppliers, the importance of the relationship, and the uncertainty (De Boer et al., 2001). Nevertheless, there are many methodological approaches for selection criteria, such as multiple criteria decision-making (MCDM) techniques, statistical approaches, mathematical programming, and a mix of approaches.

#### ***2.1.4 Elements of Business Partners' selection criteria***

The literature reveals that the industrial sector's selection criteria emphasizes technical skills, innovation, product production, and quality. The main criteria appear to be a technological capability, innovation, equipment, costs, market position, investment capabilities, followed by management commitment, organizational culture, reputation, and experience (Haeri and Rezaei, 2019; Wang et al., 2018; Nair and Jayaram, 2015; Lieneland et al., 2013; Donaldson, 1994; Ellram, 1990)

Conversely, in the service industry, the criteria focus more on the customers' characteristics related to the creation of relationships and partnerships. Knowledge and management skills, experience, resource complementarity, cultural compatibility, collaboration ability, trust, commitment, and reliability are cited as the most important criteria considered for partner selection (Feng et al., 2019; Tsou et al., 2019; Tsou et al., 2015; Swaminathan, 2008; Whyte, 1993).

However, research that simultaneously studied several sectors (manufacturing and services) showed that trust, commitment, compatibility, organizational culture, and the ability to disseminate and share knowledge are among the key criteria considered for partner selection (Gattringer et al., 2017; Tatoglu, 2000).

*Table 2.2 Selection criteria in different sectors*

service sector	Jovicic et al., 2019; Liang and Mei, 2019; Tsou et al., 2019; Neto et al., 2017; Tsou et al., 2015; Feng et al., 2011; Nikitakos and Pirkatis, 2011; Altinay, 2006; Varis et al., 2005; Katsikeas et al, 2004; Whyte, 1993
manufacturing	Haeri and Rezai, 2019; Asain et al, 2018; Ecer, 2018; Gardas et al., 2018; Solakivi and Ojala, 2017; Rau et al., 2016; Rezai et al., 2016; Guertler and Lindemann, 2016; de Araujo et al, 2015; Nair et al., 2015; Kar and Pani, 2014; Radziszewska-Zielina, 2010; Doherty, 2009; Wadhwa and Ravindran, 2007; Luo, 1997; Dong and Gleister, 2006; Donaldson, 1994; Wilson, 1994; Ellram, 1990;
Multiple sectors/ General reference	Gattringer et al., 2017; Islam e al., 2011; Roy and Oliver, 2009; Hofstede et al., 2009; Cheraghi et al., 2004; Tatoglou, 2000; Dacin et al., 1997

3PL, strategic alliances	Abidi et al., 2019; Roy and Sengupta; Wang et al., 2018; Batarliene and Jarasuniene, 2017; Kale and Singh, 2009; Shah and Swaminathan, 2008
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Based on the broader literature of partner selection criteria, criteria can be summarized into broader groups of cost, reputation, quality, company characteristics, and crew characteristics. Cost as a selection criterion has long been a key factor in selecting partners (DeBoer et al., 2001). Over time, however, the shift to a more customer-centric orientation: cost has ceased to be of primary importance (Wilson, 1994), and companies started to focus more on other criteria. Another important criterion for selecting partners is reputation. Reputation can build trust, which is a key factor in building partnerships (Bennett and Gabriel, 2001; Holm et al., 1996). Research conducted in the automobile industry has shown that suppliers' reputation has a significant impact on customer reputation (Lieneland et al., 2013). Furthermore, quality enhances collaboration and can lead to long-term relationships.

Companies seek to provide high-quality products and services (Genovese et al., 2013). Companies' characteristics are an important factor in their results and processes, such as decision-making and, therefore, partners' choice (Wong et al., 2005). Other important criteria for partner selection are also company's size (Mitroussi, 2003; Tatoglu, 2000), interaction and processes (Whyte, 1993), knowledge of the market, and its ability to access new markets (Tran et al., 2020; Solesvik and Westhead, 2010; Tatoglu 2000). The importance given in recent years to the development and exploitation of resources has led companies to adopt practices that emphasize managing relationships with customers, suppliers, and their employees. Therefore, company characteristics are an important selection criterion. Other researchers found that that the most important factors for selecting partners are trust, commitment, market knowledge, resource capabilities, reputation, interfirm cooperation, and intrafirm management (Tran et al., 2020; Bennett and Gabriel, 2011; Solesvik and Westhead, 2010).

One of the key features of the partner selection process is the perception of companies about their attractiveness. In this context, scholars have defined partner attractiveness as "the degree to which the initiating firm in a particular alliance project



sees a partner as desirable, favorable, appealing, and valuable" (Shah and Swaminathan, 2008, p.473). Compatibility and complementarity of partners—meaning the contribution of resources and expertise that align, similar operational methods, and willingness to work toward mutual benefit—are also important elements to be considered in the partner selection process (Prasant and Harbir, 2009).

Despite the plethora of studies on selection criteria, the need for further investigation remains. According to Ellram (1990, 1995), who stressed the importance of criteria for selecting partners in the manufacturing sector, it is necessary to further examine criteria, especially those of a qualitative nature. He argued that there is no specific combination of criteria that are universally applicable, so more research is needed to establish selection criteria for successful cooperation between customer and supplier. Varma and Pullman's study (1998) in the industrial sector examined which of quality, flexibility, delivery, and cost criteria are considered the most important when selecting suppliers. The results showed that quality is considered the most important criterion; however, the same research noted that at the final hour, cost prevails (Varma and Pullman, 1998). Despite this contradiction, they noted that further research was warranted because the crucial criteria for selecting partners could vary in managers' eyes from industry to industry (Varma and Pullman, 1998). Wetzstein et al. (2018), in their literature review on selection criteria for the years 1991 to 2017, concluded that most of the research focused on investigating theoretical backgrounds and that, despite the existing body of work, further research into selection criteria was needed.

## **2.2 VALUE CO-CREATION AND VALUE CO-CREATION BEHAVIOR**

### ***2.2.1 Overview***

Companies recognize the difficulties of thriving in a competitive environment and try to find ways to survive and operate effectively and efficiently, which will create value. One way is to make the most of their collaborations. Therefore, companies emphasize the development, strengthening, and maintenance of relationships with their partners to achieve organizational objectives by creating mutually beneficial value. In this fast-changing environment, companies realize that depending only on their resources is insufficient, and thus collaboration and interaction with clients, partners, customers could

be of valuable advantage. Hence, value co-creation occurs when the partners interact with each other to reap benefits that would otherwise be unobtainable if operated autonomously.

The development of business relationships and collaborations offers the possibility of strengthening the partners' strategic competitive advantage. Value co-creation is based on the exchange of knowledge, expertise, skills, information, and resources between partners for the benefit of all involved. Therefore, value co-creation enhances companies' competitive advantage (Bettencourt et al., 2014; Ramaswamy, 2009; Ulaga, 2003).

### ***2.2.2 Definitions***

Value co-creation is not a new concept (Grönroos, 2011), although last year it gained much attention in the literature. Understanding the concept of value for companies beyond economics had already been recognized (Low, 2000). From the service science perspective, co-creation begins with the interaction of involved actors' resources to achieve an overall mutually beneficial outcome (Vargo et al., 2008). Despite the great interest, there is no consensus on the definition of value co-creation. Dobrzykowski et al. (2010) defined value co-creation as "the extent to which the worth of a product or service is determined by the beneficiary as derived by the participation of suppliers, the focal firm and the beneficiary" (p.115). Ramaswamy (2011) later referred to it as "a process by which mutual value is expanded together" (p.195). Ramaswamy (2009) also noted the importance of actors' experiences in building relationships that will enhance mutually beneficial value.

Building on this notion, Helkkula et al. (2012) extended the concept of value co-creation by defining it as "the value that service customers directly or indirectly experience within their phenomenological lifeworld contexts" (p.61). McColl-Kennedy et al. (2012) defined value co-creation as "benefits realized from the integration of resources through activities and interactions with collaborators in the customer network" (p.370). Galvagno and Dalli (2014) defined co-creation as "the joint, collaborative, concurrent, peer-like process of producing new value, both materially and symbolically" (p.644). Along the same lines, Neghina et al. (2015) define co-creation as "a joint activity between two or more economic actors to create value beyond what each actor can achieve independently" (p.223). By definition, therefore, value co-creation focuses strengthens

and highlights the importance of the collaborative relationship that develops between the actors involved and their perceived experiences of potential benefits.

*Table 2.3 Value Co-Creation Definitions*

	VALUE CO-CREATION
Ramaswamy (2009)	“the process by which products, services, and experiences are developed jointly by companies and their stakeholders”
Dobrzykowski (2010)	“the extent to which the worth of a product or service is determined by the beneficiary as derived by the participation of suppliers, the focal firm and the beneficiary”
Ramswamy (2011)	“a process by which mutual value is expanded together”
Vargo and Lusch (2010)	“an interactive process that takes place in the context of a unique set of multiple exchange relationships”
Mc. Koll Kennedy et al. (2012)	“benefits realized from integration of resources through activities and interactions with collaborators in the customer network”
Galvagno and Dalli (2014)	“the joint, collaborative, concurrent, peer-like process of producing new value, both materially and symbolically”
Neghina et al (2015)	“a joint activity between two or more economic actors with the purpose of creating value beyond what each actor can achieve independently”

### ***2.2.3 Origin of Value co-creation***

Value centers on two distinct meanings: value in use and value in exchange (Lepak et al., 2007). The most common utility of value was that of monetary exchange. However,

Vargo et al. (2010) and Vargo and Lusch (2010) supported the notion of value in the context of a relationship among actors. Value co-creation is a dynamic, ongoing process that moves beyond personal transactions (Vargo and Lusch, 2016). It is the exchange of service that generates value co-creation, which occurs through a collective activity (Neghina et al., 2015).

Vargo and Lusch (2004) developed the concept of service-dominant logic (SD logic), which moves forward the perception of services based on goods- dominant logic. The latter supported the idea that services were about goods based on money exchange. SD logic provides a new overview of service exchange for service and encompasses all the basics of the economies and society.

SD logic is based on ten axioms supporting the idea of value co-creation (Vargo and Lusch, 2010). Based on these ten axioms, goods remain important, but only as a means for service provision. The source of competitive advantage is knowledge, and the customer is a co-producer of value (Vargo and Lusch, 2004). However, as researchers explored the idea of value creation, they concluded that this initial framework was relatively narrow, focusing on the customer-customer relationship. The process of co-creation of value did not include the relationship between companies, making it clear that further consideration of co-creation of value was needed in the B-2-B context and the broader ecosystem of services (Kohtamaki and Rajala, 2016).

According to Frow et al. (2014), to examine value co-creation in service ecosystem, one should consider networks and other actors that frame companies and organizations. At the same time, based on Vargo's and Lusch's (2004) axioms of value co-creation of, the authors noted that the basic foundation of SD Logic is the value propositions defined as "a proposal of a resource offering between actors that shapes resource integration between actors within the ecosystem" (p.344). These propositions can be processed at three levels: employees, suppliers, and other stakeholders corresponding to the micro, meso, macro-level of the service ecosystem, respectively. The authors conclude that its foundation, value creation is a mechanism through which resources are offered and attracted while being realized by the potential value found in those resources. It is a dynamic, constantly evolving process that influences and is influenced by the integration of resources and the composition of networks.

Different perspectives try to interpret the notion of value co-creation. For example, the consumer culture theory focuses more on customer value, affecting customers' activities toward value co-creation (Penaloza and Venkatesh, 2006). Innovation studies examine actors' involvement in the process of value co-creation as it is seen as a source of innovation (Alves et al., 2016; Saarijärvi, Kannan and Kuusela, 2013). The marketing literature reflected a perspective shift from goods-dominant logic to a service-based perspective that goes beyond tangible goods and monetary exchange. This service logic value includes intangible assets, knowledge, and resources (Vargo and Lusch, 2004 p.15).

Accordingly, a revised version of the SD logic axioms followed. The main difference from the previous axioms is the strengthening of the importance of resources, actors and the fact that actors now actively create and offer value propositions (Vargo and Lusch, 2016).

An important distinction in SD logic is between operand and operant resources. Operand resources are tangibles with a static function, while operant resources have a dynamic function and are intangible. According to SD logic, all actors are resource integrators, meaning that all customers and companies are value co-creators (Vargo and Lusch, 2011). The integration and interaction of companies' resources is at the core of value co-creation, while simultaneously, all involved parties become actors of value co-creation (Gronroos and Voima, 2013, p.135).

Organizations try to maximize their resources to achieve their predefined goals while still producing quality services and products. Maintaining a competitive advantage is a priority, especially should the organization operate in dynamic, unstable environments. Nevertheless, according to recent studies, such as Barile et al. (2017) and Chen et al. (2014), more research in this area is required.

In summary, SD Logic extends the meaning and value of transactions beyond economics. Each transaction offers value to all parties involved, as their role has been significantly enhanced by becoming co-creators and co-producers of value (Grönroos, 2006). The actors' participation in the process and realization of a transaction acquires a primary role because in order to fulfill the transaction, resources, skills, and knowledge

must be exchanged. Therefore, the interaction of actors, the integration of resources, and actors' role are the key elements underlined by the theory of co-creation of value.

#### ***2.2.4 Elements and Drivers of Value co-creation***

Due to this evolution, the concept of value co-creation became abstract and ambiguous, calling for further examination of the elements that constitute it. Bharti et al. (2015), based on the existing literature on value co-creation, concluded that it consists of five pillars: environment, resources, co-production, perceived benefits, and management structure. Each pillar consists of sub-elements (such as interaction, relationships, customer participation, customer learning, leadership, and organizational agility) that enable value co-creation. According to the authors, these pillars and their sub-elements are interdependent. Value co-creation requires a combination of factors such as the skills, participation, involvement, experience, learning, and behavior of the actors involved, that have mutual benefits. Several scholars have highlighted the importance of learning, the desire to engage in business relationships, and the desire to exchange resources and value creation skills (Gupta and Gupta, 2019; Cambra-Fierro et al., 2018; Chen et al., 2014; Hammervoll and Toften, 2010).

For example, Hammervoll and Toften (2010) suggested that the exchange of knowledge and information and motivation and adaptation are important factors when co-create value. They posited that business relationships should be distinguished into two categories: transaction-based and relationship-specific investments. The characteristics mentioned above apply to the first category. Moreover, their findings did not support the relationship-specific investment category for value co-creation, suggesting that long-term relationships are important for actors' interaction to co-create value. Hammervoll and Toften's (2010) findings contradict the fundamental belief of value co-creation theory that supports the cooperative relationship between the parties. They also contradict other scholars' findings (Gupta and Gupta, 2019; Bettencourt et al., 2014), who argue that the development of long-term cooperative relationships leads to more efficient interaction between partners and value co-creation.

Gupta and Gupta (2019) claimed that the exchange of information, capabilities and mutual understanding between actors allow the development of long-term relationships as they help adapt the parties' requirements, resulting in successful cooperation. In

business relationships, to reach successful agreements, actors must trust each other. Trust allows the development of long-term relationships, enhancing stakeholders' willingness to engage in a transaction where they will share information and exchange resources. Trust and subsequently the creation of strong relationships are important factors that enhance value co-creation.

Another factor that plays an essential role in co-creating value is quality. Quality is an important feature in the context of value co-creation and for service ecosystems. Studies cite the importance of quality in the context of service quality management. They propose that service quality management should be viewed holistically, based on the service ecosystem theory, to achieve total value co-creation and build on new service quality management practices (Chen et al., 2014). Riedl et al. (2009) conducted research on quality management and the service ecosystem by examining a case study. They concluded that quality management and quality perception are influenced by the service ecosystem while suggesting further empirical validation. Gummesson (2008) supported the idea that quality is derived from multiple actors' perceptions and interactions in a service exchange. Considering that service quality management is rooted in courtesy, responsiveness, competence, access, communication, reliability, knowledge, credibility, security, and tangibles (Parasuraman et al., 1988), it could be inferred that these features of quality have a significant impact on value co-creation.

Research by Cambra-Fierro et al. (2018) reinforced the significance of quality on the parties' relationship. They argue that the relationship's quality is defined by the trust, satisfaction, and commitment developed between partners. Therefore, value co-creation depends on the quality of the relationship, which is created gradually. According to Cambra-Fierro et al. (2018), the dynamics of value co-creation differ depending on the stage of the partners' business relationship. In particular, potential partners seem to be more reluctant in the early staged because they do not know their potential partner as well and, therefore, lack trust and are reluctant to exchange of knowledge, information, and resources. If this stage is overcome, then all the conditions for value co-creation can be met. The final step may be the termination of cooperation when there is no desire to continue. The actors cease to invest in this business relationship when there is no more space to create beneficial value. Concluding the quality of the relationship, depending on

the stage it is in, cultivates the partners' behavior that will allow them to build a beneficial and efficient business relationship.

### ***2.2.5 Value Co-Creation Behavior***

Value co-creation centers on the notion of the formation of a relationship between customers and suppliers, based on the exchange and combination of resources and depends on their behavior toward a common process to co-create value (Vargo and Lusch, 2008). Hakansson and Snehota (1995, p.39) defined a relationship as "mutually oriented interaction between two reciprocally committed parties". The relationship creates interdependence and becomes an essential mechanism for organizations' development (Hakansson, 2003). Customers become a central actor in the process of value co-creation. They develop a participative process as they engage in practices and with companies to achieve desired goals (Payne et al., 2008). During the development of business relationships, companies' behaviors lean toward an agreed decision to manage their resources and interdependencies to ultimately co-create value (Guercini et al., 2014).

As SD logic mandates interaction and service exchange coordination, it becomes apparent that these actions require certain behaviors from customers. These behaviors cannot follow a common pattern but depend on the context and type of relationships that the parties want to develop. Value co-creation behavior refers to customers' active participation in the creation of value through their own experiences (Gronroos and Voima, 2013) developed by using products and services (Gong et al., 2016). Thus, value co-creation behavior becomes a concrete construct (in contrast to the abstract value co-creation process) focusing on shaping customer behavior during integration while understanding customers' communication and interaction in the exchange of resources process (Laud and Karpen, 2017).

Compatibility and complementarity are essential factors for a successful 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 describe partner complementarity. The similarity of the company's structure, culture, and policy characterizes partner compatibility, which promotes understanding, communication, exchange of knowledge,



and thus the optimal performance of involved actors (Chang et al., 2020; Lew et al., 2019; Tsou et al., 2015; Gummesson and Mele, 2010; Mitsunashi and Greve, 2009).

From the customer perspective, co-creation can be achieved through two types of behavior: participation and citizenship (Yi and Gong, 2013). The first one refers to a requirement to achieve value creation, described as in-role behavior. In contrast, the second one refers to a voluntary behavior, described as extra-role behavior involving sacrifices from customers, which may impact firms' performance (Fowler, 2013; Yi and 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 and Gong, 2013).

The importance of in-role and extra-role behavior becomes more apparent as it creates the conditions for a more holistic approach to an organization's issues. The presence of unexpected behaviors can positively affect the people who work within an organization through guidance, motivation, the delegation of power, and the organization's wider operation and performance as better evaluation of opportunities occurs. Behaviors also enhance positive collaboration by understanding the work that needs to be done and the actions that need to be taken to get the job done. Consequently, the relations inside the organizations and the external environment (with external partners) are strengthened and improved. Because of the actors' participation, the foundations and conditions are created for preventing and handling organizational issues (Waseem et al., 2018).

Many scholars have addressed the significance of customer co-creation behavior. Navarro et al. (2016) found that customers' co-creation behaviors led to satisfaction. Customers' perceptions of and their identification with organizations (the essence of close relationships, which is commitment) fosters customer value co-creation behavior. Organizations' entrepreneurial orientation and logistic performance are also valuable predictors of value co-creation (Tuan, 2016). Supporting customer co-creation behavior generates loyalty (Kasnakoglou, 2016), providing that companies' management ensures that the necessary organizational capabilities have been developed (Martelo et al., 2013).

The concept of co-creation in the shipping sector is at an early stage, but research interest is growing. Forstroom (2005), through an in-depth interview, studied the buyer-seller relationship in the shipping industry and argued that value co-creation could take place if there is interdependence between the parties involved. Hammervoll et al. (2014), also using the interview methodology, examined two different types of co-creation, reciprocal and sequential, concerning offshore supply shipping companies and their suppliers based on geographical proximity. They concluded that companies adapt to their partner's conditions, while close geographical proximity creates value by promoting mutual knowledge. On the other hand, in a recent study, Garcia et al. (2019) concluded that companies are more reluctant to co-create value through resource and knowledge partnerships, which harms actors' whole network.

### ***2.2.6 Outcomes of Value Co-creation***

The co-creating value process has proven to offer several benefits to business relationships, such as maintaining long-term relationships (Lusch and Vargo, 2006) and building and maintaining customer loyalty (Leppiman and Sane, 2011). It enhances companies' innovation and development because it creates new knowledge (Akaka et al., 2012). Value co-creation becomes a significant source of competitive advantage for companies, as suppliers and customers, through the interaction, experiences, and commitment of stakeholders, who create the foundations for new knowledge that enhances decision-making by expanding the exploitation of new opportunities (Ramaswamy, 2009).

Based on the context of service ecosystems, Beirao et al. (2017) concluded that value co-creation outcomes on micro, meso, and macro-levels could be distinguished into well-being and system viability. According to their research, which was conducted using the method of interviews in public and private health care organizations the main benefits of co-creation of value at the three levels are the achievement of maximum quality of service, the acquisition of better experience from the provision of services, the achievement of efficiency and effectiveness and better use of resources. These effects are the result of good exchange of information and knowledge and the actions and behavior and the willingness of actors to cooperate.

### ***2.2.7 Measurement Instruments***

The concept of value co-creation developed in the last few decades. Low (2000) tried to highlight the importance that companies should give to factors that provide value to companies and improve their efficiency, was one of the first to create an index for value creation. According to this indicator, the factors determining value creation are innovation, quality, customer relations, management skills, alliances, technology, employee relations, and environmental and community issues. However, examining the factors in the financial sector and the aviation industry, he argued that each sector gives each factor a different weight. For example, in the aviation industry, employees and efficiency are the most critical factors that create value. At the same time, in the financial sector, it is alliances, human capital, and quality of management. However, most of the studies examining this concept are conceptual and focus on the theoretical framework, which, according to the researchers, requires further study (Leclercq et al., 2016, Neghina et al., 2015, Saarijärvi, 2012).

Nevertheless, studies have tried to measure value co-creation, with the majority using qualitative methods and far fewer using quantitative methods. Some scholars have linked value co-creation with capability theory. Marcos-Cuenvas and his colleagues (2016) conducted a study using the case study method, suggesting that value co-creation is an organizational capability itself but forced by sustained purposeful engagement. They further noted that not all organizations have the mechanisms to achieve value co-creation since factors, such as organizational culture, could render different results. Therefore, they propose a further examination of those factors on value co-creation.

Following the latest research trends, which suggest an uplift in the concept to a broader framework of service research, namely, service ecosystems, Beirao et al. (2017) conducted a study, using the case study method, to explore value co-creation in the service ecosystems from a multilevel perspective. Supporting the idea that value co-creation consists of three levels, (micro, meso, macro), they determined five value co-creation factors: resource access, resource sharing, resource recombination, resource monitoring, and governance/institutions generation.

As the conceptualization of value co-creation continues, some studies tried with quantitative means to measure it, though these studies measured parts or components of

value co-creation. An example is examining culture dimensions and the relationship of customer participation and customer and employees value creation. This study used a survey of both employees of organizations and their customers. It tested how their participation influenced value co-creation, having as moderator two dimensions of the Hofstede model, namely, power distance and individualism-collectivism. Still, value co-creation was measured through two other variables, economic and relational (Chan et al., 2010). In another study, value co-creation was measured through value co-creation activities. Using 174 questionnaires in companies located in China, the study explored the relationship between value co-creation activities and competitive capabilities with customers (Zhang and Chen, 2008).

Only recently has there been a significant attempt to create a survey, which covers value co-creation through its main elements, the value in use and co-production. This 23-item measurement is new, but it is the only one that provides a coherent overview of the concept and a useful tool for measuring it. This measure consists of two main dimensions: value in use and co-production. Each one has three sub-dimensions: experience, personalization, and relationship for value in use, knowledge, equity, and interaction for co-production (Ranjan and Read, 2016).

Given that co-creation of value highlights actors' roles and is based on the interaction between them through the exchange of resources, skills, and knowledge, several studies tried to examine value co-creation based on the behaviors developed actors to create value. Yi and Gog (2013) developed a measurement tool according to which value co-creation can be explained through two types of behavior, participation behavior, and citizenship behavior. Following this, in his research, Kasnakoglou (2016) showed that the actors' participation behavior enhances value co-creation. However, to be led to the achievement of the results, it is a fundamental precondition that all the actors participate equally and simultaneously. According to the author, value co-creation behavior consists of experience, the intensity of interaction, the relationship between the parties, and mutual learning.

## **2.3 Organizational Culture**

### ***2.3.1 Generally***

Organizational culture is a critical tool to define corporations' processes, behavior, and interactions (Theotokas, 2014, Allaire and Firsiroto, 1984, Luthans and Stewart, 1977). Every sudden, unexpected change influences the partial characteristics of organizations (internal and external), leading them to act differently to tackle these changes. Every organization has a purpose and sets goals aiming at the increase of performance and sustainable development. Several research studies have highlighted a further differentiation between organic – mechanistic companies and concluded that companies with an organic structure are more adaptive and adequate preparation for changes (Burns and Stalker, 2005; Coghlan, 2003; Van Muijen and Koopman, 1994). The reason for that is that a control-centered organizational structure characterizes mechanistic organizations, while organics are characterized by participation and knowledge sharing and stimulating organizational structure.

An adequate conceptual framework that helps to understand the relationship between organizations' differentiations to their environment is the contingency theory model. Contingency theory combines the classical theory of management, which sees organizations as closed-systems and only emphasizes the internal environment, with the theory of systems, which emphasizes the general environment within organizations' function and views them as open-systems (Theotokas, 2014). Contingency theory recognizes that organizations are unique and consist of subsystems, which interact with the external environment. An organization can be defined as "a social system consisting of subsystems of resource variables interrelated by various management policies, practices, and techniques which interact with variables in the environmental supra system to achieve a set of goals or objectives" (Luthans and Stewart, 1977).

From the above definition, one can notice that organizations comprise many different elements that must all be examined when someone studies the overall process of corporates' function. Allaire and Firsiroto (1984) conducted a study where they tried to identify all organizational culture concepts and provide a general concept that can be helpful in the examination of organizational culture. They conclude that corporations have three basic components: a sociocultural system- (including strategies and management processes), structures, and a cultural system- (including values, beliefs, norms, and individual actors). The relationship between them must be harmonious to have operational management of organizations to their internal and external environment.

However, the corporate culture is composed of subsystems (Lawrence and Lorsh, 1967): administrative, political, strategic, social, technical. The result is that any change in one of them has a direct impact on the firm's organizational behavior.

Organizational culture is the fundamental element of every organization, which determines how it operates and adapts through expected and unexpected changes in the environment. Business environment, leadership, management practices, socialization processes (internal-external), and change are factors, which influence corporate culture. Therefore, a thoroughgoing analysis of those factors concerning the environment of the organizations and their dimensions is essential to acquire a more comprehensive view of organizations' function.

### ***2.3.2 Definitions***

There are a vast number of scholars demonstrating the importance of organizational culture on businesses. They highlight it as the core of organizations as it shapes the overall business function and affects organizational outcomes. It is defined as a "set of values, assets, beliefs, and behavior patterns that form the core identity of an organization" (Denison, 1984, p.5). Deshpande and Webster (1989) defined it as "shared values and beliefs that help members of an organization understand organizational functioning and thus provide them with norms for behavior in the organization" (p.4). Later Mobley et al. (2005) defined organizational culture as "a set of values, principles, common perceptions, patterns of behavior and way of thinking, which are accepted and shared by all organization members". Jones (1983), in his article, supports that organizational culture is "a cognitive map that provides the selection mechanisms, values, and principles by which people define events, thus establishing the operational framework of organizations" (p.454). According to this logic, several scholars later moved on to define organizational culture as "shared, taken-for-granted assumptions that a group holds and determine how it perceives, thinks about and reacts to its various environments" (Schein, 1996, p. 236). Similarly, Hunt (1992) defined organizational culture as "beliefs, values, and attitudes that guide how members of an organization perceive and interpret events". Hofstede (1994) stated that organizational culture is "the collective programming of the mind which distinguishes the members of one

organization from another" (p.1), yet he also argued that "shared perceptions of daily practices should be considered to be the core of an organization's culture" (p.136).

The above definitions are based on the values, assumptions, perceptions, attitudes, and behaviors of people inside an organization. According to Demski and McCormick (2004), corporate culture is the perceptions and beliefs that form a business's foundation. It is those elements that are not visible but instead are based on the values, attitudes, and conditions that come from the collective experiences and the company's executives' mutual expectation. Those axioms are implicitly and mutually agreed upon among co-workers. Therefore, they are not visible. Instead, it is the sum outcome of all these characteristics together that distinctly defines organizational culture. As Schein aptly put it, organizational culture is like an onion consisting of layers, namely assumptions, espoused values, and artifacts. The more outward to the surface is, the more visible the culture is. Each one is dependent on the other and cannot be held separately (Cui and Hu, 2012). However, many would agree that corporate culture can be referred to as a set of values, beliefs, and behavior patterns that form the core identity of organizations and help in shaping the employees' behavior (Mobley et al. 2005; Demski and McCormick 2004; Otter and Heskett, 1992; Deshpande and Webster, 1989; Deal and Kennedy, 1982; Jones, 1983; Schein, 1992).

### ***2.3.3 The role of Organizational Culture in Organizations***

It is important to understand what organizations and culture are to capture the notion of organizational culture better. Organizations are systems functioning through people's collective effort toward specific goals, enabling people simultaneously to achieve personal goals that they could not if they were acting solely. Lawrence and Lorsch, (1967) defined an organization as "a system of interrelated behaviors of people who are performing a task that has been differentiated into several distinct subsystems, each subsystem is performing a portion of the task, and the efforts of each being integrated to achieve an effective performance of the system" (p.3). Aldrich (2008) defines organizations as "goal-directed, boundary-maintaining, activity systems" (p.4). Each organization is unique and provides a vast range of processes such as socialization, communication, decision-making, the formation of norms, goal setting, and attainment (Scott and Davis, 2015).

The first two schools that contributed to the development of organizational culture are anthropology and sociology. According to the first, culture refers to individuals' perspectives, based on language, symbols, and rituals. According to the sociological point of view, culture refers to groups, organizations, and societies where its main characteristics are the practices, beliefs, and values applied to them to maintain control. (Cameron and Ettington, 1998).

Organizational culture first came to light when it was realized that work output is not synonymous with employee effectiveness. Social, psychological, and subconscious dimensions affect the behavior of employees and, therefore, their efficiency. Over the years, exploration of organizational culture took different directions, and the concept was examined from various angles such as cognitive approach, corporate identity, emotions, teamwork, knowledge management, developing fertile ground for future research.

To understand organizational culture, it is important to take into account the activities and processes inside an organization in relation to human behavior on these activities and processes; otherwise, it is possible to come to false conclusions (Alvesson, 1985). Organizational culture is a critical tool to define processes, behavior, and corporations' interactions (Allaire and Firsirotu, 1984, Luthans and Stewart, 1977). Every sudden, unexpected change influences the partial characteristics of organizations (internal and external), leading them to act differently to tackle these changes.

Every organization has a purpose and sets goals that aim to increase its performance and develop sustainably. Several studies have highlighted in the difference between organic and mechanistic companies and concluded that companies with an organic structure are more adaptive and better prepared for changes. Mechanistic organizations have stricter controls and emphasize hierarchy. Organic organizations have more flexible control, and importance is given to discussion. The mechanistic type of organizations is suitable for stable environments, while organic organizations better suit unstable situations (Coghlan, 2004, Strachan 1997, Van Muijen and Koopman, 1994).

Organizations are viewed as societies in miniature, as people are subject to rules, norms, and behaviors that govern business organizations just as in broader society. In this way, the companies try to ensure their control and smooth operation. However, companies that have a mechanistic orientation are more rigid. In contrast, those that



facilitate and support the improvement of companies' broader performance, organizational change, and the development and optimization of management skills are companies that have an organic orientation (Perea et al., 2018; Coghlan, 2004; Courtright et al., 1989). The wider culture in both the micro and macro environment is gradually cultivated (Zahra et al., 2020; Erez and Gati, 2004; Presthus, 1958). This contention attaches greater importance to the exploration of culture, especially in the context of the globalized business environment.

Culture can be seen at national, regional, and organizational levels. Simultaneously, some subcultures can be created at any of the above levels, which may affect organizations' primary culture. Although the organizational culture focuses on companies' internal characteristics with an emphasis on human resources, it is important to identify how it is created. According to studies, the organizational culture is founded by the founders of the companies, as it reflects the founders' vision based on their principles, philosophy, and ideas. Based on these characteristics, the orientation of labor relations and decision-making is determined (Hinteregger, 2017; Schein, 1995). These values, therefore, determine how companies conduct their business activities (Barney, 1986) but also how employees conduct their internal operations and their external collaborations by creating relationships between companies- and suppliers (buyer-supplier) (Schilke and Cook, 2015).

Due to many political, economic, and technological reasons, people have been forced and enabled to work, communicate, and collaborate with companies and people of different nations and cultures. The emergence of multinational and multicultural companies paves the way for a more careful and thorough study of organizational culture's element on those companies, contributing to their existence, success, or failure. Trefry (2006), in her conceptual study, argues that national culture undoubtedly influences organizational culture, which makes organizational culture more critical when referring to multicultural organizations and among employees of different cultural backgrounds. Based on studies by Hofstede (1997) and Klepper (1999), who found that national culture influences and modifies organizational culture, Trefry (2006) supported the idea that the main difference between national and organizational culture is that the former emphasizes more on values while the latter on practices.

### ***2.3.4 Dimensions of Organizational Culture***

Based on the multidimensional nature of organizational culture, several scholars have attempted to highlight organizational culture dimensions. Depending on the level of reference, culture can be characterized by power distance, uncertainty avoidance, individualism, or masculinity (Hofstede, 1980). Conversely, the organizational culture could be interactive, systematized, integrated, or entrepreneurial (Ernest 1985). Or it might be paranoid, avoidant, charismatic, bureaucratic, or politicized (Kets deVries and Miller, 1986).

There are many categorizations of organizational culture depending on the aim of each study. Many scholars have tried to identify the dimensions of organizational culture. In their early work, Deal and Kennedy (1982) suggest that organizations could develop four types of culture based on two dimensions of risk and feedback speed. According to them, an organization that takes risks but has successful results has a 'tough-guy' culture. Organizations that face long-term uncertainty and have to make careful decisions have a 'bet your company' culture. Organizations with low risks can have either a 'work hard/pay hard' culture or a 'process' culture emphasizing motivating and details, respectively.

Notwithstanding the most prominent categorization of organizational culture dimensions are that of Cameron and Quinn (1983), Cameron and Ettington (1988), who categorized culture to the clan, adhocracy, hierarchy, market cultures, Schein (1985), who saw three levels of cultures, artifacts, espoused values, and underlying assumptions, and Denison et al. (2014), who in his study of organizational culture and organizational effectiveness identified four traits: involvement, mission, consistency, and adaptability, each one consisted from three subcategories. In their study, Denison and Spreitzer (1991) adopted the categorization of the group, developmental, hierarchical, rational culture (Gambi et al., 2015; Prajogo and Mc Dermott, 2005). This categorization can be seen as clan, adhocracy, hierarchy, and market cultures (Willar et al., 2016).

The above arrangement, also known as the competing value framework, distinguishes between the structural, stability-flexibility, and internal-external foci of businesses. Group culture has an internal focus and emphasizes flexibility and change. Organizations characterized by a group culture tend to promote participation, teamwork, cohesiveness. The hierarchical type of culture also has an internal orientation but focuses

on stability. Control, order, rules, coordination, uniformity are characteristics of a hierarchical culture. On the other side, organizations' external focus can be described by either developmental or rational culture. Organizations with a more developmental culture are characterized by change, adaptability, and risk-taking, while those with a rational culture are characterized by success, competitiveness, productivity, and achievement (Gimenez-Espin et al., 2013; Cho et al., 2013; Denison, 1991).

Nevertheless, each business is distinguished based on its tangible and intangible elements. The former includes financial and physical elements and objects, while the latter include the human resources, corporate culture, strategy, and the goals of each organization. Organizations' intangible elements have the characteristics of VRIO, meaning that they are useful (valuable), rare, difficult to imitate, and adequately organized (Klein, 2011). The above reinforces the intangible nature of corporate culture, combined with the fact that it is unique to each business, which is confirmed by its dimensions, as described by Flamholtz (2001), Flamholtz, and Narasimhan-Kannan (2005), and Flamholtz and Randle (2012). These dimensions are the customer-client orientation, orientation toward employees, standards of performance and accountability, innovation and/or commitment to change, and process orientation. However, according to Klein (2011), the dimensions of corporate culture through which organizations meet the ever-increasing competitive environment requirements are divided into two categories: internal – external dimensions and flexibility- control dimensions.

Based on Klein's distinction, organizational culture is divided into three types: human values, open systems values, and internal process. Organizational culture focused on human values, promotes cohesion, participation, and morale among employees. This is achieved through training, human resource development, employee communication, and their participation in decision-making, which leads to a long-term commitment to the organization. An organizational culture focused on open systems values, prizes qualities, such as development through adaptability, change, readiness, and flexible decision-making process. An organizational culture focused on the values of internal processes, emphasizes information management, communication, and making decisions using primary data. The Denison's dimensions can be related to this categorization, specifically, involvement (including empowerment, team orientation, and capability development) can be part of the human values category while in the open systems' values,

the values of cooperation and integration can be included. Meanwhile, in terms of internal processes, change, customer orientation, organizational learning, vision, strategy, and goals are included.

Moreover, cross-cultural and management studies laud Hofstede (1980) and Trompenaars (1998) because they highlighted characteristics of national culture, such as values and beliefs, that strongly impact organizational culture (Klein et al., 2009). Hofstede (1993) believed that organizational culture is strongly related to national culture and urged researchers to study them simultaneously to gain a deeper understanding of organizational culture. Many other scholars later followed his opinion (Kattmann, 2014; Gatti and Erez, 2004)

Hofstede (2011) tried to identify dimensions of culture interviewing employees from over 50 countries, and he concluded the following classifications:

- power distance, related to the different solutions to the basic problem of human inequality;

- uncertainty avoidance, related to the level of stress in a society in the face of an unknown future;

- individualism versus collectivism, related to the integration of individuals into primary groups;

- masculinity versus femininity, related to the division of emotional roles between women and men;

- long term versus short term orientation, related to the choice of focus for people's efforts: the future or the present and past.

- Indulgence versus Restraint, related to the gratification versus control of basic human desires related to enjoying life.

Trompenaars (1996) suggested seven dimensions: universalism versus particularism, individualism versus communitarianism, neutral versus emotional, specific versus diffuse, achievement versus ascription, sequential versus synchronic, internal versus external control. Nevertheless, both have been criticized, but they remain pioneers of cross-cultural examination (Hofstede, 2011).

### ***2.3.5 Measurement Instruments***

There are many measurement instruments for organizational culture. Many scholars have tried to develop instruments, which will best measure the concept of organizational culture. However, as with every other construct, it is important to consider the context under examination because it should not be assumed that every instrument applies to every organizational aspect (Jung et al., 2009). The most widespread quantitative instruments are the competing value framework (CVF) developed by Quinn and Spreitzer (1983), which consists of four dimensions (clan, adhocracy, market, and hierarchy) and the Hofstede model, which distinguishes four dimensions (power distance, uncertainty avoidance, individualism, and masculinity).

According to Gambi et al. (2015), one measurement tool for quality management systems and organizational culture is the personal, customer orientation, organizational and cultural issues model, developed by Maul et al. This model was derived from Hofstede's (1980) work which distinguished four elements: cultural, people outcomes, customer orientation, and organizational issues, which make up climate. The concept of organizational culture profile was developed to assess person-culture fit, that is assessing aspects of persons and culture. The original measurement consists of 54 items; however, those are limited to 26, and it can also be used to measure group-level phenomena (O'Reilly et al., 1991). Recently a study examined how organizational culture is related to psychological distress, depression, emotional exhaustion, and well-being. They collected data from 1,164 employees in different sectors, manufacturing, services. In that research, apart from the support of their hypothesis, they used two constructs in order to measure organizational culture, namely, organizational culture profile and competing value framework, as they also tried to explore if those two constructs could have an association. They concluded that the organizational culture profile instrument could be conceptualized in terms of the four dimensions of competing value framework. Finally, they argue that different cultures have different organizational outcomes; thus, they propose further research, especially on organizational cultures in different countries (Marchand et al., 2013).

### ***2.3.6 Significance of Organizational Culture for Organizational Outcomes***

The importance of organizational culture is understood because it highlights employees' behavioral and psychological aspects, and consequently, the whole

organization, such as working relationships, a sense of belonging, and participation, which are important for efficiency and effectiveness. It is the cornerstone of business management practices (Braunsheid et al., 2010). Organizational culture highlighted the interest in managing human resources and the importance of aligning with leadership style, vision, and organizational practices for organizations' smooth operation.

Studies using Hofstede's typology confirm interrelationship between national culture and organizational culture. They found that national culture and organizational culture depend on each other, and both influence organizational outcomes. However, as they suggest following Hofstede's allegation, national culture is difficult to control, organizational culture. On the other hand, has room for change as it depends on top executives' discretion (Erthal and Marques, 2018; Pothukuchi et al., 2002)

Many researchers have recognized the importance of organizational/corporate culture in management and marketing, as it covers all aspects of working life (Alvesson and Sveningsson, 2015; Schein, 1990, Desphande and Webster 1989). Business environment, leadership, management practices, socialization processes (internal-external), and change are factors, that influence corporate culture (Yaeger et al., 2006). More specifically, the business environment in which an organization operates receives influences directly related to the formation of the corporate culture. Leadership has a formative role in employee behavior as it is an incentive to achieve goals. The main responsibility of the leadership is to share the vision both inside and outside the organization. At the same time, it must mobilize and inspire its employees for this purpose. Management practices and socialization processes; the process of planning, budgeting, organizing, controlling, crisis management, and staffing of the organization is important in instilling the core values and principles of the organization in the employees. Internal socialization (informal socialization process) is a necessary factor for the proper functioning of parts of the organization, as any complication affects it. Changes include changes that can occur both inside and outside the organization, such as the growth of entrepreneurship, the adoption of customer or market orientation, and profit, which are affected by unforeseen events. Changes related to behavior, values, and patterns can also have negatively effects (Schein, 2001).

Organizational culture is found to influence organizational performance (Tan, 2019; Krajcsak, 2018; Chui et al., 2012; Xiaoming and Junchen, 2012; Lo et al., 2012; Denison, 1984), commitment (Rashid et al. 2003), organizational effectiveness (Gochhayat et al., 2017; Gregory et al., 2009), organizational change (Smollan and Morrison, 2019; Arif et al., 2017), organization's competitive advantage and sustainability (Tsai et al., 2013, Barney, 1986), behavior and communication (Nasser and Jais, 2020; Lee, 2020; Tampubolon and Harati, 2019; Velliquette and Rapert, 2001), and quality management (Alofan et al., 2020).

Rashid et al. (2003) conducted a study on 202 Malaysian companies and examined the role of organizational culture, organizational commitment, and performance. Using competitive, entrepreneurial, bureaucratic, and consensual types of culture and affective, continuance, and normative types of organizational commitment, they found that certain organizational culture types affect some types of organizational commitment, which influence organizational performance. Companies should first define the type of culture that characterizes them to motivate their human resources to enhance the specific type of commitment that best suits maximizing performance. Sorensen (2002), in his research on companies from 18 markets, argued that companies with a strong culture could enjoy more privileges and better exploit their capabilities by achieving better performance. Moreover, companies with strong cultures can alleviate the differences among their employees to achieve better consistency and better understand the aims and objectives of the companies, which ultimately helps achieve better performance. However, even if these organizations can perform better, they do not always realize the need to adapt to the changing environment that affects organizations' functioning with implications for effective communication, coordination, and control.

On the contrary, due to their shortcomings, companies with weaker cultures are always trying to survive and realize the need for change more quickly. Based on these results, Sorensen (2002) proposes further investigating the role of culture in companies operating in dynamic and changing environments. It also suggests exploring the characteristics that drive some companies with strong cultures to be more effective than others.

Carmeli and Tishler (2004), used a sample of 95 companies in Israel, to examine the variables that affect companies' performance. Focusing on resource based view theory, their results showed that the most important factors for gaining competitive advantage and higher performance are companies' reputation, managerial skills, and organizational culture. However, later research by Lo et al. (2012) examining 228 hotel companies in China argued that these companies' performance is not affected by the organizational culture and managerial competencies. On the contrary, they found that customer satisfaction is significantly affected by managerial capabilities and enhances organizational performance.

A key feature of organizational culture is its influence on decision-making, behavior, and communication within and outside organizations. Although the principles, beliefs, and advocacy of a corporate culture come from an organization's founders or leaders, who influence decision-making (Van Muijen and Koopman, 1994). This is because managers within companies need to consider the principles, goals, and objectives of companies based on corporate culture to make decisions for the benefit of companies. In their literature review on organizational culture, Veliquette and Rapert (2001) stated that organizational culture affects the entire communication network, plus and behavior inside and outside of an organization, as well as overall performance. They suggested further research into the role of organizational culture on strategy and company partnerships.

The influence of organizational culture on employee and organizations' behavior, was mentioned by O'Neill et al. (2001). In their view, employee and organizations' behavior is guided by the organization's structure and culture to cope with information uncertainty and equivocality. They perceive organizations' structure and culture as mechanisms that guide employees' behavior and, therefore, organizations to cope with organization's operational mode determined by task complexity and geographical dispersion (between employees and departments). Task complexity refers to the skills and knowledge that employees must have, while geographical dispersion refers to the distribution of individuals and departments within organizations. It is argued that organizations operating in more than one country have a greater geographical dispersion, making it difficult to maintain control and coordination of both staff and operations between departments. O'Neill et al. (2001) further propose a framework, corresponding



to the competing value framework, divided into two axes: the vertical, where they define the complexity, and the horizontal, which define geographical dispersion. Organizations can be defined depending on the structure and culture: bureaucracy (related to mechanistic organizational form), adhocracy (related to organic organizational form), cosmopolis, and clan. Nevertheless, they note that a strong culture is necessary for organizations that have to deal with employees, customers, and partners' diversity.

Given that organizational culture influences and shapes employees' attitudes and behaviors, and consequently, organizations, it is a logical consequence of its influence on practices that organizations seek to follow to improve their performance and increase competitive advantage. Examples of practices may be organizational issues such as the selection of employees and partners (Botelho, 2020; Prince et al., 2019; Aman et al., 2018) or even the adoption of quality management systems (Sousa, 2019).

A survey of 194 companies in Australia investigated corporate culture types that contribute to the successful implementation of total quality management practices. Using the competing value framework, the group culture type is the most efficient, and the hierarchical type of culture is not found to have any positive relationship. In another study on the influence of corporate culture types in the quality system ISO 9001: 2008, the group type of culture was deemed the most effective for proper and successful implementation. However, it was noted that the companies surveyed, 77 companies in the construction sector in Indonesia, were not found to have a single dominant culture type. Corresponding to the above is Knapp's research, which surveyed 223 hospitals in Massachusetts of the types of corporate culture that best influence the application of Lean Six Sigma practices. Using the competing value framework typology, he concluded that the most efficient type of culture is group, followed by the developmental one. However, the hierarchical and rational type of culture was not found to have any positive interaction with Lean Six Sigma practices.

Regarding the choice of the companies and their associates' workforce, it proves that the organizational culture plays an important role. Companies need to select employees and partners who will be able to align with companies' principles and values so that they can meet their requirements. Successful partnerships require that the parties be able to understand the needs and communicate with each other in order to meet their

objectives. For this reason, it is considered important for successful cooperation to have compatibility between companies in terms of their corporate culture (Schiele et al., 2012), thus enhancing parties' attractiveness and satisfaction (Kunde, 2018). Otherwise, incompatibility can lead to negative consequences for management and decision making (Kuntz et al., 2013). Ghauri and Rosendo-Rios (2016), studying the impact of cultural differences on the relationship between private and public organizations, report that cultural differences affect this relationship and if not addressed properly can harm communication, information dissemination, flexibility, reliability and commitment of partners.

Despite the vast number of studies examining organizational culture, it remains number one factor under consideration when referring to business. Thus, there is a new area of interest that connects organizational culture and cultural intelligence, which is introduced recently to human resource management (Kang and Sung, 2017).

## **2.4 Cultural Intelligence**

### **2.4.1 Generally**

The complex and dynamic environment in which companies operate has changed the way businesses are organized and run. The shipping industry is inherently global, but continuous developments mean companies must constantly evolve and adapt to new information and challenges. A key issue that all companies are faced with in their partnerships is the management of diversified individuals, groups, and companies, who have different perceptions, norms, values, mentalities, and languages. Addressing this diversity is essential for companies' efficiency and survival, especially in the shipping industry, where the human factor and collaborations around the world are vital.

Companies can cope with this is by developing or enhancing their ability to function effectively and efficiently in different cultural environments in short, by increasing their cultural intelligence. The concept of cultural intelligence has attracted scholar's interest in recent years. The multicultural environment in which corporations are forced to function calls for a more careful approach to diversity both individually and organizationally. Diversity at the individual, team, and organizational level can have negative consequences if not appropriately addressed, such as misperceptions,

miscommunication, increased tension, conflicts, mistrust, process loss, and lower psychological commitment (Chen et al., 2012). A lack of knowledge about other peoples' cultures can give rise to xenophobia and miscommunication (Sharma and Hussain, 2017). There are few multi-paradigmatic studies of culture in international business (Patel., 2017).

### **2.4.2 Definitions**

The emergence and exploration of the concept of cultural intelligence is a relatively recent venture. The last decade has seen increased interest in this concept. The increase of employee immigration, the rise of multinational corporations, and the subsequent attention paid to cross-cultural management justify the appearance of the cultural intelligence construct.

Cultural intelligence is a person's ability to successfully adapt to new cultural settings, that is, for unfamiliar settings attributable to cultural context (Earley and Ang 2003, p. 9). Andresen and Bergdolt (2017) described cultural intelligence as "the capacity to function effectively within environments that are characterized by high cultural complexity" (p.187). Thomas et al. (2008) defined it as a system of interacting knowledge and skills, linked by cultural metacognition that allows people to adapt to, select, and shape the cultural aspects of their environment. Cultural intelligence has also been defined as "multifaceted competency consisting of cultural knowledge, the practice of mindfulness and the repertoire of behavioral skills" (Thomas and Inkson, 2004, p.182-183). Peterson (2004) described cultural intelligence as "the ability to engage into a set of behaviors that use skills, language or interpersonal qualities (tolerance to ambiguity, flexibility) that are turned appropriately to the culture-based values and attitudes of the people with whom one interacts" (p.89). Livermore referred to cultural intelligence as "the mental, motivational and behavioral capabilities to understand and adapt effectively to varied situations and environments" (p.25).

Based on the definitions above, and according to Van Dyne et al. (2010), cultural intelligence is a set of competencies and capabilities, that facilitate the interpretation of unfamiliar behaviors and situations in diverse cultural environments and assist individuals to perform effectively within them (Ang and Van Dyne, 2007). Individuals (as well organizations) should have the ability to adjust to any new environment. This

adjustment involves a set of capabilities and processes that come from the institutional effort on the leader's part (Van Dyne et al., 2010).

### ***2.4.3 Origins and Dimensions of Cultural Intelligence***

Cultural intelligence has a multidimensional structure designed to explore the function of the individual in different cultural environments. Its lens lies in the concept of general intelligence originating from Sternberg and Detterman's (1986) framework of intelligence's multiple foci. As Sternberg (1997, p.1030) sets out, "intelligence comprises the mental abilities necessary for adaptation to, as well as shaping and selection of, any environmental context". Intelligence in a broader sense can be defined "a corporate capability to forecast change in time to do something about it. The capability involves foresight and insight, and is intended to identify impending change, which may be positive, representing opportunity, or negative, representing a threat." (Breakspear, 2013, p.688). Based on the above, intelligence is defined as the necessary capability to adapt to an environmental context (Thomas et al., 2015).

Cultural intelligence differs from other forms of intelligence, exceeding the traditional notions of IQ (Intelligence Quotient), social Intelligence (referring to the ability to adapt and interact effectively with others), and emotional Intelligence (referring to the ability to understand the emotional state of others and to adapt his feelings and to provoke reactions in order to interact effectively with others) (Ang et al., 2007; Earley, 2002). As Van Dyne et al. (2003) quoted, cultural intelligence's main difference is that it focuses specifically on culturally diverse interactions. Cultural intelligence complements other forms of intelligence (Van Dyne et al., 2012).

According to the literature, there are two existing cultural intelligence approaches (Ng and Earley, 2006). The first one argues that intelligence is impacted by culture and context. Thus, it differs across different cultures. This opinion is supported by scholars who believed that intelligence could not be seen separately from one's general background, or how one was nurtured (Berry, 1974; Sternberg, 1985; Ferguson, 1956). The other approach is concerned with how individual differences support adapting to new cultural settings (Thomas and Inkson, 2004; Earely and Ang, 2003; Earley, 2002).

To tackle managerial and organizational issues stemming from the culturally diverse workforce, Ang and Earley (2003) concluded a four-factor cultural intelligence model. They suggest that dimensions of cultural intelligence are metacognition, cognition, motivation, and behavior. Metacognition refers to the process individuals use to acquire and understand knowledge (Ng et al., 2012). It is the knowledge individuals have about their own culture and how they believe they can handle this knowledge and adapt it to function properly in different cultural environments (Ang and Van Dyne, 2008). Cognition refers to an individual's knowledge about others' culture (norms, values) (Chao et al., 2016). It helps individuals distinguish between differences and observe similarities among cultures, thus enhancing the ability to adapt and interact with others (Earley, 2002; Ang and Van Dyne 2008). Motivation refers to individuals driving forces to acquire and maintain knowledge which assists adaptation and affective function in diverse cultural settings (Ang and Van Dyne, 2008). Behavior refers to the knowledge of appropriate behavior for handling individuals and groups of different cultures (Earley, 2002; Ang and Van Dyne 2008).

Van Dyne et al. (2012), based on the above dimensions, proposed sub-dimensions for each of the framework's facets. Specifically, for metacognition, they distinguished three processes occurring before the interaction (planning, the current state of mind, awareness) and one during the interaction (checking). Cognition consists of general and contextual knowledge. Motivation can be characterized by intrinsic, extrinsic, and self-efficacy to adjust. Finally, behavior is distinguished by verbal, nonverbal, and speech acts. Livermore (2010) described the above dimensions as cultural intelligence, drive, knowledge, strategy and action.

#### ***2.4.4 Drivers and Outcomes of Cultural Intelligence***

Cultural intelligence can be considered an important means by which individuals can navigate different cultural environments and situations. The factors that enable cultural intelligence are big five personality traits (cultural exposure, training, education), international experience, individual differences (personality, self-efficacy, openness to experience, agreeableness, extraversion, calmness), leadership styles, training, and language ability, multicultural team exposure and performance (Sharma and Hussain, 2017; Ng et al., 2012; Ang and Van Dyne, 2008; Ng and Earley, 2006).

These influencing factors have support from other scholars too. Considering language ability, Presbitero (2017), using a survey of 130 employees, found that cultural intelligence is positively correlated to language ability, which affects performance as he points out, though, when examining the relationships of language ability and task performance, cultural intelligence mediates that relationship. Individuals' linguistic ability gives them the advantage of better understanding the culture of others as it helps them think and act based on different cultural criteria and values. However, while language proficiency can be assessed by individuals themselves as a qualification, the effectiveness it brings in interacting with others can be assessed by others. That is why people's ability to socialize with other people from different cultural backgrounds helps to develop skills and behaviors that allow them to interact effectively (Shannon and Begley, 2008). Groves et al. (2015) conducted a study in which cultural intelligence, process, and negotiation outcomes were examined. They argued that personality traits such as openness to experience, extraversion, and emotional intelligence are significantly and positively related to cultural intelligence. That research is consistent with an earlier study that explored the role of individual differences of people in the process of negotiation. In that study, which was conducted with 236 individuals from East Asia and America, it was found that people with higher cultural intelligence are more cooperative and have a better understanding of their surroundings than people with lower cultural intelligence (Imai and Gelfand, 2010).

Referring to international experience, it has been shown that it influences cultural intelligence. In the absence of the latter, adjusting to a foreign environment proves to be difficult and causes feelings of rejection and anxiety (Chao et al., 2017; Buckner et al., 2015). Studies on international experience and cultural intelligence have shown that individuals with previous international working, non-working and educational experience abroad gain a better understanding of the culture and values of the place they are in and shape attitudes and behaviors that enable them to function effectively in different cultural environments (Frias-Jamilena et al., 2019; Crowne, 2008). Moreover, the existence of a prior international experience, especially professional, implies curiosity and risk-taking to adapt to new environments, motivating people to undertake projects abroad more readily (Shannon and Begley, 2008). However, although experience seems to be an important driver of cultural intelligence, research has shown that the time acquiring these experiences also plays an important role. More specifically, Tarique and

Takeuchi (2008) showed that short business or non-business trips significantly enhance cultural intelligence compared to a long stay in a place. This may be because people who choose to move in place for a long time tend to cling to groups and individuals of the same cultural background, thus reducing the chances of integrating into the new cultural environment and understanding diversity.

Individuals who seek to enhance their cultural intelligence enjoy long-term benefits to an individual and professional level. Studies have linked cultural intelligence to several organizational and non-organizational outcomes, such as performance (Chao et al. 2016; Chua, et al., 2012; Imai and Gelfand, 2010; Oolders et al., 2008), expatriation, training, global leadership, and education (Chen et al., 2010; Crowne, 2008), psychological well-being, adjustment, global leadership (Rockstuhl et al., 2011), cultural adaptation, task performance and decision-making (Ang et al., 2007).

Cultural intelligence is a set of skills that helps in the efficient and effective harmonization of individuals, groups, organizations with the environment in which they operate. That means they have the ability to perceive, understand and adapt to different cultural environments. This process allows them to make better use of the information they receive and to lead to safe and sound judgments and decisions to be made while enhancing their flexibility and adaptability. The research of Ang et al. (2007) strengthens the above aspect. They examined the influence of cultural intelligence on decision-making and cultural adaptation, using a questionnaire on a sample of US and Singapore undergraduates. They supported that the metacognitive and cognitive dimension of cultural intelligence positively influences decision-making, while motivational and behavioral positively affect cultural adaptation.

Cultural intelligence is found to be linked with negotiation outcomes and processes. To this end, it also significantly contributes to peoples' receptivity to experiences and their degree of emotional intelligence. Individuals who have a high degree of cultural intelligence have a better sense of the environment in which they work in and a keener desire to cooperate (Groves et al., 2015; Imai and Gelfand, 2010). Cultural intelligence contributes to the successful outcome of negotiations. Negotiators with high cultural intelligence tend to treat their partners with more empathy, are more conciliatory, more

open-minded, and skillfully deal with conflicts that may arise in the process, to the benefit of both parties (Chen et al., 2010).

Cultural intelligence is positively linked with performance. For example, high metacognitive cultural intelligence and high behavioral cultural intelligence lead to better understanding and role expectations, while motivational cultural intelligence positively predicts job performance mediated by work adjustment (Chen et al., 2012; Ang et al., 2007). Presbitero (2017), using a survey of 130 employees working in a call center, found that cultural intelligence is positively correlated with language ability, which impacts task performance. A quantitative study of 815 Korean employees examined the relationship between cultural intelligence, transformational leadership, and job performance. They found that employees increase their performance when positive attitudes and support for a common goal are recognized and pursued by both parties (leaders and employees) (Nam and Park 2019).

Cultural intelligence enhances effective communication, which helps people's interactions with different cultural backgrounds (Chen et al., 2010). Nevertheless, research examining the relationship between cultural intelligence, efficiency, and culture shock has shown that language ability (which enhances communication) increases the sense of culture shock that people experience in foreign environments, negatively impacting their job performance (Chen et al., 2011).

Based on the above, it can be inferred that cultural intelligence has a positive impact on outcomes, as distinct from cognitive outcomes, which are cultural judgments and decision-making, (meaning, for example, the quality of decisions regarding intercultural interactions). Another example is that cognitive and metacognitive cultural intelligence predicts managers' perceptions of cross-border environmental uncertainty (Prado, 2006). Psychological outcomes can be distinguished from adjustment problems (cultural, general, work, interaction, and psychological), emotional exhaustion, and interpersonal trust. Behavioral outcomes, such as the ability to speak easily, and share ideas, in intercultural ties increase and affect trust, as well as performance outcomes.

#### ***2.4.5 The Emergence of Organizational Cultural Intelligence***



People's ability to handle cultural differences can be a significant and valuable asset within the globalized business environment. Employing cultural intelligent personnel can be a source of competitive advantage for multinational corporations. Few studies, however, have studied cultural intelligence at a higher organizational level. As with cultural intelligence at the individual level, organizational cultural intelligence can be seen as a dynamic organizational capability. Teece et al. (1997) defined dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (p.516). Organizational cultural intelligence can be defined as "an organization's capability to function effectively in culturally diverse environments" (Lima et al., 2016, p.13). Organizational cultural intelligence facilitates effective management of cultural diversity within the organization as well as cross-cultural environments in which the organization engages, and it may assist firms to gain and sustain their competitive advantage (Moon, 2010; Lima et al., 2016). Moon (2010), based on Earley and Ang's conceptualization (2003) and the theory of dynamic capabilities (Teece et al., 1997), proposed that organizational cultural intelligence consists of three factors: path (referring to the company's experience and strategy), process (referring to the process of coordinating and combining the company's activities), and position (referring to the company's assets). He supports that organizational cultural intelligence enhances cultural adaptation and teamwork (Moon, 2010). Following this theoretical framework, Yitmen (2013) examined the relationship between organizational cultural intelligence and strategic alliances in the construction industry. Using a sample of 135 organizations, the author stated that the three organizational capabilities- process, path, and position- positively and significantly influence an organization's cross-cultural competence and international strategic alliances. His findings support the notion that the greater the abilities to coordinate and combine activities, the stronger the ability to interact effectively with others from diverse environments, thus establishing solid international strategic alliances.

Organizational cultural intelligence has been proven to affect task performance, export performance, and negotiation outcomes. Chen et al. (2012) conducted a study within the real estate sector, examining how one component of cultural intelligence, namely motivation, is related to employee cross-cultural task performance. They examined individual motivational cultural intelligence variables, including firm motivational cultural intelligence, firm diversity climate, and cultural sales (defined as

the number of sales transactions, involving clients/agents from cultures who differed from an employee's own culture). The results illustrated that motivational cultural intelligence is a strong predictor of cultural sales and that firm motivational cultural intelligence acts as a moderator in the relationship between individual motivational cultural intelligence and cultural sales. Charoensukmongkol (2016), examined the role of managers' (or owners') cultural intelligence on export performance on small- and medium-sized enterprises in Taiwan. He found that owners' ability to learn from and adapt to different cultural environments enhances the organizations' export performance. Owners' cultural intelligence impacts the organizations' ability to understand and stay up to date with international markets and to adjust their strategy to meet customer requirements, thus leading to better export performance (Charoensukmongkol, 2016). The ability to interact with people from different cultural backgrounds and function in different cultural environments comprises the ability to accept ambiguity (tolerance for ambiguity); the ability to adapt to others behavior, requirements, and situations (behavioral flexibility); the ability to recognize different linguistic conventions and possess the necessary language skills for intercultural communications (communication awareness); the ability to learn from different cultures and use this knowledge properly to interact (knowledge discovery); the ability to be curious and open-minded (respect for others); and the ability to understand why other people behave and think the way they do (empathy) (Yitmen, 2013). Cultural intelligence helps people build interpersonal trust with people from different cultures. Therefore, they are better able to manage conflicts. At a team level, cultural intelligent employees develop integrated information management behaviors, which lead to better collaborations that offer value to all stakeholders (Imai and Gelfand, 2010).

The importance of exploring organizational cultural intelligence was echoed by other scholars (Triandis, 2006; Earley, 2002), especially as organizations' strategy, structure, and culture are important drivers of organizational cultural intelligence. In his work, Triandis (2006) claimed that cultural intelligent individuals choose organizations based on their personality and that company culture has a significant role in enhancing cultural intelligence. Specifically, he contended that individuals in collectivist and individualistic cultures have different behaviors and perceptions. Consequently, people divided into allocentric or idiocentric (differentiated based on social and economic criteria, as well as on criteria based on education and experience) behave differently

according to the situation and their organization's culture. Culturally intelligent people emphasize the ability to gather and recognize information relevant to their situations/problems, giving them the tools to make better decisions. Thus, people who can understand different cultures have more and better chances of improving their interpersonal relationships inside the organization and engaging in behaviors that foster the organization's performance and efficiency. Unsurprisingly perhaps, they also enjoy job satisfaction. The influence of organizational cultural intelligence on job satisfaction has also been supported by Bückner et al. (2014). They examined the relationship between cultural intelligence, job satisfaction, and effective communication taking into account anxiety among multinational enterprises (MNEs) in the service sector. Using a sample of 225 MNE managers in China, they found that cultural intelligence impacts job satisfaction positively and strongly, while also enhancing effective communication. However, when the anxiety variable entered the relationship it was found that the higher the managers' anxiety the higher their job satisfaction (Bückner et al., 2014). This finding is interesting considering that cultural intelligence is negatively related to anxiety, meaning that managers with high cultural intelligence should experience low anxiety levels.

Cultural intelligence has gained traction among the academic community as the concept offers importance and deeper insight into individual cross-cultural differences. However, little research has attempted to conceptualize intercultural competencies at the organizational level (Moon, 2010; Ang and Inkpen, 2008). Researchers, in an attempt to extrapolate the concept, called for further research on higher levels (Sharma and Hussain, 2017; Van Dyne et al., 2012; Ng and Earley, 2006; Earley, 2002), while some have contributed to building a framework for understanding organizational cultural intelligence (Yitmen, 2013; Van Driel and Gabrenya, 2013; Chen et al., 2012; Moon, 2010; Ang and Inkpen, 2008). As Kalkan (2011, p.45) stated, "intelligence has been conceptualized as a critical capability of organizations". Examining cultural intelligence at the organizational level provides opportunities for behavioral and strategic improvements (Ng et al., 2012). Cultural intelligence has emerged as one of the major issues in cultural intelligence research (Livermore et al., 2015, p. 209).

#### ***2.4.6 Measurement Instruments***

Cultural intelligence is a relatively new subject of study. Nonetheless, some scholars have attempted to develop an instrument with which to measure the phenomena. The first scale, the cultural intelligence scale, developed by Ang et al. in 2007, tested two samples of undergraduate students from the US and Singapore and 98 international managers from 17 nations. The measurement instrument for cultural intelligence consisted of four dimensions, metacognitive, cognitive, motivational, and behavioral.

Later on, Van Dyne et al. (2012) extended the initial instrument adding 11 sub-dimensions to the four facets of cultural intelligence. For the metacognitive dimension, they add planning, awareness, and checking. The cognitive dimension was separated into general cultural knowledge and context-specific knowledge. The motivational dimension extended to include intrinsic interest, extrinsic interest, and self-efficacy to adjust. Finally, the behavioral dimension was distinguished by verbal behavior, nonverbal behavior, and speech act.

Based on the theory of cultural intelligence and guided by the initial instrument development, Thomas et al. (2015) developed a short ten-item scale that measured the three constituent elements of: cultural knowledge, cultural skills, and cultural metacognition. The study used data collected by the online data collection website Amazon Mechanical Turk, from 3,526 participants worldwide, including graduate students from business school in France, China, and Europe; undergraduates from Australia and Indonesia; and employees in Turkey. They measured cultural knowledge by the way cultures vary and by the complexity of that knowledge. Cultural skills were divided into five dimensions: relational, perceptual acuity, empathy, adaptability, and tolerance of uncertainty, while cultural metacognition consisted of three facets: awareness, analysis, and planning.

Very few studies have tried to develop an instrument to measure organizational cultural intelligence due to the construct's novelty. Ang and Inkpen (2008) recognized the importance of cultural intelligence at the organizational level. Therefore, they developed a scale to measure organizational cultural intelligence, drawing on the resource-based theory. They suggested that an enterprise's organizational cultural intelligence consists of three dimensions: managerial, competitive, and structural capabilities.

Lima et al (2016) were the latest to develop a coherent and complete measurement instrument). Their instrument consisted of leadership behavior, adaptability, training, intentionality, and inclusion dimensions. They based their instrument on previous studies and considered all the previously mentioned dimensions, such as managerial, competitive, structural. Their sample derived from nonprofit organizations based in the US and Canada. They suggested further validating the scale in different sectors and using different sample sizes, and intimated that organizational cultural intelligence warranted more research.

## **CHAPTER 3 HYPOTHESES DEVELOPMENT**

Chapter 3 refers to the development of research hypotheses. It begins by examining the structure of business partner selection criteria and its influence on value co-creation. Next the structure of organizational culture in shipping companies and its impact on business partner selection criteria is presented. The next two hypotheses address the structure of organizational cultural intelligence in shipping companies and its mediating role on the relationship between organizational culture and selection criteria. Finally, the moderating role of firm size is examined in the last hypothesis

### **3.1 The Structure of Shipping Companies' Business Partners Selection Criteria (Hypothesis 1)**

Academia has shown great interest in the way companies select business partners in various sectors, such as in manufacturing, consulting, and transportation (Oeser et al., 2020; Paul et al., 2020; Rossem and Hartense, 2020; Tavazzy et al., 2020; Narkhede et al., 2017). Selecting business partners is considered a critical factor for companies wishing to either expand their operations nationally or internationally or to outsource specific organizational activities (Petricevik and Verbeke, 2019; Torabi et al., 2015,).

In the shipping industry, selecting partners is a common and necessary practice, therefore, it has attracted many scholars' interest. The selection criteria vary depending on the occasion. For example, research focusing on port selection cite cost, quality of services, port connectivity, geographical location and infrastructure as important criteria (Othamn et al., 2020; Castelein et al., 2019; Moya and Valero, 2017). Aguezzoul (2014) conducted a literature review regarding the selection of third-party logistics in shipping and found that the most cited criteria were quality, relationships, costs, and services. Studies examining carrier selection for shipping their products suggest that the criteria of cost, delivery time, reputation, cargo handling capabilities and service quality must be taken into consideration (Sener, 2016; Wong et al., 2008). Borch and Solesvik (2016) found that shipping companies wishing to form alliances for Rresearch and development projects chose partners with the emphasis on trust, expertise, competence, experience and financial profitability criteria. Regarding the formation of international joint ventures and strategic alliances in shipping the criteria of interfirm cooperation, cost, organizational

learning, trustworthiness, management systems and resource contribution are important for partner selection (Lee et al., 2019; Zutshi and Tan, 2009).

Studies have also examined the criteria shipping companies use when selecting other partners such as shipping registries, provision of supplies and third-party ship management companies. Cost, market conditions, national and international laws and restrictions are the most important criteria for shipping companies when choosing shipping registries (Chou, 2018), while supply capability, risk control, time delivery and quality are important criteria when selecting companies for provision suppliers (Hsu et al., 2016).

The shipping industry is characterized by a complex and competitive environment, and by the continuous interaction and collaboration with many different actors to exploit economies of scale. Shipping companies can add value by with outsourcing. Companies commonly outsource some of their activities to achieve economies of scale or to gain competitive advantage (Haeri and Rezaei, 2019). The selection of third-party ship management has been examined by scholars as it is a common practice among shipping companies. From these studies the main factors influencing the choice of a third-party ship management company are reputation, experience, competence and quality of services (Asuquo, 2014; Mitroussi, 2004, Panayides and Cullinane, 2002).

Shipping companies' most outsourced activity is crew management. Ships crews are typically multicultural, comprising individuals from different cultural backgrounds, and many companies are unwilling or unable to take on the selection of individuals to man their ships, which is why they outsource this function to manning agencies (McVeigh and MacLachlan, 2019). The role of manning agencies is to find, manage, train, place and support seafarers. Shipping companies collaborate with manning agencies in order to recruit the most skilled and suitable crew for their vessels.

Shipping companies' manning strategies vary, as some choose to have only nationals; others, only foreigners; and some choose a combination. A study conducted for a Turkish shipping company concluded that the criteria to choose a manning strategy are language, salary, overtime working, service quality, conflict resolution and crew insurance (Bulut et al., 2010). Additionally, the size of the company, crew desirability, technological changes and crew characteristics and capabilities are factors that influence

the selection of manning agencies as external partners by shipping companies (Yuen et al., 2018; Fan et al., 2017; Progoulaki and Roe, 2011; Mitroussi, 2004).

From the above, it is understood that shipping companies use different criteria for selecting partners depending on the type of cooperation they seek. Outsourcing shipping operations is a common practice that benefits shipping companies especially in terms of crew management (Seo et al., 2018; Cariou and Wolf, 2011; Goulielmos et al., 2011; Mitroussi, 2004). As the human factor has proven to be critical for the smooth and efficient operation of shipping companies (IMO, 2003), the selection of manning agencies is a challenging task that remains unexplored. Based on the literature presented above we support that shipping companies select manning agencies (as business partners) based on criteria such as cost, quality, reputation, company and crew characteristics, and we propose the following hypothesis:

*H1: Shipping companies' selection criteria of manning agencies is a multidimensional construct including cost, quality, brand name/reputation, crew characteristics, and company characteristics.*

### **3.2 The Impact of Business Partner Selection Criteria on Value Co-creation Behavior (Hypothesis 2)**

Creating relationships and partnerships of various forms is a source of competitive advantage, so the choice of partners is crucial (Roy et al., 2020; Solesvik and Echeva, 2010). A poor choice can lead to severe problems and outright failure of the partnership. Creating partnerships is essential for companies' survival and prosperity. Companies' resources and capabilities are insufficient to cope with the competitive operational environment. The reasons for creating relationships/collaborations are, therefore, many.

Three decades ago, Ellram (1990) stated that the main reasons companies aim to create partnerships are to ensure better prices and reliable sources to influence quality from suppliers and delivery. From the suppliers' point of view, the main reasons are to secure reliable sources and a reliable market for their products/services, influence the quality of customers, to create international consortia, and to reduce bureaucratic operating costs.



The ultimate goal is to create strong bonds and long-term partnerships to facilitate and lead value creation for all stakeholders. Creating relationships and collaborations is the foundation of co-creating value. Through this process, stakeholders can share and exchange knowledge, skills, and resources that are key to creating a strategic competitive advantage (Bettencourt et al., 2014). Reaping mutual benefit is the driving force that motivates companies to develop partnerships. Establishing mutually beneficial relationships implies developing behaviors that create value for stakeholders (Vargo et al., 2016). The selection of partners is therefore made on the basis that actors involved meet these characteristics that will help create the conditions for the development of partnerships, which, in turn, will lead to the creation of mutually beneficial value (Diaz-Mendez and Saren, 2019; Laud and Karpen, 2017; Ryser et al., 2014; Power and Reagan, 2007).

The criteria by which companies select partners vary depending on the nature of the work, the companies' needs, and the personal criteria they set (Zimmer et al., 2016; Nguyen et al., 2014; Bulut et al., 2010). Characteristics that contribute significantly to the development of value co-creation have been shown to include quality, trust, commitment, word of mouth, and behaviors (Diaz-Mendez and Saren, 2019; Cambria and Fierro, 2018). Therefore, the evaluation and selection of partners based on these characteristics play an important role in the perception's customers/buyers hold regarding suppliers/partners because these characteristics determine and define the creation of a business relationship/ (Laud and Karpen, 2017; Roseira and Brito, 2014; Grönroos, 2011).

The absence of these features indicates incompatibility between potential partners, which can lead to negative results (Zhu et al., 2017; Moeller, 2010). A lack of information and poor communication can also contribute to a collaboration's negative outcome (Enz and Lambert, 2012; Lambert and Enz, 2012), as well as the reluctance to create partnerships based on the exchange of resources and knowledge to co-create value (Garcia et al., 2019). Moeller's research (2010) showed that potential partners' behavioral characteristics, such as trust, commitment, and opportunism, are influenced by the selection process, which indirectly affects the performance of the network. Compatibility and complementarity are essential factors in selecting partners and, consequently, in professional relationships (Leischning et al., 2014; Cummings and Holmberg, 2012; Al

Khalifa and Peterson, 1999). Also, complementarity and compatibility encourage collaboration and knowledge transfer between partners, thus strengthening business relationships (Manotungvorapun and Gerdrsi, 2016). The contribution of partner compatibility to value co-creation was evinced by Hammervoll et al. (2014), who claimed that there are two types of co-creation of value, reciprocal and sequential, based on the criteria of the partner's adaptability, geographical proximity, and knowledge sharing.

Research has shown that the following criteria for selecting business partners contribute to value creation, and, therefore, to mutually beneficial partnerships: market orientation and product design (Simpson et al., 2001); technological, strategic, and relational adjustment (Emden et al., 2006); technological perseverance and experience in developmental processes (Diestre and Rajagopalan, 2018); and, lastly, customer integration (Diaz-Mendez and Saaren, 2017). Additional critical factors for long-term and sustainable partnerships are the reliability of suppliers and recognition that all parties must successfully participate (Katsikeas and Leonidou, 1996). The condition of interdependence between the parties to create value is supported by Forstroom (2005), who examined the shipping industry's buyer-seller relationship.

Companies aim to co-create value both in the industrial sector and in the service sector. Bonamigo et al. (2020) argued that successful collaborations and value co-creation processes are driven by friendly relationships, skills, resources, companies' compatibility, and characteristics such as effective communication. Furthermore, studies have shown that value co-creation is achieved through business partners' reputations (Chih et al., 2019) since companies tend to collaborate with reputable firms (Pera et al., 2016). Similarly, in the shipping industry (which can be integrated into the services sector), the creation of stable and efficient relationships, which can lead to mutual benefits and, therefore, value is of paramount importance. Given that a vast network of partnerships surrounds companies operating in the shipping industry, it is vital to build interpersonal relationships (Harlaftis and Theotokas, 2004). Therefore, shipping companies' partners' selection is based on their activities and on the stability and reliability that these partners offer. Nevertheless, to the best of our knowledge, studies examining the relationship between criteria used to select business partners and value co-creation are lacking.

Considering the above and following studies on customer characteristics in value creation (Diaz-Mendez and Saren, 2017; Hammervoll et al., 2014; Katsikeas and Leonidou, 1996), this research aims to investigate the role of customers and their behavior in the process of value creation. It is argued that partner selection criteria influence value creation. In other words, this research examines the impact of partner selection criteria on the behaviors created by stakeholders' active participation in value co-creation in the shipping industry.

*H2: Shipping companies' criteria for selecting manning agencies influence the creation of value*

### **3.3 The Structure of Organizational Culture (Hypothesis 3)**

Organizational culture influences many aspects of businesses and has been examined across many business sectors. Each organization can be characterized by multiple values inherent in different types of culture. Thus, companies can have more than one type of organizational culture. In the shipping industry, organizational culture has been acknowledged as an important factor affecting shipping companies' operations (Mitroussi, 2003), innovation in maritime clusters (Djoumessi et al., 2019), inter-organizational trust, and knowledge sharing (Nir et al., 2012). However, most studies examine the influence of national culture on crews and shipping companies' crew management and the importance of safety culture (Havold and Oltedal, 2018; Theotokas and Progoulaki, 2007; Theotokas, 1998; Jenssen and Randoy, 2002; Grammenos and Choi, 1999; Lu et al., 2012; Lützhöft et al., 2011). Nevertheless, Yang et al.,'s (2009) found that organizational culture, considered a facilitator of knowledge management, enhanced the competitive advantage and performance of Taiwanese linear shipping companies. The fact that organizational culture positively and significantly enhances companies' competitive advantage and performance was supported by another study conducted in the shipping sector examining the role of human resource management (Progoulaki and Theotokas, 2010).

Although research recognizes the role of organizational culture in the shipping industry, extensive examination of shipping companies' organizational culture types is scarce. Tuan (2013), in his study on Vietnamese shipping companies, found that organizational culture types affect middle managers' the ability to influence superiors to

implement requests and decisions (so-called upward influence behaviors). He claimed that adhocracy, market, and clan culture positively and significantly impact the organizational beneficial behavior dimension of upward influence behaviors. In contrast, the hierarchical type of organizational culture is positively and significantly related to the self-indulgent and destructive behavior dimensions of upward influence behaviors (Tuan, 2013). Karakasnaki et al. (2019) found that the organizational culture dimensions of community, innovation and bureaucracy had a significant and positive effect on service quality in a study conduct in the Greek shipping sector. Shin and Shin (2020) investigated organizational culture's role in understanding and using new technologies in shipping, and they discovered that the developmental or rational culture types were the most adept at adopting new technologies.

Following the literature on organizational culture and its classifications of the hierarchical, group, rational, and developmental types (Shin and Shin, 2020; Willar et al., 2016; Gambi et al., 2015; Tuan, 2013; Prajogo and Mc Dermott, 2005), and to further evaluate the application of organizational culture dimensions in the shipping industry, we hypothesize that:

*H3: Shipping companies' organizational culture consists of four types: hierarchical, group, rational and developmental.*

### **3.4 The Impact of Organizational Culture on Business Partner Selection Criteria (Hypothesis 4)**

The selection of business partners is crucial for companies. Organizations have realized that they can improve their efficiency and achieve their organizational goals if they use (exploit) other companies' resources (individuals' expertise) (Eloranta and Turunen, 2015; Powell, 1990). Thus, through collaboration companies can cover their weaknesses and enhance their strengths. The ultimate goal is to maintain or enhance their competitive advantage and, therefore, their profitability (Klein, 1990). Khan et al. (2018) highlighted the role of organizational culture in the business partner selection process.

The decision to select business partners can be categorized as either concentrating on the work or on the partners' characteristics (Solesvik and Westhead, 2010). Either way, the the choice of partner depends on the companies' culture (Murphy et al., 2019),

which is the most crucial factor for the success of cooperation. Having the right personnel to staff the companies is another key factor, as employees should understand the company's principles, values, and beliefs. Barrick and Parks-Leduc (2018) argued that companies recruit personnel that match their company culture. In their study, Roulin and Krings (2020) revealed that potential employees tailor their profiles to suit the target company's culture better. Cao et al. (2015), examined the effect of organizational culture in interfirm and intrafirm collaborations among manufacturing firms across ten countries. According to the study, different types of organizational culture have different effects on integration. Specifically, they argued that the group and developmental types of organizational culture have the most significant impact on integration, while the hierarchical type is negatively related to integration dimensions.

Organizational culture is a company's foundation: it shapes the values and beliefs of its personnel. These values must be disseminated to all employees by the corporate leadership to both create a unified culture and mold attitudes toward a common goal (Schein 2010). The compatibility and complementarity of the organizational culture (of potential collaborators) can determine the outcome of the collaboration (Ellram, 1990). In case of divergence, collisions, a lack of communication, and misunderstandings are likely to occur (Pothukuchi et al., 2018). Berthon et al. (2001), in their research, showed that companies manage problems (categorized as either operational or strategic) and their solutions (categorized as either structured or unstructured) based on the company's culture.

Research has shown that decisions, behaviors, and business practices stem from enterprises' organizational culture (Cameron and Quinn, 2011). Organizational culture impacts the effectiveness, commitment, and implementation of the business strategy and the conclusion of long-term relationships (Lund, 2003; Pantouvakis and Karakasnaki, 2018). It significantly influences company behavior and communication (Gabel-Samueli et al., 2019; Progoulaki and Theotokas, 2016) and managers and employees' decision-making (Xi et al., 2019; Bravo et al., 2016; Schwartz and Davis, 2003). Kaufmann et al. (2014) conducted a study on the influence of decision-making on partner selection criteria. More specifically, they examined decision making through two approaches, logical and empirical, while performance was the primary selection criterion expressed through cost, quality, tradition, and innovation. Their sample was an industrial product

company, and they used hierarchical regression analysis. Their findings show that a rational approach to decision-making is more cost-effective. In contrast, an empirical approach produced better results in terms of quality, innovation, and delivery to their partners (Kaufmann et al., 2014).

Organizational culture shapes members' attitudes and behaviors, indicating how each company operates, and forming the company broader culture (O'Reilly et al., 2014). Organizational culture also impacts the implementation of business strategy, through which companies seek to gain a competitive advantage (Lund, 2003). Therefore, companies need an organizational culture that supports each their strategies. When organizational culture and strategy align, company's performance is enhanced (Cabrera and Bonache, 1999).

Some research supports the relationship between organizational culture and strategy. Ahmadi et al. (2012), in a survey of 136 people in an Iranian bank, argued that organizational culture (and its dimensions) is strongly correlated with strategy implementation. They claimed that a more flexible culture is more likely to achieve the company's goals, thus fulfilling their strategy, perhaps because these types of culture are more focused on change and adaptability. Chen et al. (2018) examined organizational culture and innovation strategy in 186 Chinese organizations via a holistic approach. They concluded that in order to successfully innovate, business strategy must be supported by an organizational culture that will provide whatever is necessary. As Verma and Pullman (1998) stated, organizational culture impacts operational strategy, which should guide tactical operation decisions.

Organizational culture helps businesses deal with and manage the uncertain and ever-changing operational environment as it influences leadership's decisions. The criteria used for business partner selection is of strategic importance (Ho et al., 2015).

However, examining other important factors such as culture and corporate strategy is also recommended (Wetzstein, 2019). Greaver (1999) pointed out that when a company decides to choose a partner, it must consider the organizational culture, while Mitroussi (2003) similarly recognized organizational culture as an important factor influencing shipping companies' operations.

Studies have appreciated the importance of organizational culture in partner selection (Khan et al., 2018; Gattringer et al., 2017; Ellram, 1990). Nevertheless, most studies treat organizational culture as a selection criterion overlooking the role of selecting companies' organizational culture on selection criteria. There is no quantitative research on the relationship between organizational culture and selection criteria to the best of our knowledge. This study tries to fill this gap, arguing that different shipping companies' organizational cultures promote different selection criteria when seeking business partners. Therefore, this study posits that:

*H4: Shipping companies use various selection criteria based on their organizational culture type.*

### **3.5 The Structure of Organizational Cultural Intelligence (Hypothesis 5)**

Cultural intelligence, a new topic in academia, is mostly examined on an individual level. So far, studies on cultural intelligence have been carried out in various sectors such as the textile industry (Sozbilirand Yesil, 2016), real estate (Chen et al., 2012), and the service sector (Presbitero, 2016; Alshaibani and Bahir, 2016; Bucker et al., 2014).

Research at the organizational level is limited and mostly conceptual. Cultural intelligence is characterized as a capability (Ang and Inkpen, 2008) or skillset (Charoensukmongkol, 2016) for organizations' effective functioning. Research at the corporate level has been carried out in the construction sector (Yitmen, 2013), in the field of offshore outsourcing (Ang and Inkpen, 2008), small medium enterprises in Thailand (Charoensukmongkol, 2016), and American insurance companies in Bangalore (Srinivas and Patrick, 2018). Efforts to find measurable features of cultural intelligence at the corporate level have been made by Ang and Inkpen (2008). Based on the theory of resources and skills, they focused on offshore outsourcing. They argued that organizational cultural intelligence could be examined by three types of capabilities that include both tangible and non-tangible resources, which are referred to as managerial, competitive, and structural.

Lima et al., (2016) subsequent research building on Ang and Inkpen's (2008) work include the theoretical background by Moon (2010), Triandis (2006), and the studies of Chen et al. (2012) and Yitmen (2013) attempted to create a comprehensive questionnaire

with non-profit organizations as a sample. They concluded that organizational cultural intelligence consists of the following factors: leadership behavior, adaptability, training, intentionality, and inclusion (Lima et al., 2016). Leadership behavior refers to how senior management motivates and unites employees and assigns tasks (Kent et al., 2011). Adaptability refers to the ability to change and adapt according to circumstances (Basadur et al., 2014). Training means the constant acquisition of knowledge and the development of theoretical and practical skills (Hassi and Sorti, 2011). Intentionality is purposely searching for information (Katz and Gartner, 1988). Inclusion refers to making others feel like part of the organization (Barak, 1999).

Srinivas and Patrick (2018) used the above questionnaire to research organizational cultural intelligence and job satisfaction in insurance companies. Their findings showed job satisfaction is significantly affected by the dimensions of organizational cultural intelligence.

Aware of the previous research conducted in the service sector, and based on the research by Moon (2010), Yitmen (2013), Ang and Inkpen (2008), Charoensukmongkol, 2016) and Lima et al., (2016), we hypothesize that:

*H5: Shipping companies' organizational cultural intelligence of shipping companies consists of leadership behavior, adaptability, training, intentionality, and inclusion dimensions.*

### **3.6 The Mediating Role of Organizational Cultural Intelligence on the Relationship Between Organizational Culture and Business Partner Selection Criteria (Hypothesis 6)**

Increasing globalization has contributed to the heterogeneous mass movement of the labor force. It has led organizations to redefine human resources as a means for organizational change (Bhattacharya, 2015). Globalization has brought additional changes in human resources management. It is now important to effectively manage people from different cultures (or cultural backgrounds) and work effectively in culturally diverse organizations (Balogh, 2011). Organizational success depends upon the exploitation of culturally diversified human resources in the company's interests.



Being culturally different refers to having a different culture, race, religion, language, and perception (Moran et al., 2014).

Thus, it is important for companies operating globally, such as shipping companies, to understand the usefulness of adaptation when operating in foreign countries and interacting with people from other backgrounds. Shipping, which is inherently international, has not been left untouched by creeping globalization. Thus, human resource management is the most important and, at the same time, more difficult task of the shipping companies. People involved in maritime operations are not always homogeneous. The existence of an international and diverse workforce presents a human resources management challenge. A key component of these companies' success (and especially for shipping companies) is the creation of relationships based on trust and commitment, which lead to long-term partnerships. Collaboration between firms is challenging, particularly where perception is rooted in cultural difference are concerned. Ways to tackle these challenges is through cultural domination, submission, or integration. On the other hand, mutual accommodation, respect, and cooperation are prerequisites for successful interaction (Pothukuchi et al., 2018).

Navigating cultural differences and ever-increasing labor mobility explains cultural intelligence (Crowne, 2008). Cultural intelligence has been described as an individual's ability to adapt and handle diverse cultural environments (Earley, 2002). Consequently, organizational cultural intelligence refers to an organization's ability to adapt to multicultural environments (Lima et al., 2016). Organizations must constantly develop and evolve to confront the conditions of a demanding environment. These capabilities are influenced by companies' organizational culture (Yitmen, 2013; Ng et al., 2012). Hock et al. (2016) examined the effect of organizational culture on strategic agility (strategic sensitivity, collective commitment, and resource fluidity) regarding business model innovation. They stated that companies with an externally oriented, flexible culture positively influence innovation and change in organizations but, conversely, companies with an internally oriented culture focused on stability do not impact innovation and change.

Several studies have recognized the impact of organizational culture on cultural intelligence. According to Balogh (2011), changes in a company's organizational culture

are associated with the characteristics of the people who constitute that organization. His study revealed that people prefer different types of organizational culture according to their degree of cultural intelligence. Kubicek et al. (2017) supported the hypothesis that cultural intelligence is positively related to organizational culture. They also found that cross-cultural role conflict, ambiguity, and overload mediate this relationship. Gabel-Samueli et al. (2019) found that organizational culture has a significant positive impact on the relationship between cultural intelligence and engagement. They suggested that organizational culture sets the appropriate conditions for the cultural intelligence to be developed, leading to employee engagement.

A study conducted by Ang and Inkpen (2008), found that culturally intelligent organizations make beneficial decisions. They supported the idea that an organizations' cultural intelligence facilitates decision making (such as the process of offshore outsourcing). Leadership's ability to understand and evaluate the international business context and its related culture becomes imperative when managing an organization operating globally. Consequently, it is proposed that cultural intelligence influences strategic choices and decision-making: specifically, it influences executives' decisions regarding international investment and partner selection (Mannor, 2008).

Organizational culture has been shown to influence decision-making while being dependent on and cultivated by leadership. It also impacts cultural intelligence, which, in turn, influences decision-making (Sharma and Hussain, 2017; Ng et al., 2012;). The choice of partner is based on senior management's judgment regarding expectations, requirements, and characteristics. A culturally intelligent company is in a more advantageous position to gather information, plus better understand a partner's needs, and adapt to them, thus leading more fruitful decision-making, such as in the case of choosing business partners (Yitmen, 2013) In other words, cultural intelligence furnishes companies with the competencies and capabilities to be able to gain their partners' trust, commitment, and cooperation (Mehta et al., 2006), which, as discussed, are essential criteria when selecting a business partner.

Cultural intelligence impacts customer-supplier relationships. Murphy et al. (2019) stated that cultural intelligence is a critical factor in managing customer-supplier relationships because it helps tailor customer-supplier behaviors to the partners they wish

to enter into a business relationship with, leading to a more successful collaboration. Awan et al. (2015) examined cultural intelligence's role in the relationship between relational governance and commitment to sustainability and concluded that cultural intelligence leads to an improved commitment to sustainability. Furthermore, they reported that cultural intelligence helps companies adapt their relationships while also exercising better decision-making. Pesch and Bouncken (2018) examined the role of cultural intelligence at the organizational level. They found that it has positively and significantly impacts the relationship between companies' socialization practices and the development of trust between companies. They stated that organizational cultural intelligence is a useful attribute that helps companies understand their partners, communicate with them, and avoid misunderstandings that may arise due to cultural differences. Cultural intelligence also helps companies perceive and evaluate potential partners' behaviors in order to adapt to and manage them better.

With that in mind, it is evident that the development of a culture that emphasizes the exploitation of diversity and enhances its capabilities will lead to successful decisions (Ang and Inkpen, 2008). A culturally intelligent company strengthens its position internally (among its employees) and externally (in partnerships with other companies such as manning agencies) Businesses that encourage their employees to interact with people from different cultures lengthen their dynamics and develop organizational knowledge. Also, companies gain a different dynamic because cultural intelligence allows them to form attitudes and enhance knowledge for managing external partnerships. Consequently, firms can better and more effectively evaluate their potential partners' characteristics, and, therefore, choose external partners who best meet their requirements (Chen et al., 2012; Ang et al., 2007; Van Dyne et al., 2010;). Some studies see cultural intelligence as a tool for recruiting personnel (Lee et al., 2019; Jyoti and Kour, 2017; Sharma and Hussain, 2017; Rose et al., 2010) or as a selection criterion (Ali et al., 2019).

As there is limited research on the role of cultural intelligence at the organizational level and its relation to the selection process, study examination is required (Yitmen, 2013; Moon 2010; Zutshi and Tan 2009; Triandis, 2006;). Examining cultural intelligence at the organizational level provides opportunities for behavioral and strategic improvements (Ng et al., 2012). Moreover, organizational cultural intelligence has

emerged as one of the major issues in cultural intelligence research (Livermore et al., 2015, p. 209). However, possessing cultural intelligence is not enough to ensure organizational success: cultural intelligence needs to be supported and enhanced by organizations (Korzilius et al., 2017). Charoensukmongkol (2016) suggested that it would be beneficial to study the cultural intelligence factors that influence relationships among customers and suppliers.

Cultural intelligence is a valuable attribute that helps companies to manage multiculturalism. Based on that and the suggestion to further explore the role of cultural intelligence as a facilitator (Ott and Michailova, 2018), it is posited that:

*H6: Shipping companies' organizational cultural intelligence mediates the relationship between organizational culture and the criteria used when selecting a manning agency*

### **3.7 The Moderating Role of Company Size on the Relationship Between Organizational Culture – Organizational Cultural Intelligence – Selection Criteria – Value Co-creation relationships (Hypothesis 7a, Hypothesis 7b)**

Company size has been demonstrated to be an important factor in their operation and performance. Research has shown that company size affects their profitability (Dogan, 2013), merger and acquisition activities (Li et al., 2018), and performance (Jang and Pak, 2016; Majocchi et al., 2005;). Regarding the latter, researchers report that performance is not affected by size (Kalkan et al., 2011). Studies have shown that size impacts companies' organizational outcomes in the shipping industry, such as performance, investment in research and development, market orientation, decision-making, and outsourcing activities (Pantouvakis et al., 2017; Audia and Greve, 2006; Lun et al., 2010).

Companies operating in the same field, such as shipping companies, differ in their resources, knowledge, experience, organizational culture, and capabilities (Petruzelli et al., 2018; Lopez-Perez et al., 2017; Horisch et al., 2015). Accordingly, companies act and behave differently depending on their needs, ambitions, and expectations. Their

approaches to decision-making, for example, differ in matters concerning both the strategy they should follow to meet the external environment's challenges and matters concerning cooperation and the selection of their partners (Vaccaro, 2012). In short, shipping companies' selection of external partners depends on company size (Mitroussi, 2004).

Company size affects company organizational culture. A survey of a random sample of 5,000 employees in Australian companies found that small and medium-sized companies promote a culture based on innovation and reward (Gray et al., 2003). In a sample of 134 companies in Turkey's construction and architectural sector, it was claimed that small and medium-sized companies are characterized by the hierarchical or group type of culture (Onay-yazici et al., 2007).

Size also affects how companies react, respond, and adapt to the operating environment's demands. Jeng and Pak (2016) claimed that large and medium-sized companies have a greater capacity for adjustment and innovation because they have more resources to exploit. For this reason, they can utilize their collaborators' resources and capabilities and integrate these into their organizational practices.

The way companies adapt to their operational environment which, in the case of shipping companies is characterized, among other things, by multiculturalism and incorporate resources is enhanced if companies are culturally intelligent. Studies on the relationship between business size and cultural intelligence are rare. Charoensukmongkol (2016) conducted a study of small and medium-sized companies in Thailand and found that the degree of business owners' cultural intelligence was positively related to companies' ability to adapt, gain international knowledge, and build quality relationships with external suppliers and customers.

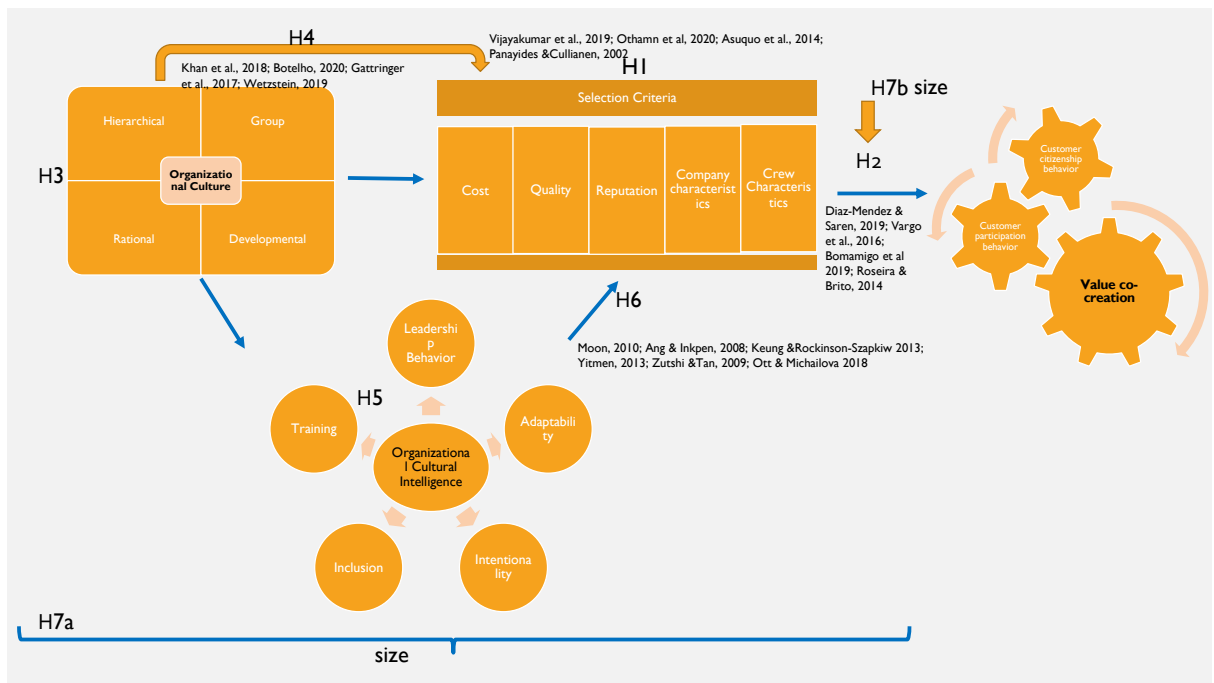
Ultimately, all companies want to increase their competitive advantage, become more efficient, and create value. Size has been seen as a moderating factor in the relationship between organizations' means to create value and competitiveness. Nevertheless, companies of different sizes attain different organizational results (Bashir and Verma, 2019).

Company size, organizational culture, and organizational cultural intelligence impact companies' decision-making. However, as yet, no study has examined their relationship. Company size is also noteworthy considering resource integration and value co-creation (Vural et al., 2019). With this in mind, this study hypothesizes that:

*H7a: Shipping companies' size moderates the relationship between organizational culture and cultural intelligence when selecting manning agencies as business partners*

*H7b: Shipping companies' size moderates the relationship between the criteria used to select manning agencies as business partners and value co-creation behavior*

Figure 2. An overview of the model



## CHAPTER 4 METHODOLOGY

### 4.1 Research Design

A survey was conducted in the Greek shipping industry. The Greek shipping industry is considered the foremost among shipping countries in every measurable way: the value of its fleet (USD\$93.288 million), the number of vessels, and the carriage ability measured by tons of dead weight (348,195,189) (UNCTAD, 2019). Moreover, it represents the 21% of the global tonnage, with 4936 vessels (UGS, 2019).

A self-administered questionnaire was used to collect data on organizational members' perceptions of the four constructs: organizational culture, cultural intelligence, value co-creation, and selection criteria. The unit of analysis in this study is the organization, as each organization has unique sets of cultural, relational, and management characteristics. Therefore, we have addressed only companies' top management who, as representatives of companies, have the knowledge and the expertise of companies' functions and participate in decision-making (Yamak et al., 2014; Hambrick and Mason, 1984).

The items included in the questionnaire, were based on the literature review and interviews conducted with market professionals. Thus, a structured questionnaire in English was developed. However, a Greek version of the questionnaire was prepared by native Greek speakers who are bilingual in Greek and English so that participants understood the importance of the concepts involved, given that the research was conducted only in Greek shipping companies.

Pilot tests were conducted to confirm the questions' clarity and understandability (Pagell and Krause, 2004). A pilot analysis of the questionnaire was performed on ten shipping companies that proportionally represented the shipping companies' population in terms of the type of cargo transported and the companies' sizes. In-depth interviews were performed with these companies' crew departments' directors, where the theoretically introduced constructs were discussed in detail. Upon completion, we collected comments and remarks, which, after being processed, were re-incorporated into

the questionnaire. Remarks – and suggestions were made regarding the clarity and addition of questions.

The main remarks mentioned pertained to the fact that the questionnaire was in Greek. The people in the market we contacted expressed that it would be more appropriate for the questionnaire to be in English, as it is the lingua franca of the shipping industry. Accordingly, after processing the proposals, they were incorporated into the questionnaire and translated back into English with the help of academics and professionals who handle the English language to identify and avoid misinterpretations. After checking for any misunderstandings, we proceeded again with translating the questionnaire into English, under the academics' supervision for accurate translation.

## **4.2 Sample**

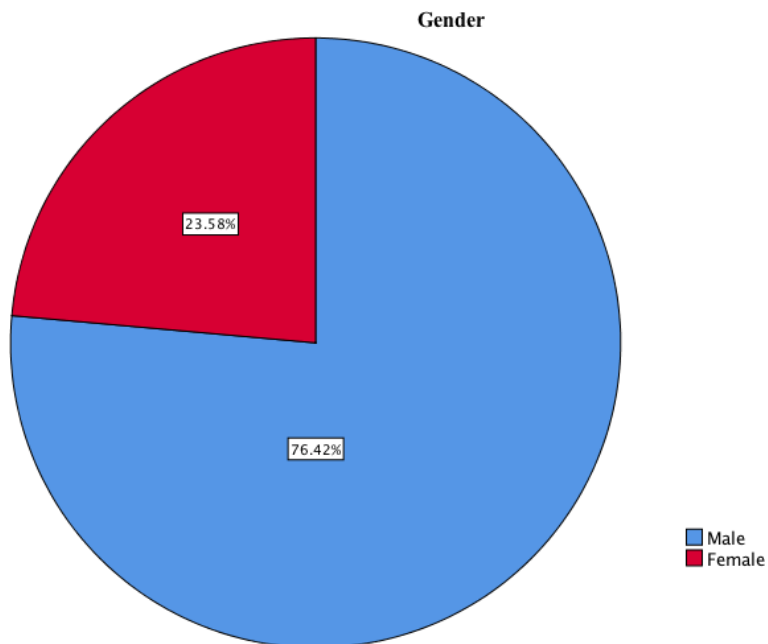
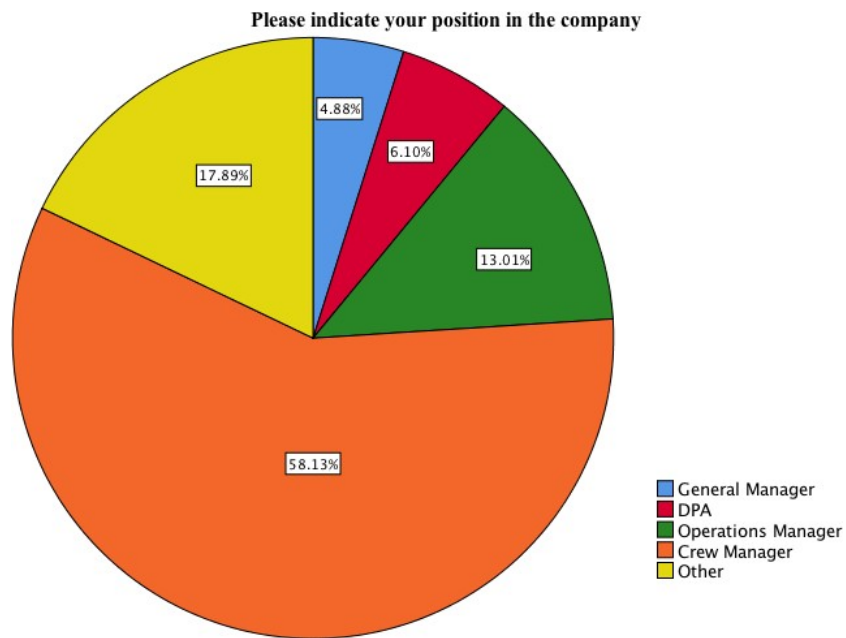
The sample of shipping companies was selected from the Greek Shipping Directory. From a list of some 700 companies operating in the Piraeus/ Greece shipping sector, we approached 445 shipping companies, which own or manage vessels. Companies' executives were contacted via phone calls and e-mail asking for their participation. For companies who agreed to participate in the study, personnel trained in data collection visited their premises to ensure the proper completion of the questionnaire. We ended up with 246 usable questionnaires. The response rate was satisfactory (respond rate of 55,18%), given the nature of the questionnaire and the potential respondent type.

Given the potentially sensitive nature of the questions, we assured total confidentiality and anonymity. A small number of participants reported no primary role but were included in the analyses.

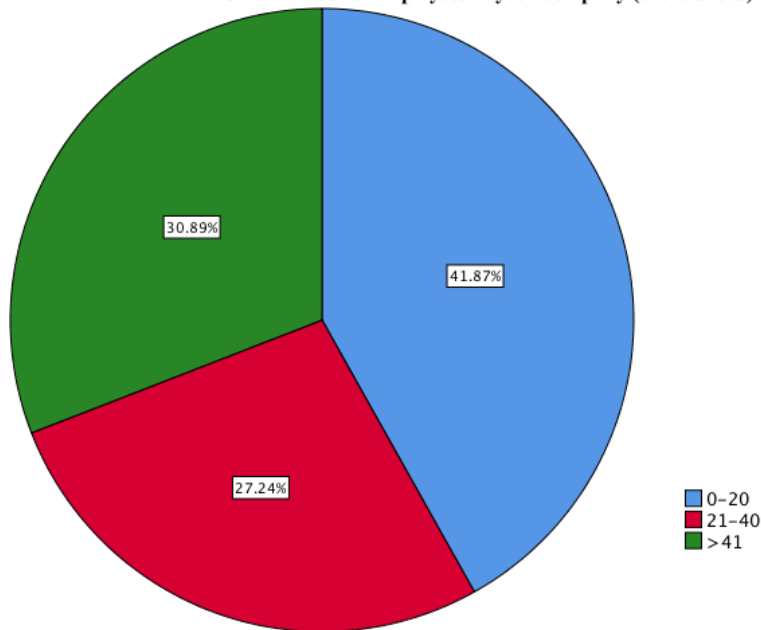
We addressed only the managers of shipping companies, most of whom were crew and operations managers. The respondents were comprised of executives with titles of crew managers (58,13%), operations managers (13,01%), DPA (6,10%), general managers (4,88%) and "other" titles (17,89%). Of 246 respondents, 188 were male and 58 were female. Of the companies, 50% operated in the dry bulk sector, 13,01% in liquid bulk, and 36,99% in a combination of sectors. Of the shipping companies represented,



41,87% employed 0-20 people, 27,24% employed 21-40 people and 30,89% had over 41 employees.

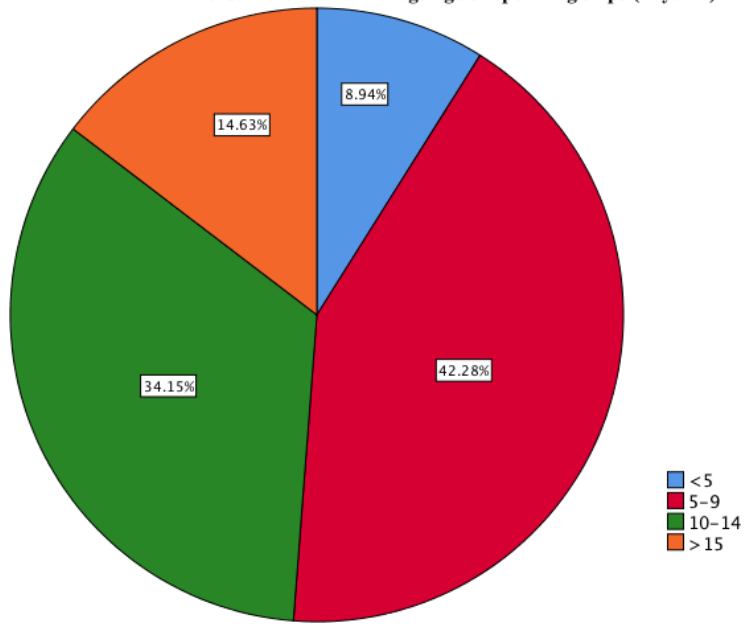


Which is the number of employees in your company (shore based)?

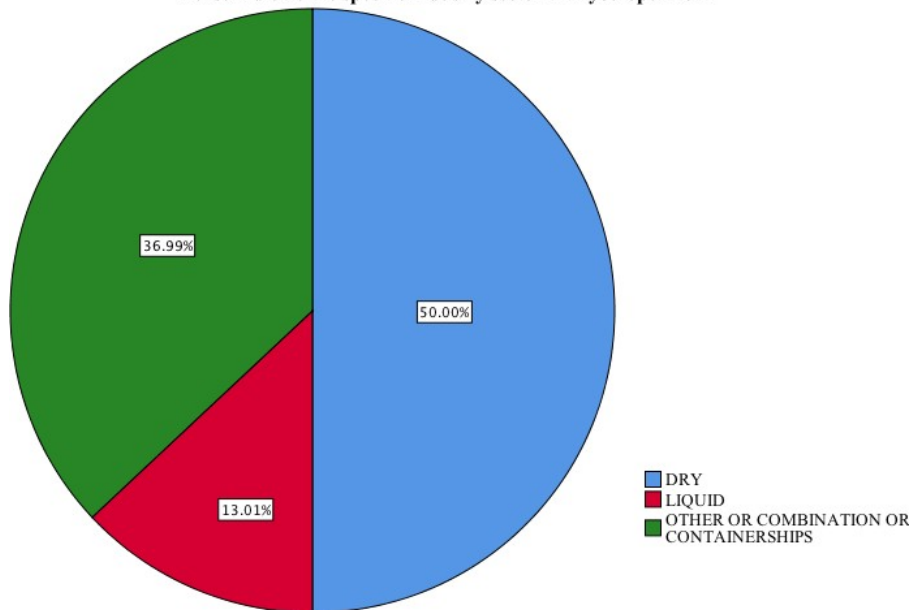


The majority of shipping companies (42,28%) operated vessels aged between 5-9 years old and 34,15% operated vessels aged 10-14 years. Considering the deadweight tonnage of the operated vessels 37,40% of shipping companies managed 500-100.000DWT, 23,17% managed 301.000-1.000.000 DWT, 19,92% managed 101.000-300.000 and 19,51% managed over >1.000.000 DWT.

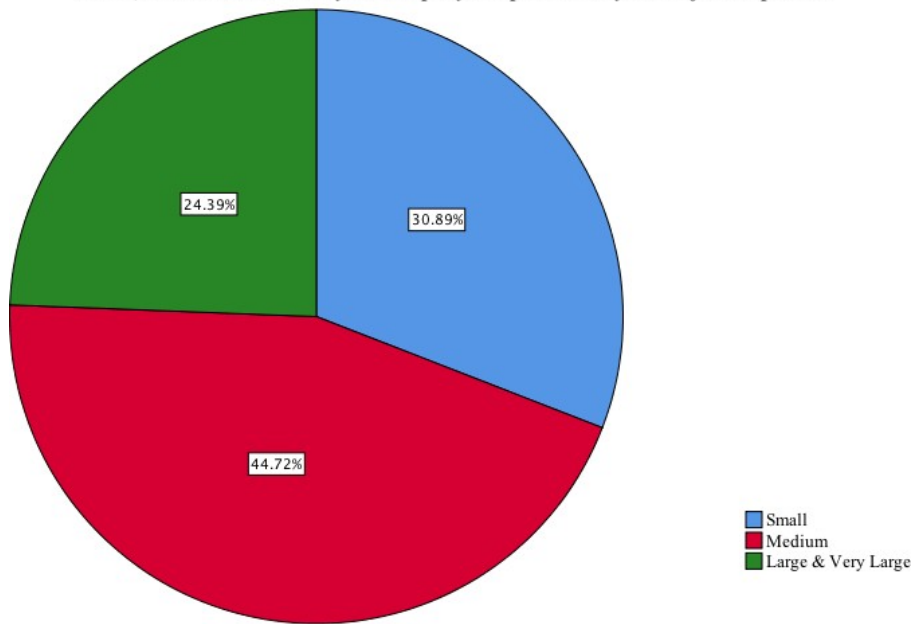
Please indicate the average age of operating ships (in years)



Please indicate the specific industry sector that you operate in



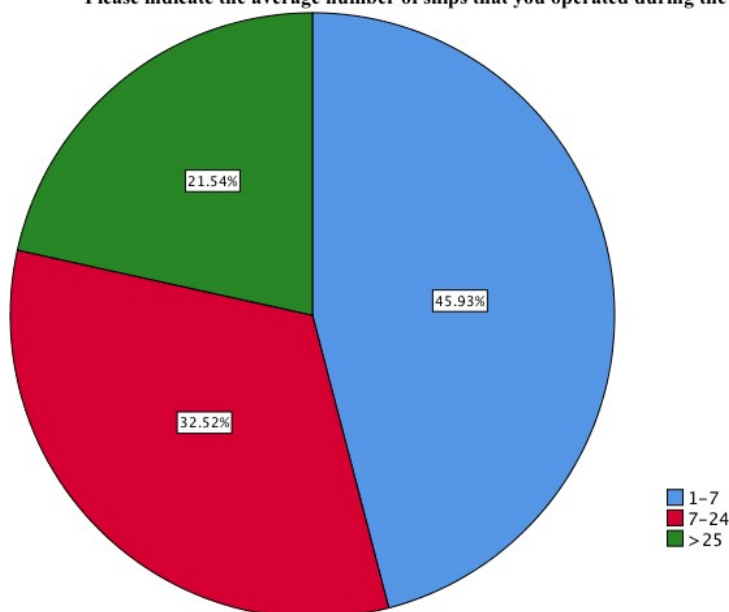
Please, determine the size of your company compared with your major competitors



Regarding the companies' size, 30,89% of respondents considered their companies to be small, 44,72% considered their companies to be medium, and 24,39% considered their companies to be large or very large.

The overall average number of vessels managed by companies surveyed were categorized to: companies managing 1-7 vessels representing 45,93%, followed by companies managing 7-24 vessels representing 32,52% and companies managing >25 vessels representing 21,54%.

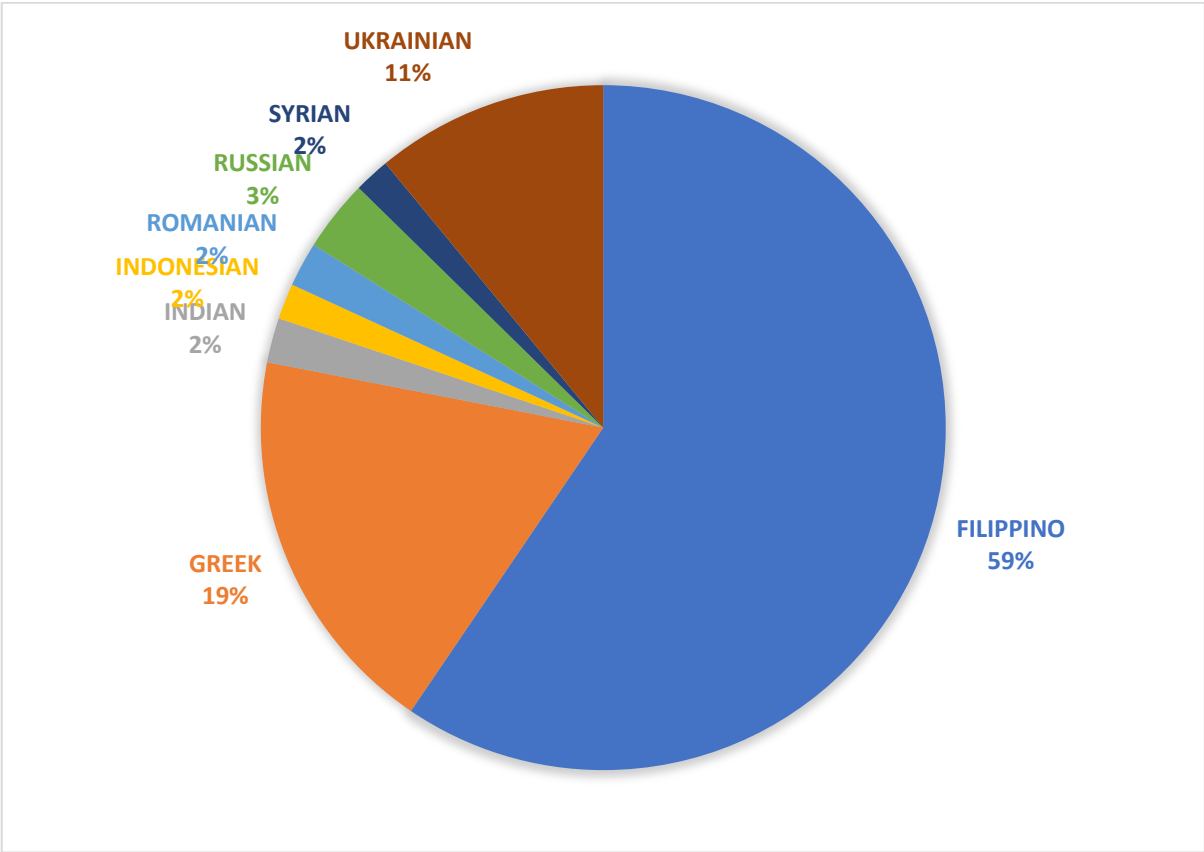
Please indicate the average number of ships that you operated during the last year



The table below shows more details the number of companies by size and by sector. Most companies operating in the dry cargo, are small and medium-sized, whereas large companies, operate in a variety of sectors.

	Small	Medium	Large and Very Large	Total
<b>DRY</b>	55	60	8	123
<b>LIQUID</b>	9	13	10	32
<b>OTHER OR COMBINATION OR CONTAINERSHIPS</b>	12	37	42	91

Finally, regarding the nationalities on board vessels of participating shipping companies the majority of shipping companies had a dominant crew nationality as follows: Filipinos 59% (141 shipping companies), Greeks 19% (44 shipping companies), Ukrainians 11% (26 shipping companies). In relation to shipping companies' preferred crew nationality, the results showed that 205 companies would like to work with Filipinos, 132 with Greeks, 106 with Ukrainians, 55 with Romanians, 46 with Russians, 29 with Europeans and 17 with Indians.



### **4.3 Measurement Instruments**

The scale items used to measure the examined constructs were derived from previous literature (Shin and Shin, 2020; Lima et al., 2016; Gambi et al., 2015; Yi and Gong 2013). Since this research focuses on the shipping industry, the selected measurement instruments are well suited, as all have been used in the service sector.

However, some of the constructs are new to the context of maritime firms, and it was necessary to refine the scale items. The table at the end of this section provides a summary of the constructs in question.

#### ***4.3.1 Selection Criteria***

Since there are no commonly accepted criteria that companies use to select external partners, we referred to the general literature on partner selection. The questions used in the questionnaire, which were the variables to be examined, emerged through the international literature on the criteria for selecting partners and covered a wide range of categories, including quality, cost, and brand/name (Aguazzoul, 2014; Yuen and Thai, 2015; Solesvik and Westhead, 2010; Walley et al., 2007).

To confirm the theoretically introduced criteria and before the final distribution of the questionnaire, a double confirmatory-exploratory analysis was performed to examine their readability, clarity, and completeness. Specifically:

A series of extensive in-depth interviews was conducted with a group of executives on crew management. The criteria were discussed in-depth, their causes and effects were analyzed, suggested options were removed and added, and the vocabulary was corrected.

An additional in-depth interview was conducted with the companies' top management of the crew management department. All the questions and criteria for partner selection by the companies were developed, their observations were taken into account, and the questionnaire's final text was formulated.

More explicitly, as far as the 'reputation/brand name' category was concerned, it was suggested that a question be asked about how crew offices present their services to

their customers. In the ‘crew characteristics’ category, the original question of whether shipping is affected by the ability to provide multiple crews to choose crew offices was developed in two parts for lower crews and officers. As for the category of ‘company characteristics,’ after a proposal from companies’ executives, it was suggested that a question be added about the impact of manning agencies training centers have on shipping companies’ selection.

All items were evaluated from “not at all” to “absolutely” based on a seven-point Likert-type scale.

#### ***4.3.2 Value Co-Creation Behavior***

To evaluate value co-creation, the customer value co-creation behavior scale adapted from Yi and Gong (2013) was chosen. It consists of two main factors: customer participation behavior (including information seeking, information sharing, responsible behavior, and personal interaction dimensions), and customer citizenship behavior (including feedback, advocacy, helping, and tolerance dimensions). Further refinement of the scale items was necessary, considering that this construct is new to the context of shipping. All items were scored on a seven – point Likert – type scale ranging from “not at all” to “absolutely”.

#### ***4.3.3 Organizational culture***

The measurement instrument used to evaluate organizational culture was the competing value framework used by Gambi et al (2015). It is a 20-item scale measurement instrument consisting of four cultural profiles: hierarchy, group, rational and developmental. Each dimension consists of five items. This measurement instrument was chosen as it has been widely used across various academic disciplines (Oh and Han, 2020; Shin and Shin, 2020; Tran, 2020; Chen et al., 2018; Ogbeidu et al., 2018; Hartnell et al., 2011). All items were valued on a seven-point Likert-type scale ranging from “strongly disagree” to “strongly agree”.

#### ***4.3.4 Organizational Cultural Intelligence***



Organizational cultural intelligence was measured with an established measurement instrument, which was a 19-item scale that integrates five factors: leadership behavior, adaptability, training, intentionality, and inclusion. Dimensions of leadership behavior and adaptability consisted of four items each. The training dimension consisted of five items, and the dimensions of intentionality and inclusion consisted of three items each (Lima et al., 2016). This study used this measurement instrument as it covers all aspects related to organizational levels of cultural intelligence (Srinivas et al., 2018) based on previous studies (Ang and Inkpen, 2008). All items were assessed on seven-point Likert-type scale ranging from “never” to “always”.

#### ***4.3.5 Company Size***

The most common way to measure company size in the literature is based on the number of employees' (Massaro et al., 2016). However, in the shipping industry, scholars argue that this type of measurement may be inaccurate because measuring company size based on the number of employees ignores the employees on the ships, who also belong to the companies' organizational structures (Theotokas, 2014; Mitroussi, 2004). Furthermore, it has been argued that measuring the size of companies can be done using subjective criteria. Based on the perception that executives have about the company's size, they can provide a more accurate description of their company (Pantouvakis et al., 2017). Therefore, based on the above, the company size was measured by dividing the sample into three categories, small, medium, and large, and very large, based on shipping companies' managers' perceptions of their companies' sizes. This categorization has been utilized in previous studies in the shipping sector (Pantouvakis and Vlachos, 2020; Pantouvakis et al., 2017)

Table 4.1 Summary of the Constructs under Examination.

Construct/ Hypothesis	Defined/suggested by	Measurement Instrument/ suggestion
Organisational Culture (O.C.)	Schein, 1996; Cameron and Quinn 2011	21 item scale as per Gambi et al. (2015)
Organizational Cultural Intelligence (OCQ)	Ang and Inkpen, 2008; Triandis 2006; Moon 2010 Lima et al., 2016.	20-item scale as per Lima et al., 2016
Selection Criteria (SC)	Solesvik and Westhead, 2010; Wetzstein 2019	Adaptation from Solesvik and Westhead, 2010; Agguezoul 2014; Panayides and Cullinane 2002
Value Co-Creation Behavior (VCCB)	Rivier et al, 2017; Mustak et al., 2013; Hansen, 2019	22-item scale adapted from Yi and Gong 2013
Size	Josefy et al., 2015 Das and He 2006	Measured as small, medium, large and very large based on previous studies of Pantouvakis and Vlachos, 2020; Pantouvakis et al., 2017

#### 4.4 Data Analysis

The statistical packages SPSS 25 and AMOS were used to analyze the collected data. The SPSS statistical package was used to provide an extensive reach of analysis and has been utilized in academic and business circles. Exploratory Factor Analysis (EFA), using IBM SPSS software (version 25), was employed to validate the items' scales for selection criteria, which form the factors that best represent our data. According to Hair et al. (2010), EFA is the most appropriate way to reveal the structure of a construct, such as selection criteria, when there is no established way of measuring it. Only items with factor loadings above 0.50 were included.

Confirmatory factor analyses (CFA) using IBM SPSS AMOS software (version 21) were computed for the constructs of organizational culture, organizational cultural intelligence, and value co-creation behavior. Based on Hair (2010), this is an adequate way to examine their functionality since all constructs are based on pre-existed theories. CFA was also utilized to further confirm the resulting structure of the selection criteria.

The impact of selection criteria on value co-creation and the impact of organizational culture on selection criteria were examined through regression analyses. The mediating effect of organizational cultural intelligence between organizational culture and selection criteria was tested following Barron's and Kenny's three steps (1986). The moderating role of firm size in the relationship between organizational culture, organizational cultural intelligence, and selection criteria was also examined through regression analyses.

Cronbach's alpha was applied to test the reliability of the data. The alpha values were 0.906 for selection criteria, 0.840 for organizational culture, 0.903 for organizational cultural intelligence and 0.809 for value co-creation. SPSS 25 was used to test the impact and significant relationship of our independent variables via dependent variable regression analysis. Standardized regression weights of the construct's measurement items are greater than 0.05, confirming the model's convergent validity. Multicollinearity was also examined through tolerance and VIF indices (Midi et al., 2010). There is no evidence of multicollinearity in our study since the VIF indices are below the value of 10.

## **4.5 Descriptive Statistics**

The means and deviations of all items comprising the dimensions of the construct under examination are presented below.

Regarding the first construct of selection criteria, the mean values of the "cost" factor ranged from 5.42 to 5.84, and their standard deviation values ranged from 1.237 to 1.523. The item "the relative cost of the service provided in relation to competition" had the highest mean (5.84) and lowest standard deviation (1.237). In contrast, the item "the commission charged from the manning agency" had the lowest mean (5.42) and the highest standard deviation (1.523). The "brand name/reputation" items had mean values

ranging from 4.83 to 6.06 and standard deviations from 1.073 to 1.771. The item “the reputation the manning agency has on the market” has the highest mean (6.06), while “personal relationship with the owner of the manning agency” had the lowest (4.83). The items comprising the “crew” dimension had mean values extending from 2.99 to 6.54 and standard deviations from 0.692 to 1.937. The highest mean value belonged to the item “the quality and the characteristics of the recommended crew” while the lowest mean value was found for “the Religion of the recommended crew”. In this dimension, the item “crew availability from MA to meet our company’s usual needs” had the lowest standard deviation (0.692). Continuing with the items forming the “company” dimension, mean values ranged from 5.05 to 6.45 and their standard deviation from .0850 to 1.745. The item “the way the MA responds to possible problems should they appear” had the highest mean value (6.45), and the item “the size of the manning agency” the lowest (5.05). Finally, on the “quality” dimension, the item's values range from 5.78 to 6.56 and their standard deviations from 0.660 to 1.091. The item “the courtesy of the personnel of the MA” present the lowest mean value, while the item “the trust that the MA will deliver as promised” had the highest.

Table 4.2 Descriptive Statistics -Selection Criteria

<b>Selection Criteria</b>	Mean	Std. Deviation
<b>Cost</b>		
The overall cost of service provided (commissions, crew costs etc)	5.80	1.285
The commission charged from the manning agency	5.42	1.523
The total (absolute) cost of employed seafarers	5.71	1.338
The relative cost of the service provided in relation to competition	5.84	1.237
<b>Brand Name/Reputation</b>		
The reputation the manning agency has on the market	6.06	1.073

The reputation and characteristics of the Director/ Owner of the manning agency	5.70	1.293
The reputation and characteristics of Directors and operators of the manning agency	5.64	1.224
The way the manning agency presents its services (preselection/recruitment processes prior the selection of the manning agency)	5.73	1.313
The recommendations we get for the manning agency from friends/ acquaintances	5.78	1.207
The recommendations we get for the manning agency from other market professionals	5.84	1.101
The list of shipping companies that cooperate with the manning agency	5.82	1.202
Personal relationship with the owner of the manning agency	4.83	1.771
<b>Crew</b>		
Crew availability from MA in order to meet our company's usual needs	6.52	.692
Crew availability from MA in order to meet our company's needs in unusual or extreme cases	6.38	.823
The capability of MA to suggest to us recruitment of totally new crew nationalities for: A. Ratings	5.44	1.494
The capability of MA to suggest to us recruitment of totally new crew nationalities for: B. Officers	5.67	1.614
The quality and the characteristics of the recommended crew	6.54	.726

The quality of the training of the recommended crew	6.42	.722
The offered crew' experience on a specific type of vessel	6.48	.760
The time (years) the crew works for reliable companies	6.35	.771
The Religion of the recommended crew	2.99	1.937
The capability of the MA to control the behavior of the crew, especially in case something goes wrong	6.05	1.199
The common knowledge/ notion on the way the recommended crew is believed to behave (e.g. drinking, shouting)	6.22	1.096
The skills of the offered crew to handle difficult or extraordinary situations	6.17	.853
The Crew evaluation after disembarkation	6.25	1.062
<b>Company</b>		
The size of the manning agency	5.05	1.321
The crew is managed directly from countries of origin (e.g. Philippines)	5.55	1.556
The quality certificates of the manning agency (MA)	6.31	1.067
The number and types of nationalities of the seafarers provided by the manning agency (MA) (Filipinos, Ukrainian, Vietnamese)	5.10	1.745
The management and the organization of the MA	6.07	.903
The specific knowledge from MA of the local markets when recruiting crew	6.28	.850
The skills of the crew operators	6.10	1.104

The way the MA respond to possible problems should they appear	6.45	.779
The training centers provided/ owned by the manning agency	5.57	1.347
The web monitoring capability of crew data amendments	5.62	1.294
The communication style' compatibility between the manning agency (MA) and our company	6.15	.913
The forming of personal relationships between the manning agency (MA) and our company	5.44	1.444
<b>Quality</b>		
The courtesy of the personnel of the MA	5.78	1.091
The capability of the MA to understand and correctly respond to our company's needs	6.60	.636
The time required from the MA to respond to our requests	6.55	.660
The accuracy in type of response	6.50	.698
The trust that the MA will deliver as promised	6.56	.678
The reliability of the services provided	6.58	.645
The capability of the MA to handle our company's even unusual or extraordinary needs	6.29	.835
The MA's overall Performance according to our company's expectations	6.50	.669

Considering the construct of value co-creation, the mean and values of the items comprising its eight dimensions were as follows: the items for the "information seeking" dimension ranged from 4.01 to 6.08. The item "we search for information regarding the manning agency from c. other (shipping) companies" had the highest mean value, while

the item "we search for information regarding the manning agency from a. the internet" the lowest. The item "we collect information from many sources regarding overall quality of services, before we choose a manning agency" had the lowest standard deviation (1.132) and "we often seek and appraise manning agency's (MA) performance and way of co-operation with other shipping companies (other than us)" had the highest standard deviation (1.587). Items comprising the "information sharing" dimension had mean values extending from 6.04 to 6.70. "Responsible behavior" dimension items had mean values ranging from 5.49 ("we follow the manning agency's recommendations on issues related to the service provided") to 6.64 ("we honor all our commitments/promises to the manning agency (MA) as agreed (time, cost)") and their standard deviations ranged from 0.670 to 1.049. "Personal interaction" dimension had only two items "friendly relationships are created between our crew department members and the manning agency (MA)" and "we rarely misbehave in our relationship with the manning agency" with mean values of 5.58 and 4.75 respectively. Mean values for "feedback" dimension items ranged from 6.00 to 6.33 while their standard deviations ranged from 0.900 to 1.062. Turning to the "advocacy" dimensions, the mean values of the items extended from 5.35 ("we encourage our friends and acquaintances to use this manning agency") to 5.93 ("we recommend the MA to other shipping companies if we are satisfied"). The dimension of "help" contained two items "we assist the MA to handle crew problems should they appear" and "we seek for advice from third parties when problems with the manning agency arise" with mean values 6.18 and 3.98 and standard deviations of 1.051 and 1.903 respectively. Finally, the "tolerance" dimension consisted of three items and their mean values extended from 4.69 to 5.87 and standard deviation 1.198 to 1.625.

Table 4.3 Descriptive Statistics – Value Co-Creation Behavior

<b>Value Co-Creation Behavior</b>	Mean	Std. Deviation
<b>Information Seeking</b>		
We collect information from many sources regarding overall quality of services, before we choose a manning agency	5.87	1.132



We search for information regarding the manning agency from: a. The internet	4.01	1.865
We search for information regarding the manning agency from: b. Friends and colleagues	5.56	1.469
We search for information regarding the manning agency from: c. Other (shipping) companies	6.08	1.147
We search for information regarding the manning agency from: d. The market	5.82	1.219
We often seek and appraise manning agency's (MA) performance and way of co-operation with other shipping companies (other than us)	5.34	1.587
<b>Information Sharing</b>		
We clearly explain to the manning agency (MA) about the services we want	6.70	.562
We provide the manning agency with all the necessary information in order to provide us with the best possible offer/ solution	6.65	.598
We regularly inform the manning agency (MA) about the existing working conditions on board	6.04	1.120
<b>Responsible Behavior</b>		
We timely respond to all MA's queries regarding service related questions	6.25	.944
We honour all our commitments/promises to the manning agency (MA) as agreed (time, cost)	6.64	.690
We treat the manning agency in a proper and polite way in recognition of its role as our collaborator/ close partner	6.58	.670

We follow the manning agency's recommendations on issues related to the service provided	5.49	1.049
<b>Personal Interaction</b>		
Friendly relationships are created between our crew department members and the manning agency (MA)	5.58	1.287
We rarely misbehave in our relationship with the manning agency	4.75	2.188
<b>Feedback</b>		
If the manning agency has a suggestion to improve the service, we always pay great attention to it	6.00	1.004
When we receive good services from the manning agency we appreciate and comment on it	6.25	.973
When we experience a problem with the crew, we inform the MA and ask for their help to solve the problem	6.33	.900
<b>Advocacy</b>		
We say positive things about the MA to others	5.82	1.062
We recommend the MA to other shipping companies if we are satisfied.	5.93	1.190
We encourage our friends and acquaintances to use this manning agency	5.35	1.440
<b>Help</b>		
We assist the MA to handle crew problems should they appear	6.18	1.051
We seek for advise from third parties when problems with the manning agency arise	3.98	1.903
<b>Tolerance</b>		

Even If the service from the MA is not exactly delivered as promised we are willing to put up with it	4.69	1.625
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	5.87	1.198
Even If we have to wait longer than we normally expected to receive the services from our MA, we are willing to adapt	4.69	1.466

For the Organizational Culture construct and its first dimension, “hierarchical” culture, the mean values of the items ranged from 4.63 (“even small matters have to be referred to someone higher up for a final answer”) to 6.21 (“our management style prioritizes conformity, predictability and stability”) and their standard deviations ranged from 0.830 to 1.756. The mean values for the second dimension “group” culture extended from 5.65 (“employees are encouraged to take decisions”) to 6.43 (“our employees are encouraged to work as a team, exchange opinions, experiences, and ideas”) and their standard deviation ranged from 0.884 to 1.163. The dimension of “rational” culture had items with mean values ranging from 5.24 (“our management style is characterized by hard driving competitiveness, high demands and individual achievement”) to 6.08 (“objectives and targets are clearly defined”). The last dimension of “developmental” culture had items with mean values ranging from 4.39 (“Our management style is characterized by individual risk-taking, innovation, freedom, and uniqueness”) to 5.80 (“We make an effort to anticipate the potential aspects of new practices and technologies”).

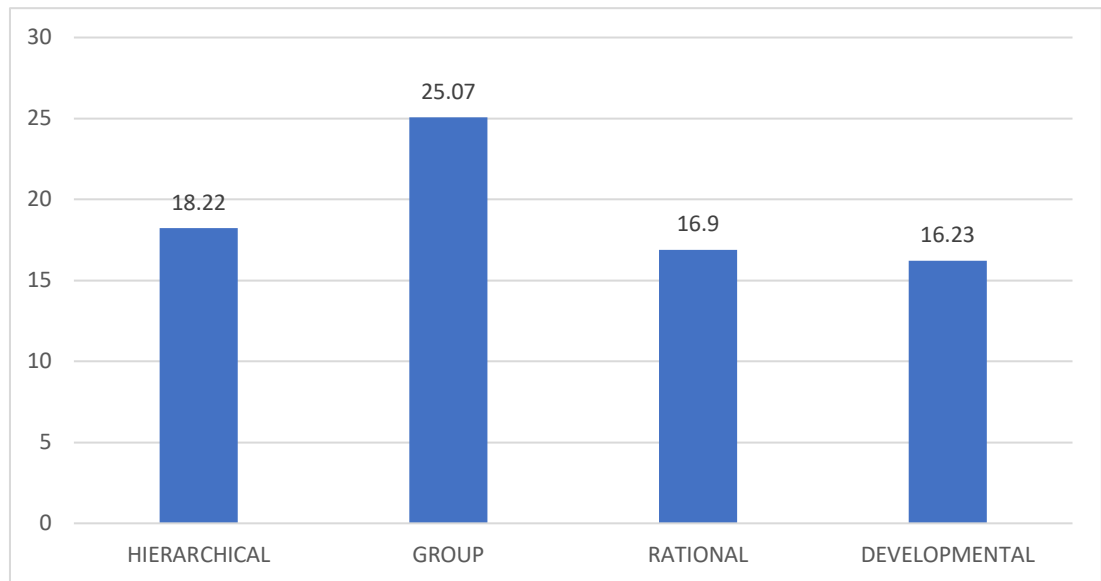
Descriptive Statistics regarding the types of organizational culture existing in Greek shipping companies reveal that group type had the highest mean 25.07. The hierarchical type had a mean of 18.22m, whereas rational and developmental type of organizational culture had a mean 16.9 and 16.22 respectively.

Table 4.4 Descriptive Statistics – Organizational Culture

<b>Organizational Culture</b>	Mean	Std. Deviation
<b>Hierarchical</b>		
Formalized procedures generally govern what people do.	5.85	1.079
We emphasize efficiency and control to reach predictable performance results.	6.16	.830
Reliable delivery, smooth scheduling and low-cost production are the main focus.	5.93	1.132
Our management style prioritizes conformity, predictability and stability.	6.21	.829
Even small matters have to be referred to someone higher up for a final answer	4.63	1.756
<b>Group</b>		
The development of human resources and concern about employees are highly valued.	6.22	1.022
Our employees are encouraged to work as a team, exchange opinions, experiences, and ideas	6.43	.819
Employees can openly discuss their opinions and ideas with someone higher up.	6.32	.884
Employees are encouraged to take decisions.	5.65	1.163
Our management style is characterized by teamwork, consensus and participation.	6.10	1.007

<b>Rational</b>		
Success is defined on the basis of winning and leading in the marketplace	5.70	1.114
Our reward system encourages reaching planned goals.	5.41	1.416
We are results oriented, people are very competitive and achievement oriented.	5.39	1.200
Objectives and targets are clearly defined.	6.08	.951
Our management style is characterized by hard driving competitiveness, high demands and individual achievement.	5.24	1.427
<b>Developmental</b>		
We emphasize prospecting for opportunities and creating new challenges	5.56	1.024
We make an effort to anticipate the potential aspects of new practices and technologies.	5.80	.996
We are a very dynamic entrepreneurial place, which leads people to taking risks.	4.58	1.440
Our management style is characterized by individual risk-taking, innovation, freedom, and uniqueness.	4.39	1.571
We define success on the basis of innovation and having newest services.	4.83	1.381

Table 4.4.1 Descriptive Statistics – Organizational Culture Types in Greek Shipping Companies



The Organizational Cultural intelligence construct consisted of five factors. The “leadership behavior” dimension item with the lowest mean value was “ship’s top management modifies its nonverbal behavior (for examples gestures) when a cross-cultural interaction requires it” (4.84). In contrast, the item with the highest “ship’s top management is confident handling the stress of working within new cultures” (5.67)—standard deviation of the items in this dimension ranged from 1.158 to 1.643. Regarding the “adaptability” dimension, the item “the organization adapts its ways of operations when operating in differing cultural environments” had the lowest mean (5.54), “ship’s top management has extensive international experience” had the highest mean value (5.95). In contrast “the organization adapts its ways of operations when operating in differing cultural environments” had the highest standard deviation. The “training” dimension consisted of five items. “the organization has processes in place to facilitate cultural learning” had the lowest mean value (4.25) and “the organization is committed to producing top management for the ships who are bi-cultural or multicultural in its skillset” had the highest mean value (4.99). The dimensions of “intentionality” and “inclusion” composed of three-items each had mean values ranging from 5.15 to 5.99 and 5.30 to 6.19, respectively.

Descriptive Statistics regarding the dimensions of organizational cultural intelligence in Greek shipping companies reveal that adaptability and training had the

highest mean 23,2 and 23,6 respectively. The dimension of inclusion had a mean 17.3, whereas intentionality and leadership behavior had a mean 16.4 and 16.2 respectively.

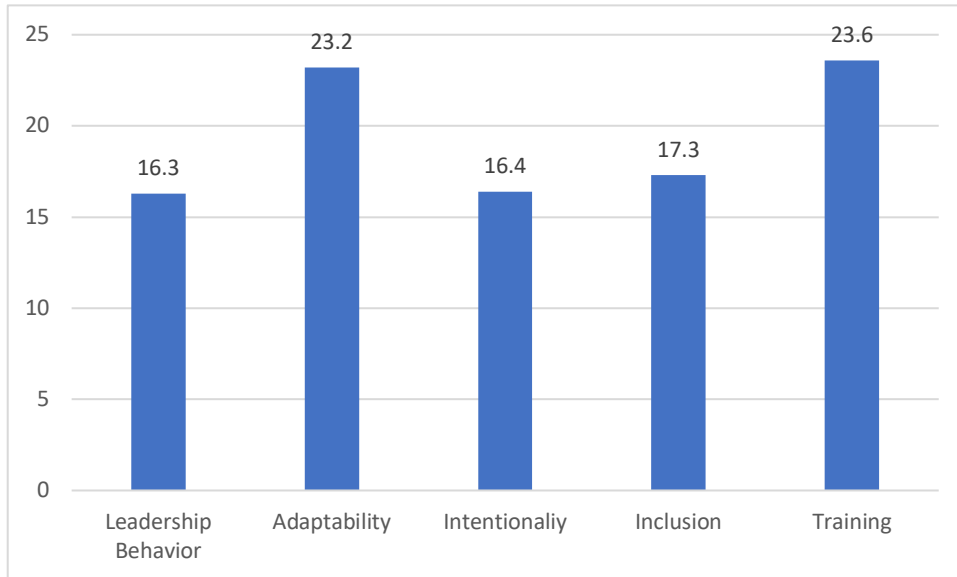
Table 4.5 Descriptive Statistics – Organizational Cultural Intelligence

<b>Organizational Cultural Intelligence</b>	Mean	Std. Deviation
<b>Leadership Behavior</b>		
Ship's top management modifies its nonverbal behavior (e.g. gestures) when a cross-cultural interaction requires it	4.84	1.643
Ship's top management is confident handling the stress of working within new cultures	5.67	1.158
Ship's top management modifies personal verbal behaviors (words, tone, and style) when a cross-cultural interaction requires it	5.28	1.492
Ship's top management checks accuracy of cultural knowledge when interacting with people from different backgrounds	5.36	1.237
<b>Adaptability</b>		
Ship's top management has extensive international experience	5.95	1.117
Ship's top management is aware of cultural differences- cultural values and religious beliefs- when interacting with people of different cultural backgrounds	5.89	1.142
Ship's top management is confident working with people of other cultures	5.79	1.256
The organization adapts its ways of operations when operating in differing cultural environments	5.54	1.413

<b>Training</b>		
The organization offers training to facilitate cultural learning	4.41	1.862
The organization trains ship's top management on how to manage conflicts arising among people (crew) from different countries	4.96	1.741
The organization engages in cross-cultural learning through consistently reviewing its process and practices in order to learn and adapt	4.95	1.571
The organization has processes in place to facilitate cultural learning	4.25	1.724
The organization is committed to producing top management for the ships who is bi-cultural or multicultural in its skill set	4.99	1.616
<b>Intentionality</b>		
The organization asks ship's top management for feedback after communicating with people from different cultures	5.22	1.661
The organization intentionally monitors ship's top management interactions with people from different cultures	5.15	1.655
The organization insists on avoiding expressions or words that can be considered offensive to people of different cultures, ethnicity, religion, gender etc.	5.99	1.367
<b>Inclusion</b>		
The organization is inclusive. It gives equal opportunity to employees regardless of gender, ethnicity, and so on.	6.19	1.170
The organization strategically makes use of the diverse voices within the organization	5.30	1.349
The organization understands the dynamics of diversity and inclusion	5.78	1.128



Table 4.5.1 Descriptive Statistics – Organizational Cultural Intelligence dimensions in Greek shipping companies



## CHAPTER 5 RESULTS AND DISCUSSION

Chapter 5 provides each hypothesis's test results and then discusses the findings for each hypothesis.

### 5.1 Test of Hypothesis 1

The first hypothesis aims to examine the criteria shipping companies use to choose business partners, in this case manning agencies. Based on the general literature on partner selection criteria (Aguzzoul, 2014; Solesvik and Westhead, 2010; Panayides and Cullianae 2002), five broad categories of selection criteria were established: cost/ budget, brand name/reputation, crew characteristics, company characteristics, and quality. Manning agencies provide seafarers services and charge fees based on seafarers' rank. Since these fees do not vary significantly, it is presumed that the criterion of cost/budget does not play a significant role in the partner selection process. Moreover, recent studies have shown that cost is the least important criterion when selecting partners highlighting other criteria as more important (Luthra et al., 2017; Taherdoost and Brard, 2019; Asuquo, 2014; Cariou and Wolf, 2011).

To test this assumption, correlation analysis was used to investigate the strength of the variables' relationship. To do so, we use summated scales of all items and conducted a correlation analysis between each criterion and each dimension of organizational culture and cultural intelligence. We concluded that the cost/ budget selection criterion has no significant effect on our variables. Therefore, we excluded it from the statistical analysis (see Appendix A).

So far in the literature, there is no universal business partner selection criteria applicable to every case. Choosing a business partner' is a process that differs depending on the stakeholders' aspirations (Wetzstein, 2019; Ellram, 1990). Therefore, we first conducted exploratory factor analysis (EFA) with varimax rotation to test the factorial structures of our construct, selection criteria.

The EFA results (see Table 5.1) provided us with seven factors consisting of the following selection criteria: 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 seven factors have been renamed according to the loadings of the items to be easily understandable.

Table 5.1. Exploratory Factor Analysis factor loadings of Selection Criteria

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.818
Bartlett's Test of Sphericity	Approx. Chi-Square	2.525.772
	df	253
	Sig.	.000
<b>COMPONENT</b>	<b>FACTOR LOADINGS</b>	
<b>QUALITY</b>		
The trust that the ma will deliver as promised		.834
The accuracy in the type of response		.824
The reliability of the services provided		.823
The capability of the ma to understand and correctly respond to our company's needs		.775
The time required from the ma to respond to our requests		.759
The ma's overall performance according to our company's expectations		.655
The quality and the characteristics of the recommended crew		.479

<b>REPUTATION</b>	
The reputation and characteristics of the director/ owner of the manning agency	.813
The reputation and characteristics of directors and operators of the manning agency	.805
The reputation the manning agency has on the market	.786
The way the manning agency presents its services (preselection/recruitment processes prior the selection of the manning agency)	.661
<b>RECRUITMENT</b>	
The capability of ma to suggest to us recruitment of totally new crew nationalities for: b. Officers	.938
The capability of ma to suggest to us recruitment of totally new crew nationalities for: a. Ratings	.936
<b>RECOMMENDATION</b>	
The recommendations we get for the manning agency from other market professionals	.881
The recommendations we get for the manning agency from friends/ acquaintances	.834
<b>CREW CHARACTERISTICS</b>	
The offered crew' experience on a specific type of vessel	.780

The time (years) the crew works for reliable companies	.730
The crew evaluation after disembarkation	.495
<b>CREW MANAGEMENT</b>	
The crew is managed directly from countries of origin (e.g. Philippines)	.835
The web monitoring capability of crew data amendments	.679
The quality certificates of the manning agency (ma)	.450
Personal relationships	
Personal relationship with the owner of the manning agency	.844
The forming of personal relationships between the manning agency (ma) and our company	.840

To validate the structure resulting from EFA, we conducted Confirmatory Factor Analysis (CFA) (see Table 5.2).

Table 5.2. Confirmatory Factor Analysis standardized estimates of Selection Criteria

<b>SELECTION CRITERIA</b>	
<b><i>QUALITY</i></b>	
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
<b>REPUTATION</b>	
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
<b>RECRUITMENT</b>	
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
<b>RECOMMENDATIONS</b>	
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
<b><i>CREW CHARACTERISTICS</i></b>	
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
<b><i>CREW MANAGEMENT</i></b>	
The quality certificates of the manning agency (MA)	0,605
The web monitoring capability of crew data amendments	0,476

The results confirmed our selection criteria construct, providing us with six selection criteria that shipping companies use when selecting a business partner. Quality consists of seven items, and examples include "the quality and the characteristics of the recommended crew", "The MA's overall performance according to our company's expectations", and "the accuracy of service provided". Reputation consists of four items such as "the reputation the manning agency has on the market", "the reputation and characteristics of the Director/owner of the manning agency". Crew characteristics consists of three items including "the time (years) the crew works for reliable companies". Recruitment, recommendation, and crew management consist of two items each. Examples of these dimensions are "the capability of MA to suggest to us recruitment of totally new crew nationalities for ratings", the recommendations we get for the manning agency from friends/ acquaintances", and "the web monitoring capability of crew data amendments".

One factor, personal relationships, was eliminated from further analysis following the CFA 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

## 5.2 Test of Hypothesis 2

The objective of hypothesis 2 is to examine the impact of partner selection criteria on value co-creation behavior. To evaluate the construct of value co-creation, Confirmatory Factor Analysis (CFA) was applied since the construct is based on an existing theory (Hair et al., 2010). Results of the CFA (see Table 5.3) revealed two dimensions: customer participation behavior and customer citizenship behavior. Customer participation behavior consists of three dimensions: information seeking with five items, information sharing with four items, and responsible behavior with three items. Customer citizenship behavior consists of two dimensions: feedback and advocacy, each with three items. Goodness of fit indices indicate a good fit (Chi-square 281.783 p.000, df 129, GFI .888, AGFI .851, CFI .880, RMSEA .069). Following Hair et al.'s (2010) suggestion to avoid problems with the measurement model, all standardized residual covariances are below the limit of 2.5.

Table 5.3 Confirmatory Factor Analysis standardized estimates of Value Co-Creation

	<b>Estimate</b>
customer_participation_behavior <--- VCCB	,819
customer_citizenship_behavior <--- VCCB	,954
INFO_SEEKING <--- customer participation behavior	,562
INFO_SHARING <--- customer participation behavior	,993
RESPONSIBLE_BEHAVIOR <--- customer participation behavior	,999



FEEDBACK	<--- customer citizenship behavior	,821
ADVOCACY	<--- customer citizenship behavior	,508

<b>CUSTOMER VALUE CO-CREATION BEHAVIOR</b>	
<b><i>CUSTOMER PARTICIPATION BEHAVIOR</i></b>	
<b><i>INFORMATION SEEKING</i></b>	
We collect information from any sources regarding overall quality of services before we choose a manning agency	0,731
We search for information regarding the manning agency from friends and colleagues	0,409
We search for information regarding the manning agency from other (shipping) companies	0,566
We search for information regarding the manning agency from the market	0,515
We often seek and appraise manning agency's (MA) performance and way of cooperation with other shipping companies (other than us)	0,490
<b><i>INFORMATION SHARING</i></b>	
We clearly explain to the manning agency (MA) about the services we want	0,611
We provide the manning agency with all the necessary information in order to provide us with the best possible offer/solution	0,742

We regularly inform the manning agency (MA) about the existing working conditions onboard	0,614
We timely respond to all MA's queries regarding service related questions	0,691
<b><i>RESPONSIBLE BEHAVIOR</i></b>	
We honour all our commitments/promises to the manning agency (MA) as agreed (time, cost, etc.)	0,630
We treat the manning agency in a proper and polite way in recognition of its role as our collaborator/ close partner	0,683
We follow the manning agency's recommendations on issues related to the service provided	0,490
<b><i>CUSTOMER CITIZENSHIP BEHAVIOR</i></b>	
<b><i>FEEDBACK</i></b>	
If the manning agency has a suggestion to improve the service, we always pay great attention to it	0,661
When we receive good services from the manning agency we appreciate and comment on it	0,704
When we experience a problem with the crew, we inform the MA and ask for their help to solve the problem	0,517
<b><i>ADVOCACY</i></b>	
We say positive things about the MA to others	0,674
We recommend the MA to other shipping companies if we are satisfied	0,868
We encourage our friends and acquaintances to use this manning agency	0,759

Regression analysis was employed to test hypothesis 2 and investigate the relationship between the examined constructs, selection criteria, and value co-creation. For the regression analysis, we used the summated scales of the constructs. Table 5.4 depicts the selection criteria as the independent variable and value co-creation as a dependent. Table 5.5 presents selection criteria as the independent variable and the two dimensions of value co-creation as the dependent.

Table 5.4 Regression Analysis Results for Selection Criteria and Value Co-creation relationship

Independent Variable	Beta	Sig.	Adj R2	Dependent Variable
Selection Criteria	.650	.000	.420	Value Co-Creation

Table 5.5 Regression Analysis Results for Selection Criteria and Dimensions of Value Co-creation relationship

Independent Variable	Beta	Sig.	Adj R2	Dependent Variable
Selection Criteria	.628	.000	.392	CPB
	.457	.000	.206	CCB

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

Running multiple regression analyses between the already specified selection criteria and value co-creation behavior, reveals that value co-creation behavior is attributed to certain factors such as quality, recommendation, and crew management. The results are presented below in Table 5.6. The factors enhancing the value co-creation between the shipping companies and their business partners (manning agencies) are how manning agencies manage their services, recommendation shipping companies receive about manning agencies, and the quality of the services that manning agencies provide.

Table 5.6 Regression Analysis Results for Selection Criteria Dimensions and Value Co-creation relationship

	<b>Dependent Variable: VCCB</b>
<b>Independent Variables Selection Criteria</b>	<b>Sig. .000</b>
	<b>Adj. R<sup>2</sup>=.477</b>
	<b>F=34.028</b>
	<b>DF(6,239)</b>
	<b>Standardized beta</b>
Quality	.265 (sig.000)
Reputation	.070 (ns.248)
Recruitment	.105 (sig.038)
Recommendation	.238 (sig.000)
Crew Characteristics	.111 (ns.052)
Crew Management	.238 (sig.000)

According to the above results, the selection criteria significantly impact value co-creation behavior. Quality (b=0.265), recommendation (b=0.238), crew management (b=.238) and recruitment (b=.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 statistical significance. Following the above, Hypothesis 2 is partially supported.

The above results empirical demonstrate the importance of business partner selection to value co-creation, reaffirming previous studies who suggested examining this significance (Diaz-Mendez and Saren, 2019; Diestre and Rajagopalan, 2012; Emden et al., 2006)

Shipping companies need to share information to establish long-term quality relationships (Hsu et al., 2008; Wong et al., 2005). However, their long-term viability is subject to top management's attitude and behavior (Stahl and De Luque, 2014). Crew management, therefore, emerges as an important selection criterion.

### 5.3 Test of Hypothesis 3

The purpose of hypothesis 3 is to examine whether the organizational culture measurement model also applies to shipping companies. Confirmatory Factor Analysis (CFA) was utilized, using the maximum likelihood estimation, to test our theory-based construct of organizational culture. This construct's structure was derived from the existing literature and theories; therefore, CFA was considered an appropriate method to examine their nature (Jackson et al., 2009). Following Hair et al.'s (2010) suggestion to avoid problems with the measurement model, all standardized residual covariances are below the limit of 2.5.

Table 5.7 Confirmatory Factor Analysis standardized estimates of Organizational Culture

<b>ORGANIZATIONAL CULTURE</b>	
<b><i>HIERARCHICAL TYPE</i></b>	
Formalized procedures generally govern what people do	0,608
We emphasize efficiency and control to reach predictable performance results	0,784
Our management style prioritizes conformity, predictability, and stability	0,615
<b><i>GROUP TYPE</i></b>	
The development of human resources and concern about employees are highly valued	0,652
Our employees are encouraged to work as a team, exchange opinions,	0,713

experiences, and ideas	
Employees can openly discuss their opinions and ideas with someone higher up	0,555
Our management style is characterized by consensus and participation	0,600
<b><i>RATIONAL TYPE</i></b>	
Our reward system encourages reaching planned goals	0,619
We are results-oriented, people are very competitive, and achievement-oriented	0,538
Objectives and targets are clearly defined	0,650
<b><i>DEVELOPMENTAL TYPE</i></b>	
We emphasize prospecting for opportunities and creating new challenges	0,833
We make an effort to anticipate the potential aspects of new practices and technologies	0,669
We define success on the basis of innovation and having the newest services.	0,543

The CFA of organizational culture (see Table 5.7) revealed four types of organizational culture (the hierarchical, group, rational and developmental types) indicating a good fit (Chi-square 110.625, p.000, chi-square/df 1.875, GFI 0.936, AGFI 0.901, NFI 0.881, CFI 0.939, RMSEA 0.060). The hierarchical and rational types of organizational culture consist of three items. Examples of each are “formalized procedures generally govern what people do” and “our reward systems encourage reaching planned goals”. The group and developmental types of organizational culture consist of four items. Examples include “employees can openly discuss their opinions and ideas with someone higher up” and “we define success on the basis of innovation and having the newest services.

Based on the above results, we confirm the tested measurement theory. Therefore, hypothesis 3 is supported.

## 5.4 Test of Hypothesis 4

Hypothesis 4 aims to investigate the relationship between organizational culture and selection criteria. To this end, regression analysis was applied, and we used the summated scales of the constructs based on their structure.

Table 5.8 Regression Analysis Results for Organizational Culture and Selection Criteria relationship

Independent Variable:	Adj R <sup>2</sup>	Dependent Variable
Organizational Culture	.295	Selection Criteria
.546 (sig .000)		

A simple linear regression was carried out to test if organizational culture has an impact on selection criteria. The results indicate that the model explained 29.5% of the variance (see Table 5.8).

According to the above results, organizational culture positively and significantly impacts selection criteria ( $b=0.546$ ,  $p < 0.000$ ). These results support our hypothesis that shipping companies' differing core values, beliefs, behaviors, and practices affect the criteria they use to select manning agencies as business partners.

We ran regression analyses using the SPSS statistical package to investigate the relationships between the four different types of organizational culture and selection criteria. Table 5.9 presents the results.

Table 5.9 Regression Analysis Results of Organizational Culture types and Selection Criteria

Dependent Variables					
Independent Variables: Types of Organizational Culture					
Hierarchical	Group	Rational	Developmental	Adj R <sup>2</sup>	
.213(sig.001)	.152(sig.023)	.205 (sig.005)	.144 (sig.029)	.291	Selection Criteria

As illustrated above, organizational culture has a significant and positive impact on selection criteria. Moreover, it was found that all dimensions of organizational culture affect selection criteria, though hierarchical and rational type of organizational culture had a stronger impact.

To further investigate the relationship between organizational culture types and selection criteria, we reran a regression analysis. Table 5.10 presents the results.



Table 5.10 Regression Analysis Results of Organizational Culture types and Selection Criteria dimensions

Independent Variables				Dependent Variable	Selection Criteria
Types of Organizational Culture					
Hierarchical	Group	Rational	Developmental	Adj R2	
<b>.233</b>	<b>.156</b>	.134	.059	.193	<b>Quality</b>
<b>(sig.001)</b>	<b>(sig.029)</b>	(ns.084)	(ns.396)		
<b>.145</b>	.114	<b>.199</b>	<b>.185</b>	.236	<b>Reputation</b>
<b>(sig.026)</b>	(ns.099)	<b>(sig.009)</b>	<b>(sig.007)</b>		
.033	.145	-.045	.067	.015	<b>Recruitment</b>
(ns.658)	(ns.066)	(ns.596)	(ns.386)		
.068	.014	.134	.015	.022	<b>Recommendation</b>
(ns.351)	(ns.853)	(ns.117)	(ns.841)		
<b>.196</b>	.049	<b>.251</b>	-.012	.153	<b>Crew Characteristics</b>
<b>(sig.004)</b>	(ns.498)	<b>(sig.002)</b>	(ns.869)		
<b>.138</b>	.040	<b>.161</b>	<b>.213</b>	.174	<b>Crew Management</b>
<b>(sig.042)</b>	(ns.580)	<b>(sig.041)</b>	<b>(sig.003)</b>		

According to the above table, it is evident that different organizational culture types have a positive and significant impact on different selection criteria. Interestingly, none of the organizational culture types have any significant effect on the criteria of recruitment and recommendation. Furthermore, culture type does not seem to affect the supply of different ranks of seafarers as both ratings and officers are an integral part of manning shipping companies' vessels. Moreover, shipping companies, irrespective of their company culture, seek recommendations for any type of transaction or cooperation.

The quality criterion is significantly influenced by the hierarchical and group types of culture. A hierarchical culture emphasizes control and centralization as well as adherence to rules and bureaucracy. Therefore, quality is important for companies characterized by this type of culture since their goal is the proper operation of the business. Conversely, in companies with a group type of organizational culture, the emphasis is on teamwork, participation, and the work environment. Yet, the quality criterion is once again pertinent because companies with a group culture believe that goals are better achieved through team thinking and operations. At the same time, companies with a group culture enhance the quality of their services.

The criterion of reputation is important for companies characterized by rational, or developmental organizational cultures. The reputation of potential partners is particularly important in shipping where corporate and social relations play a key role. The hierarchical type of culture values the reputation criterion because, given its centralized nature, it wants to ensure that potential partners are credible. The rational type of culture will use the reputation criterion to ensure that potential partners will work toward the desired goal to be crowned with success. The developmental culture type, given its innovative business nature, uses the reputation criterion to ensure that future partners can take the risks required to achieve the goals while having flexibility and adaptability.

The crew' characteristics criterion plays an important role for companies with hierarchical or rational culture tyoes. The companies' management by potential partners is an important criterion for companies with rational, hierarchical, or developmental organizational cultures.

Previous studies have highlighted organizational culture's significant role on the collaboration process between business partners because organizational culture shapes

the behaviors and attitudes of the actors involved (Murphy et al., 2019; Pantouvakis and Buranta, 2017; O'Reilly et al. 2014; Schein, 2010). The above results show that, different emphasis is given to the various criteria used for selecting potential partners depending on the specific company's type of organizational culture.

Evidently, organizational culture influences decision-making regarding partner selection criteria (Gattringeet al.al 2017; Berthon et al., 2001; Ellram, 1990). Moreover, this study's findings provide empirical evidence to support Besson's (2018) argument that external and internal factors, such as organizational culture, impact the desire and motives for collaborations. Therefore, hypothesis 4 is supported.

## 5.5 Test of Hypothesis 5

Hypothesis 5 aims to investigate if the measurement model of organizational cultural intelligence, a newly introduced concept, applies to shipping companies. To examine our second theory-based construct organizational cultural intelligence CFA was employed. Again, CFA was considered appropriate since organizational cultural intelligence is obtained from existing literature and theory (Jackson et al., 2009).

Table 5.11 Confirmatory Factor Analysis standardized estimates of Organizational Cultural Intelligence

<b>ORGANIZATIONAL CULTURAL INTELLIGENCE</b>	
<b><i>LEADERSHIP BEHAVIOR</i></b>	
Ship's top management is confident handling the stress of working within new cultures	0,735
Ship's top management modifies personal verbal behavior (words, tones, and style) when a cross-cultural interaction requires it	0,544
Ship's top management checks the accuracy of cultural knowledge when interacting with people from different backgrounds	

	0,705
<b><i>ADAPTABILITY</i></b>	
Ship's top management has extensive international experience	0,685
Ship's top management is aware of cultural differences- cultural values and religious beliefs- when interacting with people of different cultural backgrounds	0,821
Ship's top management is confident working with people of other cultures	0,700
The organization adapts its ways of operations when operating in differing cultural environments	0,523
<b><i>TRAINING</i></b>	
The organization offers training to facilitate cultural learning	0,654
The organization trains ship's top management on how to manage conflicts arising among people (crew) from different countries	0,841
The organization engages in cross-cultural by consistently reviewing its process and practices in order to learn and adapt	0,833
The organization has processes in place to facilitate cultural learning	0,782
The organization is committed to producing top management for the ships who are bi-cultural / multicultural in its skill set	0,696
<b><i>INTENTIONALITY</i></b>	
The organization asks ship's top management for feedback after communicating with people from different cultures	

	0,824
The organization intentionally monitors ship's top management interactions with people from different cultures	0,863
The organization insists on avoiding expressions or words that can be considered offensive to people of different cultures, ethnicity, religion, gender etc.	0,586
<b><i>INCLUSION</i></b>	
The organization is inclusive. It gives equal opportunity to employees regardless of gender, ethnicity, and so on.	0,563
The organization strategically makes use of the diverse voices within the organization	0,672
The organization understands the dynamics of diversity and inclusion	0,872

The CFA for organizational cultural intelligence (see Table 5.11) revealed five dimensions namely: leadership behavior, adaptability, training, intentionality and inclusion indicating a good fit (Chi-square 297.732, p.000, chi-square/df 2.461, GFI 0.880, AGFI 0.831, NFI 0.869, CFI 0.916, RMSEA 0.077). Leadership behavior, intentionality, and inclusion consist of three items. An example of the leadership dimension is "ship's top management is confident handling the stress of working within new cultures". The dimension of intentionality is expressed, for example, through the statement "the organization intentionally monitors ship's top management interactions with people from different cultures". An example of the dimension of inclusion is "the organization understands the dynamics of diversity and inclusion. The dimension of adaptability consists of four items including "ship's top management is confident working with people of other cultures" and the "ship's top management has extensive international experience". The dimension of training consists of five items including "the organization

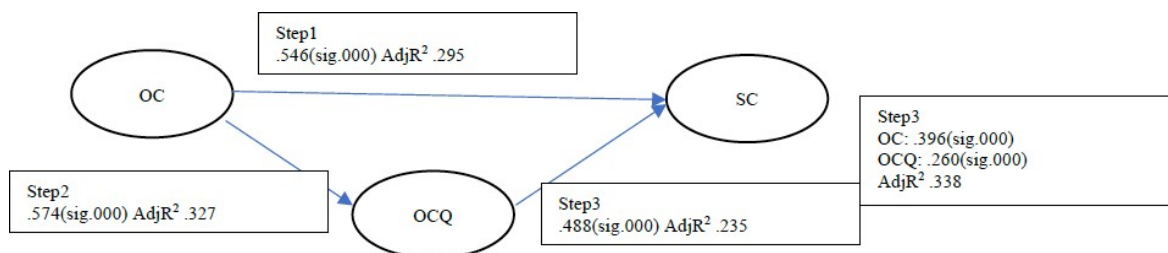
has processes in place to facilitate cultural learning", "the organization offers training to facilitate cultural learning".

Based on the above results, we confirm the tested measurement theory; thus, hypotheses 5 is supported.

## 5.6 Test of Hypothesis 6

The purpose of hypothesis 6 is to investigate if organizational cultural intelligence mediates the relationship between organizational culture and selection criteria, following Barron and Kenny's three steps (1986). These steps are as follows: in step one, the independent variable affects the dependent, in step two, the independent variable affects the mediator, and in step three, both the independent variable and the mediator affect the dependent variable.

Figure 3. Mediation model



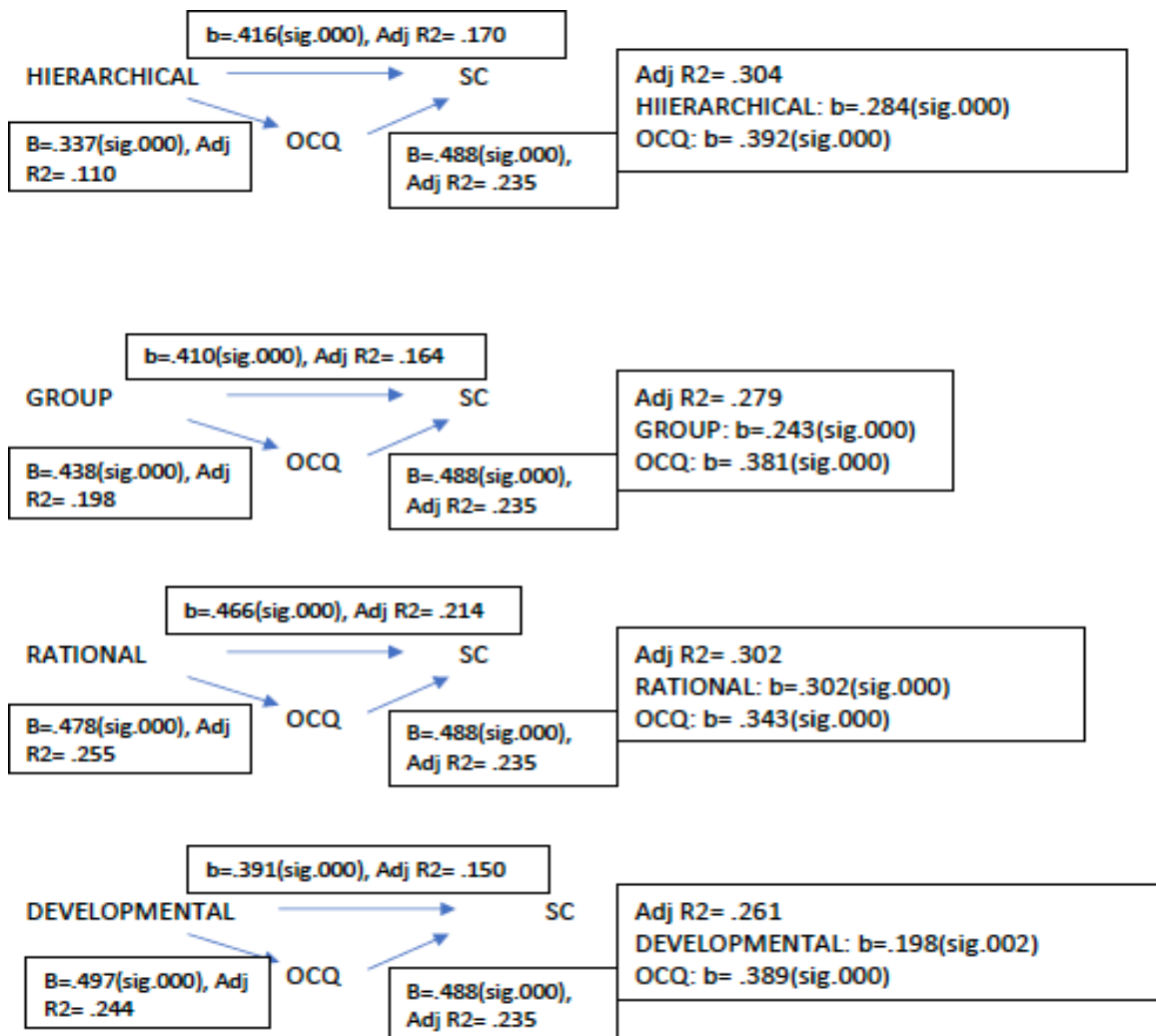
The results presented in figure 3 confirm the three conditions that must be met in order to have a mediation and support our hypothesis. Organizational culture has a strong and positive effect on selection criteria ( $b=0.546$ ,  $p< 0.000$ ,  $Adj R^2= 0.295$  and organizational cultural intelligence ( $b=0.574$ ,  $p< 0.000$ ,  $Adj R^2= 0.327$ ). Finally, the mediator organizational cultural intelligence) significantly influences selection criteria ( $b= 0.488$ ,  $p< 0.000$ ,  $Adj R^2= 0.235$ ).

Regarding the influence of both organizational culture and organizational cultural intelligence have on selection criteria, the results reveal that organizational cultural intelligence has a weaker influence than organizational culture ( $b=0.396$   $p< 0.000$  and  $b=0.260$   $p< .000$ ,  $Adj R^2=.338$  respectively). It is evident from the results that companies will form better communication and interaction channels within their clients and partner

network and strengthen business relationships, if companies put an emphasis on their organizational culture and cultural intelligence. Thus, shipping companies need to develop a culture that fosters employee engagement regarding cultural differences (Patrick and Kumar, 2012).

Studies have proposed examining cultural intelligence as mediating factor because of its potential to facilitate relationships, improve decision-making and enhance managerial capabilities in different cultural contexts (Ott and Michailova, 2018; Yitmen, 2013; Ang and Inkpen, 2008; Ang et al., 2007).

Figure 4. Mediation model in different types of organizational culture



Using the Barron and Kenny mediation process again for different cultural types, the results show that the hierarchical and rational culture models account for a more significant percentage of the variance (30.4%, and 30.2%, respectively) (see Figure 4).

Considering the above figures, which depict the mediation effect based on different types of organizational culture, it becomes apparent that cultural intelligence is an important capability for organizations. More specifically, companies with a stricter command of control or rational way of operating can benefit from organizational cultural intelligence regarding their partnerships. They can develop effective leadership, which affects employee engagement and organizational performance (Van Dyne et al., 2010); Ang and Inkpen, 2008). Culturally intelligent companies can manage diversity to their advantage, interact effectively with their partners, and exploit resources while increasing their flexibility to operate in diverse environments (Eloranta and Turunen, 2015; Alcazar et al., 2013).

The above results, support the hypothesis that organizational cultural intelligence partially mediates the relationship between organizational culture and selection criteria.

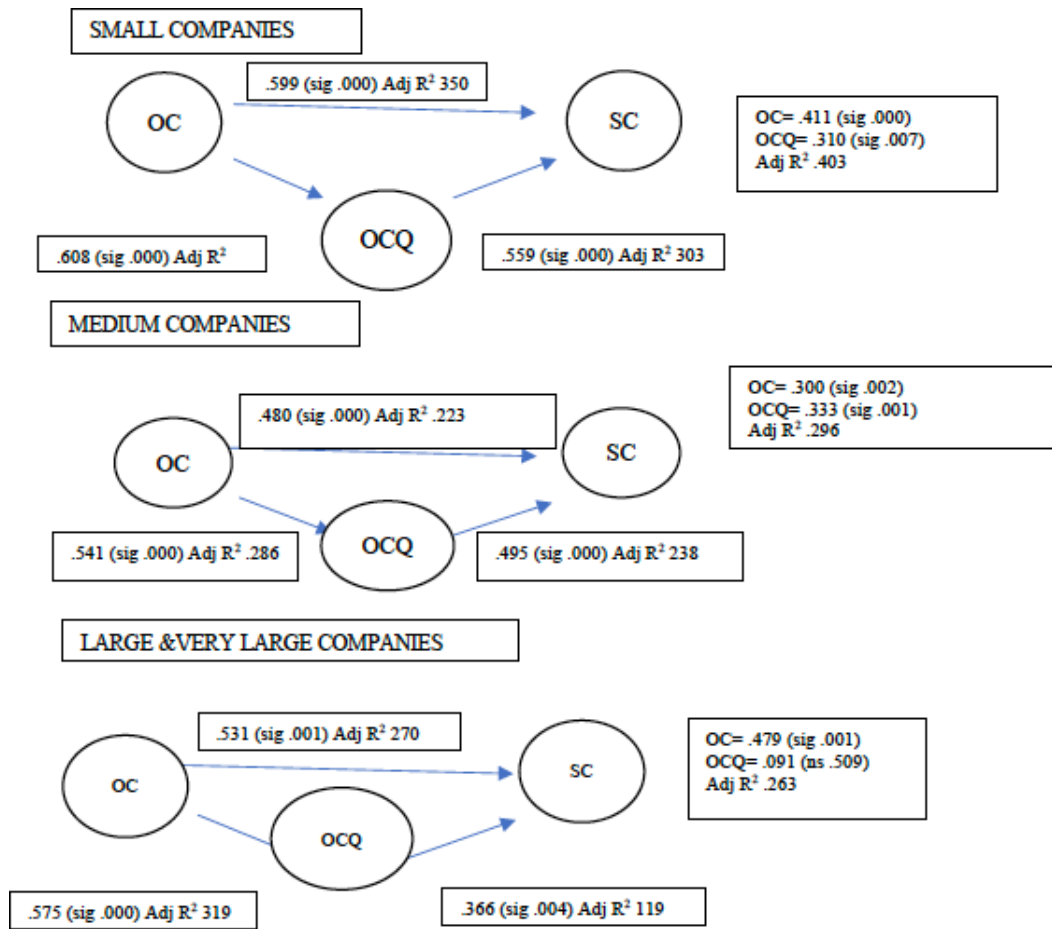
### **5.7 Test of Hypotheses 7a and 7b**

We ran a regression analysis to test hypothesis 7a that size moderates the relationship between organizational culture, cultural intelligence, and selection criteria. Based on our survey sample, out of the 246 participating companies, 76 are considered small, 110 are medium, and 60 are large and very large. Respondents were asked how they considered the size of their company compared to their competitors.

Size plays an important role in the pursuit of competitive advantage. According to the results, organizational cultural intelligence facilitates small and medium-sized companies in selecting external partners. The three stages of the mediation process confirm our model.



Figure 5. Moderation model



More specifically, following Barron and Kenny's (1986) regression, one can notice that the first stage presents an important and positive relationship between the organizational culture and the selection criteria for all three sizes; small-sized companies have a  $b=0.599$  sig.000, and Adj R<sup>2</sup>=0.350, medium-sized companies have a  $b=0.480$  sig.000 and Adj R<sup>2</sup>=0.233, and large and very large companies have a  $b=0.531$  sig.000 and Adj R<sup>2</sup>=0.270.

The same appears to be valid for the second stage, where the organizational culture positively and significantly affects companies' ability to manage their multicultural environment. As indicated on the second stage results, small-sized companies have a  $b=0.608$  sig.000, and Adj R<sup>2</sup>=0.361, medium-sized companies have a  $b=0.541$  sig.000 and Adj R<sup>2</sup>=0.286, and large and very large companies have a  $b=0.575$  sig.000 and Adj R<sup>2</sup>=0.319. Organizational cultural intelligence as a mediator significantly impacts the dependent variable of selection criteria in small and medium-size companies ( $b=0.599$ ,  $p<.000$ , Adj R<sup>2</sup>=0.303 and  $b=0.495$ ,  $p<.000$ , Adj R<sup>2</sup>=0.138) respectively.

The mediation process is verified in the third stage, as the influence of organizational culture and organizational cultural intelligence on partner selection criteria is positive and statistically significant only for small- and medium-sized companies. For large companies, organizational culture has a significant impact, but organizational cultural intelligence does not significantly affect the selection criteria, supporting no mediation effect.

As the research results show, size has a moderating role for small and medium-sized companies, but not for large and very large ones. For small companies, the results demonstrate stronger results than for medium- ones. In general, for all sizes of company organizational culture positively and strongly influences cultural intelligence and selection criteria. However, differences in size may explain the research findings.

Small companies lack resources (tangible or otherwise) compared to medium and large companies. Small companies' main shortcomings are focused on finances and staff (Theotokas and Progoulaki, 2007). The lack of these two resources hinders company growth and development, while in times of crisis their paucity renders smaller companies vulnerable to their competitors (Jeng and Pak, 2016).

Research in the shipping industry suggests that large and medium-sized companies prevail as they have the resources to support investments, such as technology equipment, which make their operations more efficient. This superiority puts them in a more advantageous position in innovation and, consequently, in profitability and customer allurements. However, it is argued that this does not correlate with customer satisfaction. In the shipping industry, relationships are based on trust cultivated by constant contact with customers and partners (Lun and Quaddus, 2011).

Nevertheless, Greve (2010) states that large companies thanks to their resources, can take bigger and more risks since they are more capable of compensating for any losses. However, due to the fewer layers of management, small companies can have more flexibility, which results from the direct contact with their partners and customers, so they acquire faster and more immediate knowledge of opportunities (or threats) to adapt their moves.

Regression analysis was again employed to investigate hypothesis 7b that size has a moderating role between selection criteria and value-creation behavior. The dimension of value co-creation behavior were used as the dependent variable, while selection criteria was used as an independent variable. For regression analysis, the summated scales of the constructs were used. The table (5.12) below provides the regression results.

*Table 5.12 Regression Analysis Results of Selection Criteria and Value Co-Creation dimensions per company size*

	<b>Dependent variable: Customer participation behavior</b>		<b>Dependent variable: Customer citizenship behavior</b>	
<b>Independent variable Selection Criteria</b>	<b>Standardized beta</b>	<b>Adj. R<sup>2</sup></b>	<b>Standardized beta</b>	<b>Adj. R<sup>2</sup></b>
<b>Small</b>	.597 (sig.000)	.348	.499 (sig.000)	.239
<b>Medium</b>	.753 (sig.000)	.563	.506 (sig.000)	.249
<b>Large and Very Large</b>	.365 (sig.004)	.118	.306 (sig.018)	.078

As per the research findings, selection criteria positively impact value co-creation behavior for all sizes of company. Nevertheless, one can notice that medium-sized companies provide the strongest results. In contrast, for large and very large companies, the dimension of customer citizenship behavior, although seemingly significantly affected by selection criteria has a low Adj. R<sup>2</sup> = 0.078, which means that it is not explaining much (7,8%) in the variation in selection criteria.

To examine which of the selection criteria has the greatest influence on value co-creation behavior in the context of company size, multiple regression analysis was used. The table below (5.13) shows the results.

Table 5.13 Regression Analysis Results of Selection Criteria dimensions and Value Co-Creation per company size

	<b>Dependent variable: VCCB</b>		
	<b>SMALL</b>	<b>MEDIUM</b>	<b>LARGE and VERY LARGE</b>
<b>Independent variables</b>	Adj.R <sup>2</sup> =.455 F = 11.415 DF (6,69)	Adj. R <sup>2</sup> =.556 F = 23.774 DF (6,103)	Adj. R <sup>2</sup> =.181 F = 3.173 DF (6,53)
	<b>Standardized beta</b>		
Quality	.339(sig.003)	.207(sig.013)	.197(ns.126)
Reputation	.096(ns.339)	.132(ns.091)	.201(ns.20)
Recruitment	.061(ns.534)	.111(ns.088)	.171(ns.175)
Recommendation	.207(sig.034)	.230(sig.003)	.257(sig.015)
Crew characteristics	.001(ns.989)	.244(sig.003)	.095(ns.493)
Crew Management	.314(sig.004)	.219(sig.004)	.150(ns.306)

The above results are interesting. Selection criteria significantly impacts co-creation behavior in all three groups (small, medium and large and very large companies). Nevertheless, the strength of the impact differs across the groups. Specifically, for small-sized companies, the criteria of quality (b=0.363) and crew management (b=0.346) have a strong effect. In contrast, for large and very large-sized companies, only the criterion of recommendation (b=0.333) plays an important role. On the other hand, every single selection criterion has a strong and significant effect on medium-sized companies.

## CHAPTER 6 CONCLUSIONS

Chapter 6 summarizes this thesis's findings, discusses the managerial implications and concludes with the limitations and avenues for future research.

Shipping companies operate in a globalized and ever-changing environment. Their functions require interaction with international employees, companies and organizations with different cultures and mentalities. An important factor for companies' survival and successful operation is the creation of mutually beneficial partnerships. These can be achieved through carefully selecting partners and by developing the ability to manage people from different cultural backgrounds.

This research makes two main contributions. Initially, it presented and empirically evaluated a different aspect of value co-creation, focusing on the behavioral side of actors, which is a prerequisite for co-creating value in the shipping industry. Then, through the presentation of empirical data, shipping companies' cultural intelligence was evaluated as a useful attribute when selecting business partners with a view to value co-creation. The research findings add empirical evidence to the subject areas of value co-creation and cultural intelligence in the shipping industry, which are underexplored but have piqued academic interest in recent years.

To conclude, the present research sought to highlight the importance of creating beneficial value between partner companies and the importance of cultural intelligence (the ability to interact with other companies and individuals) given the globalized and multicultural environment in which shipping companies operate. It also determined the criteria companies use to select business partners and the relationship between organizational cultures and these criteria with reference to companies' cultural intelligence.

The research's first objective was to identify the criteria shipping companies use to select manning agencies as external partners. The results concluded that the criteria shipping companies rely on to work with companies engaged in human resources management, such as manning agencies, emphasize the following characteristics: the quality of the services provided, (their response time, reliability, and trustworthiness); the potential partners reputation (referring to the characteristics of both the owner and

the operators, as well as to their general market image); recommendations of potential partners from other companies; the ability to propose and provide crews of different cultures for ratings and officers; crew characteristics, (their experience, their evaluation and previous service); and finally, the way crews are managed by the manning agency.

Another purpose of the research was to examine the influence of selection criteria on value creation. Based on the results, the behavior of the actors (shipping companies and crew companies) regarding participating in the creation of beneficial value is significantly influenced by the characteristics that shipping companies consider when selecting partners. Specifically, quality of services, recommendations, and crew management are important levers for co-creating value. Important factors to consider when assessing a potential partner's likelihood to behave in a mutually beneficial way in a partnership are positive recommendations; how the services provided by potential partners are managed; and quality characteristics, such as time and manner of response and performance.

The present study highlighted the importance of organizational culture and explored different cultural types in the shipping industry. According to the results, four types of the organizational culture- hierarchical, group, rational, developmental- exist in the shipping industry. Organizational culture shapes and determines companies' attitudes, behaviors, and, therefore, decision-making. An additional aim of this study was to examine the influence of organizational culture and its different types on partner selection. The results showed that all cultural types significantly impact the criteria used to select partners. In a further investigation into the relationship between types of organizational culture and selection criteria dimensions, several differences emerged. Companies emphasize different criteria depending on their type of culture. The hierarchical type of culture focuses on quality, reputation, crew characteristics, and crew management whereas the group type of culture emphasizes. The rational type of culture targets reputation, crew characteristics, and crew management criteria, and finally, the developmental type of culture focuses on reputation and crew management.

This research examined whether shipping companies' cultural intelligence facilitates better selection of partners based on the companies' organizational culture resulting in more beneficial collaborations. The results suggest that cultural intelligence

partially mediates the relationship between organizational culture and selection criteria. The major contribution is observed on the hierarchical and rational types of culture. However, cultural intelligence has proven to be a driving force in selecting partners in areas characterized by multiculturalism by improving the way decisions are made and the companies' management skills, especially for companies with a strict or more internal focus.

Finally, this thesis asked if the relationships between organizational culture, cultural intelligence, selection criteria and value co-creation alter depending on the size of the shipping company. This thesis found that shipping companies' size is a key factor in these relationships. Small- and medium-sized companies benefit more from cultural intelligence, while large and very large companies are not affected. Regarding the impact of size on the relationship between selection criteria and value co-creation, it is apparent that small and medium-sized companies place more emphasis on quality, recommendations, and crew management while large and very large shipping companies only heed recommendations. It is also evident that larger companies' resources and experience provide them with the ability to manage their human resources and their partnerships.

## **6.1 Managerial Implications**

The present research has significant implications for the managerial level of shipping companies and crew management companies when it comes to establishing successful partnerships. The research enhances the understanding of concepts, such as co-creation of value and cultural intelligence, and it presents a broader picture of the criteria used by shipping companies when selecting external partners (specifically, manning agencies).

The results reveal that the quality of the provided services, and the reputation, and management of the crews are important criteria. Furthermore, recruitment, and crew recommendations, and characteristics emerged as additional important selection criteria. Both shipping companies and manning agencies can consider these findings in order to make themselves more attractive to potential partners. Interestingly, the results dispelled the formerly common understanding that the most important criterion is cost.

Companies seek to partner with enterprises with whom they can negotiate to achieve successful results, which highlights the importance of the selection criteria. Companies need to be able to evaluate their potential partners' characteristics in order to assess how these potential partners will meet their requirements.

Successful partnerships are based on the shared willingness and desire to develop mutually beneficial behavior. Potential partners' characteristics can be indicative of their behavior. Through collaborative relationships, the manifestation of these behaviors can benefit all parties as it enhances reputation and improves decision making. Company managers should particularly emphasize information they receive about potential partners. It should also be understood that shipping companies' role (as customers vis-a-vis manning agencies) is particularly important. All involved actors are an integral part of operations and key to the effectiveness of collaborations and, therefore, to co-creation of value.

When selecting partners, managers must aim to achieve compatibility and complementarity, key elements in maintaining a competitive advantage by creating long-term partnerships.

To achieve this, company managers must pay more attention to both their and potential partners' organizational culture. According to the research results, organizational culture is an important factor influencing the criteria for selecting partners. For the best results, managers must communicate the values, beliefs, and goals to all employees. That said, facilitating a culture that supports diversity and encourages the involvement of all employees in interactions with clients and partners by strengthening professional and collaborative relationships is more pressing given the multinational workforce.

Given shipping companies' multicultural operational environment, cultural intelligence is emerging as a valuable skill for managing the different perceptions and cultures inherent in the ashore and onboard workforce. Cultural intelligence also lays a sound foundation for developing strong relationships that will give companies the competitive edge they seek.



Finally, the research results, revealed that companies of different sizes emphasize different selection criteria, while cultural intelligence has a different effect. Thus, by taking this into account, company managers can improve or change their practices of selecting partners, depending on the desired results of the proposed collaboration. For example, large shipping companies value recommendations when selecting partners, whereas cultural intelligence does not play such a decisive; however, many of their partnerships are short-term or fail.

## **6.2 Limitations and Avenues for Future Research**

We believe that this research paves the way for future research on the co-creation of value, selection criteria, and cultural intelligence. The present study focused on investigating the relationships between shipping companies and crew companies. Future studies may examine the above relationships in different industries and types of cooperation. Furthermore, this study's sample consisted of Greek shipping companies; future research could examine the above relationships in shipping companies from other countries, taking into account the distinction of cultures based on Hofstede's theory.

A limitation of this research is that it focused on one side of the partnership in question, that of the shipping companies. Given that partnerships require more than one actor, it would be helpful to consider relationships at the binary level or even from the partners' perspectives (in this case, the manning agencies perspectives).

Additionally, the study examined differences in partner selection criteria based on organizational culture and organizational cultural intelligence related to the companies' size. It would be interesting to identify other organizational characteristics (such as industry type, age) that impact the relationship between the constructs.

The objective of this research was to examine selecting the optimal business partner, in this case, manning agencies. It would be interesting to examine the selection criteria developed by this research, combined with the factors of organizational culture and cultural intelligence, using different methods (methods other than multiple regression) for the optimal selection of recruitment companies.

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## **Links for further reading on Greek Shipping**

<https://www.ugs.gr/en/greek-shipping-and-economy/greek-shipping-and-economy-2021/>

<https://www.statistics.gr/en/statistics/-/publication/SMA27/->

<https://www.ics-shipping.org/wp-content/uploads/2021/03/ICS-Leadership-Insights-newsletter-April-2021.pdf>

[https://www2.deloitte.com/content/dam/Deloitte/gr/Documents/about/deloitte/gr\\_Deloitte\\_Greek\\_Shipping\\_Impact%202019\\_noexp.pdf](https://www2.deloitte.com/content/dam/Deloitte/gr/Documents/about/deloitte/gr_Deloitte_Greek_Shipping_Impact%202019_noexp.pdf)

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# APPENDIX A- Correlations Analysis and Regression Tables

## Correlations between Selection Criteria and Value Co-Creation Behavior

		COST BUDGET	BRAND NAME REPUTATION	CREW	COMPANY	QUALITY	INFO SH _ LB	ADVOCACY	INFO SEEK	TOLERANCE	FEEDBACK
COST BUDGET	Pearson Correlation	1	.264**	.244**	.120	.192**	.101	.031	.118	.072	.132*
	Sig. (2-tailed)		.000	.000	.060	.002	.116	.629	.065	.260	.039
BRAND NAME REPUTATION	Pearson Correlation	.264**	1	.574**	.588**	.417**	.363**	.344**	.362**	.301**	.326**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000
CREW	Pearson Correlation	.244**	.574**	1	.631**	.602**	.492**	.280**	.347**	.262**	.365**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
COMPANY	Pearson Correlation	.120	.588**	.631**	1	.560**	.524**	.367**	.359**	.360**	.428**
	Sig. (2-tailed)	.060	.000	.000		.000	.000	.000	.000	.000	.000
QUALITY	Pearson Correlation	.192**	.417**	.602**	.560**	1	.558**	.287**	.398**	.161*	.453**
	Sig. (2-tailed)	.002	.000	.000	.000		.000	.000	.000	.012	.000
INFO SH _ LB	Pearson Correlation	.101	.363**	.492**	.524**	.558**	1	.285**	.330**	.251**	.457**
	Sig. (2-tailed)	.116	.000	.000	.000	.000		.000	.000	.000	.000
ADVOCACY	Pearson Correlation	.031	.344**	.280**	.367**	.287**	.285**	1	.143*	.312**	.376**
	Sig. (2-tailed)	.629	.000	.000	.000	.000	.000		.025	.000	.000
INFO SEEK	Pearson Correlation	.118	.362**	.347**	.359**	.398**	.330**	.143*	1	.186**	.281**
	Sig. (2-tailed)	.065	.000	.000	.000	.000	.000	.025		.003	.000
TOLERANCE	Pearson Correlation	.072	.301**	.262**	.360**	.161*	.251**	.312**	.186**	1	.266**
	Sig. (2-tailed)	.260	.000	.000	.000	.012	.000	.000	.003		.000
FEEDBACK	Pearson Correlation	.132*	.326**	.365**	.428**	.453**	.457**	.376**	.281**	.266**	1
	Sig. (2-tailed)	.039	.000	.000	.000	.000	.000	.000	.000	.000	
** Correlation is significant at the 0.01 level (2-tailed).											
* Correlation is significant at the 0.05 level (2-tailed).											

## Correlations between Selection Criteria, Organizational Culture and Organizational Cultural Intelligence

		HIERARCHICAL	GROUP	RATIONAL	DEVELOPMENTAL	LEADERSHIP BEHAVIOR	ADAPTABILITY	INTENTIONALITY	INCLUSION	TRAINING	COST BUDGET	BRAND NAME REPUTATION	CREW	COMPANY	QUALITY
HIERARCHICAL	Pearson Correlation	1	.382**	.486**	.319**	.292**	.248**	.228**	.297**	.258**	.170**	.311**	.384**	.310**	.390**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.008	.000	.000	.000	.000
GROUP	Pearson Correlation	.382**	1	.534**	.464**	.341**	.291**	.283**	.373**	.383**	.143*	.301**	.331**	.275**	.343**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.025	.000	.000	.000	.000
RATIONAL	Pearson Correlation	.486**	.534**	1	.529**	.392**	.325**	.343**	.338**	.414**	.101	.342**	.375**	.352**	.399**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.113	.000	.000	.000	.000
DEVELOPMENTAL	Pearson Correlation	.319**	.464**	.529**	1	.389**	.264**	.364**	.374**	.465**	.014	.320**	.326**	.401**	.326**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.830	.000	.000	.000	.000
LEADERSHIP BEHAVIOR	Pearson Correlation	.292**	.341**	.392**	.389**	1	.608**	.399**	.472**	.402**	.201**	.288**	.263**	.318**	.338**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.002	.000	.000	.000	.000
ADAPTABILITY	Pearson Correlation	.248**	.291**	.325**	.264**	.608**	1	.395**	.483**	.478**	.106	.293**	.328**	.271**	.326**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.097	.000	.000	.000	.000
INTENTIONALITY	Pearson Correlation	.228**	.283**	.343**	.364**	.399**	.395**	1	.473**	.616**	.079	.329**	.305**	.276**	.354**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.218	.000	.000	.000	.000
INCLUSION	Pearson Correlation	.297**	.373**	.338**	.374**	.472**	.483**	.473**	1	.472**	.115	.271**	.256**	.254**	.275**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.071	.000	.000	.000	.000
TRAINING	Pearson Correlation	.258**	.383**	.414**	.465**	.402**	.478**	.616**	.472**	1	.061	.309**	.322**	.345**	.260**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.337	.000	.000	.000	.000
COST BUDGET	Pearson Correlation	.170**	.143*	.101	.014	.201**	.106	.079	.115	.061	1	.264**	.244**	.120	.192**
	Sig. (2-tailed)	.008	.025	.113	.830	.002	.097	.218	.071	.337		.000	.000	.060	.002
BRAND NAME/REPUTATION	Pearson Correlation	.311**	.301**	.342**	.320**	.288**	.293**	.329**	.271**	.309**	.264**	1	.574**	.588**	.417**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
CREW	Pearson Correlation	.384**	.331**	.375**	.326**	.263**	.328**	.305**	.256**	.322**	.244**	.574**	1	.631**	.602**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
COMPANY	Pearson Correlation	.310**	.275**	.352**	.401**	.318**	.271**	.276**	.254**	.345**	.120	.588**	.631**	1	.560**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.060	.000	.000		.000
QUALITY	Pearson Correlation	.390**	.343**	.399**	.326**	.338**	.326**	.354**	.275**	.260**	.192**	.417**	.602**	.560**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002	.000	.000	.000	
** Correlation is significant at the 0.01 level (2-tailed).															
* Correlation is significant at the 0.05 level (2-tailed).															

Table of Regression Analysis Results of Selection Criteria on Value Co-Creation Behavior

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.650a	.422	<b>.420</b>	731.172	.422	178.251	1	244	.000	2.107	
a Predictors: Selection Criteria											
b Dependent Variable: Value Co-creation											
ANOVAa											
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	9.529.526	1	9.529.526	178.251	.000b					
	Residual	13.044.556	244	53.461							
	Total	22.574.081	245								
a Dependent Variable: Value Co-creation											
b Predictors: Selection Criteria											
Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B		Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	38.587	5.273		7.317	.000					
	Selection Criteria	.572	.043	<b>.650</b>	13.351	<b>.000</b>	.650	.650	.650	1.000	1.000
a Dependent Variable: Value Co-creation											

Table of Regression Analysis Results of Selection Criteria and Value Co-Creation Behavior Dimensions

Model Summaryb											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.628a	.395	<b>.392</b>	523.475	.395	159.164	1	244	.000	2.025	
a Predictors: (Constant), Selection Criteria											
b Dependent Variable: Value Co Creation											
ANOVAa											
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	4.361.507	1	4.361.507	159.164	.000b					
	Residual	6.686.233	244	27.403							
	Total	11.047.740	245								
a Dependent Variable: Value Co Creation											
b Predictors: (Constant), Selection Criteria											
Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B		Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	25.589	3.775		6.778	.000					
	Selection Criteria	.387	.031	<b>.628</b>	12.616	<b>.000</b>	.628	.628	.628	1.000	1.000
a Dependent Variable: Value Co Creation											
Model Summaryb											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.457a	.209	<b>.206</b>	393.499	.209	64.398	1	244	.000	1.930	
a Predictors: (Constant), Selection Criteria											
b Dependent Variable: Value Co Creation											
ANOVAa											
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	997.144	1	997.144	64.398	.000b					
	Residual	3.778.125	244	15.484							
	Total	4.775.268	245								
a Dependent Variable: Value Co Creation											
b Predictors: (Constant), Selection Criteria											
Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B		Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12.998	2.838		4.580	.000					
	Selection Criteria	.185	.023	<b>.457</b>	8.025	<b>.000</b>	.457	.457	.457	1.000	1.000

## Table of Regression Analysis Results of Selection Criteria dimensions on Value Co-Creation Behavior

Model Summary <sup>b</sup>											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.679a	.461	<b>.447</b>	713.710	.461	34.028	6	239	.000	2.047	
a Predictors: (Constant), CREW_MANAGEMENT, RECOMMENDATION, RECRUITMENT, CREW_CHARACTERISTICS, QUALITY, REPUTATION											
b Dependent Variable: Value CoCreation											
ANOVA <sup>a</sup>											
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	10.399.848	6	1.733.308	34.028	.000b					
	Residual	12.174.233	239	50.938							
	Total	22.574.081	245								
a Dependent Variable: Value CoCreation											
b Predictors: (Constant), CREW_MANAGEMENT, RECOMMENDATION, RECRUITMENT, CREW_CHARACTERISTICS, QUALITY, REPUTATION											
Coefficients <sup>a</sup>											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	31.956	6.187		5.165	.000					
	QUALITY	.699	.154	<b>.265</b>	4.547	<b>.000</b>	.521	.282	.216	.665	1.503
	REPUTATION	.166	.143	<b>.070</b>	1.158	.248	.450	.075	.055	.626	1.597
	RECRUITMENT	.338	.162	<b>.105</b>	2.089	<b>.038</b>	.237	.134	.099	.897	1.115
	RECOMMENDATION	1.069	.234	<b>.238</b>	4.558	<b>.000</b>	.429	.283	.217	.824	1.213
	CREW_CHARACTERISTICS	.542	.277	<b>.111</b>	1.952	.052	.418	.125	.093	.699	1.432
	CREW_MANAGEMENT	1.203	.286	<b>.238</b>	4.211	<b>.000</b>	.496	.263	.200	.706	1.416
a Dependent Variable: Value Co-Creation											

## Table of Regression Analysis Results of Organizational Culture on Selection Criteria

Model Summary <sup>b</sup>											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.546a	.298	<b>.295</b>	916.310	.298	103.419	1	244	.000	1.640	
a Predictors: (Constant), Organizational Culture											
b Dependent Variable: Selection Criteria											
ANOVA <sup>a</sup>											
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	8.683.304	1	8.683.304	103.419	.000b					
	Residual	20.486.830	244	83.962							
	Total	29.170.134	245								
a Dependent Variable: Selection Criteria											
b Predictors: (Constant), Organizational Culture											
Coefficients <sup>a</sup>											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	65.629	5.642		11.633	.000					
	Organizational Culture	1.747	.074	<b>.546</b>	10.170	<b>.000</b>	.546	.546	.546	1.000	1.000
a Dependent Variable: Selection Criteria											

Table of Regression Analysis Results of Organizational Culture Dimensions on Selection Criteria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.550a	.303	<b>.291</b>	918.642	.303	26.164	4	241	.000	1.673	
a Predictors: (Constant), DEVELOPMENTAL, HIERARCHICAL, GROUP, RATIONAL											
b Dependent Variable: Selection Criteria											
ANOVAa											
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	8.832.086	4	2.208.022	26.164	.000b					
	Residual	20.338.048	241	84.390							
	Total	29.170.134	245								
a Dependent Variable: Selection Criteria											
b Predictors: (Constant), DEVELOPMENTAL, HIERARCHICAL, GROUP, RATIONAL											
Coefficientsa											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	64.637	6.280		10.293	.000					
	HIERARCHICAL	1.075	.316	<b>.213</b>	3.405	<b>.001</b>	.416	.214	.183	.742	1.348
	GROUP	.603	.264	<b>.152</b>	2.285	<b>.023</b>	.410	.146	.123	.654	1.529
	RATIONAL	.826	.292	<b>.205</b>	2.827	<b>.005</b>	.466	.179	.152	.550	1.818
	DEVELOPMENTAL	.582	.264	<b>.144</b>	2.202	<b>.029</b>	.391	.140	.118	.673	1.486
a Dependent Variable: Selection Criteria											

## APPENDIX B- Questionnaire



UNIVERSITY OF PIRAEUS DEPARTMENT OF MARITIME STUDIES

Dear Sir/ Madam,

You are kindly requested to participate in a strictly academic survey organized and performed by the Department of Maritime Studies, University of Piraeus. The purposes of the survey are:  
To examine how shipping companies, adapt and operate in global cultural environments (i.e. management of crew from different cultures and of different nationalities)

To investigate how shipping companies, relate, collaborate with and choose external partners, especially those related to manning agencies.

Finally, to assess how the organizational identity of each shipping company (i.e. values, beliefs, the way they perceive and address the diversity of cultures/ religions/ opinions) creates a distinct competitive advantage with regard to its human capital.

The survey is designed not to take more than 30 minutes of your time.

Your participation as well as the results of the survey is only for academic purposes, anonymous and totally confidential.

If you have any questions or requests, please feel free to contact Professor Angelos Pantouvakis ([apan@unipi.gr](mailto:apan@unipi.gr)) or/and Mrs. Athina Syntychaki ([ath.synt@unipi.gr](mailto:ath.synt@unipi.gr))

Thank you very much for your time and your attention.

University of Piraeus Department of Maritime Studies

## **PART A: ORGANIZATIONAL CULTURE**

The purpose of the first part is to evaluate the *organizational culture* of your company. Organizational culture is defined as “the set of values, beliefs and behavioural patterns that constitute the identity of an organization and determine how it perceives, thinks and reacts in its various environments”.

Please indicate the extent to which you disagree or agree with the following statements, **taking into consideration** your entire company:

		<b>Strongly disagree 1</b>	<b>2</b>	<b>3</b>	<b>Neither disagree or agree 4</b>	<b>5</b>	<b>6</b>	<b>Strongly agree 7</b>
<b>A1</b>	Formalized procedures generally govern what people do.	0	0	0	0	0	0	0
<b>A2</b>	We emphasize efficiency and control to reach predictable performance results.	0	0	0	0	0	0	0
<b>A3</b>	Reliable delivery, smooth scheduling and low-cost production are the main focus.	0	0	0	0	0	0	0
<b>A4</b>	Our management style prioritizes conformity, predictability and stability.	0	0	0	0	0	0	0
<b>A5</b>	Even small matters have to be referred to someone higher up for a final answer	0	0	0	0	0	0	0
<b>A6</b>	The development of human resources and concern about employees are highly valued.	0	0	0	0	0	0	0
<b>A7</b>	Our employees are encouraged to work as a team, exchange opinions, experiences, and ideas	0	0	0	0	0	0	0
<b>A8</b>	Employees can openly discuss their opinions and ideas with someone higher up.	0	0	0	0	0	0	0
<b>A9</b>	Employees are encouraged to take decisions.	0	0	0	0	0	0	0
<b>A10</b>	Our management style is characterized by teamwork, consensus and participation.	0	0	0	0	0	0	0
<b>A11</b>	Success is defined on the basis of winning and leading in the marketplace.	0	0	0	0	0	0	0
<b>A12</b>	If you are responding responsibly, please choose option 4	0	0	0	0	0	0	0
<b>A13</b>	Our reward system encourages reaching planned goals.	0	0	0	0	0	0	0
<b>A14</b>	We are results oriented, people are very competitive and achievement oriented.	0	0	0	0	0	0	0
<b>A15</b>	Objectives and targets are clearly defined.	0	0	0	0	0	0	0
<b>A16</b>	Our management style is characterized by	0	0	0	0	0	0	0



	hard driving competitiveness, high demands and individual achievement.									
<b>A17</b>	We emphasize prospecting for opportunities and creating new challenges	0	0	0	0	0	0	0	0	0
<b>A18</b>	We make an effort to anticipate the potential aspects of new practices and technologies.	0	0	0	0	0	0	0	0	0
<b>A19</b>	We are a very dynamic entrepreneurial place, which leads people to taking risks.	0	0	0	0	0	0	0	0	0
<b>A20</b>	Our management style is characterized by individual risk-taking, innovation, freedom, and uniqueness.	0	0	0	0	0	0	0	0	0
<b>A21</b>	We define success on the basis of innovation and having newest services.	0	0	0	0	0	0	0	0	0

## PART B: ORGANIZATIONAL CULTURAL INTELLIGENCE

The purpose of the second part is to evaluate the degree of your company's organizational cultural intelligence.

Organizational Cultural Intelligence is defined as "the ability of the company to manage individuals of different nationalities and to function effectively in different cultural environments".

*Please indicate the frequency with which the following are observed in your company, taking into account your entire organization:*

		Never 1	2	3	Fairly 4	5	6	Always 7
B1	Ship's top management <u>modifies its nonverbal behavior</u> (e.g. gestures) when a cross-cultural interaction requires it	0	0	0	0	0	0	0
B2	Ship's top management <u>is confident handling the stress</u> of working within new cultures	0	0	0	0	0	0	0
B3	Ship's top management <u>modifies personal verbal behaviors</u> (words, tone, and style) when a cross-cultural interaction requires it	0	0	0	0	0	0	0
B4	Ship's top management <u>checks accuracy of cultural knowledge</u> when interacting with people from different backgrounds	0	0	0	0	0	0	0
B5	Ship's top management <u>has extensive international experience</u>	0	0	0	0	0	0	0
B6	Ship's top management <u>is aware of cultural differences-</u> cultural values and religious beliefs- when interacting with people of different cultural backgrounds	0	0	0	0	0	0	0
B7	Ship's top management <u>is confident working</u> with people of other cultures	0	0	0	0	0	0	0
B8	The organization <u>adapts its ways of operations</u> when operating in differing cultural environments	0	0	0	0	0	0	0
B9	If you are responding responsibly, please choose option 2	0	0	0	0	0	0	0
B10	The organization <u>offers training</u> to facilitate cultural learning	0	0	0	0	0	0	0
B11	The organization <u>trains ship's top management</u> on how to manage conflicts arising among people (crew) from different countries	0	0	0	0	0	0	0
B12	The organization <u>engages</u> in cross-cultural learning <u>through consistently reviewing its process</u> and practices in order to learn and adapt	0	0	0	0	0	0	0

B13	The organization <i>has processes</i> in place to facilitate cultural learning	0	0	0	0	0	0	0
B14	The organization <i>is committed</i> to producing top management for the ships who is bi-cultural or multicultural in its skill set	0	0	0	0	0	0	0
B15	The organization <i>asks</i> ship's top management <i>for feedback</i> after communicating with people from different cultures	0	0	0	0	0	0	0
B16	The organization <i>intentionally monitors</i> ship's top management interactions with people from different cultures	0	0	0	0	0	0	0
B17	The organization <i>insists on avoiding expressions or words</i> that can be considered offensive to people of different cultures, ethnicity, religion, gender etc.	0	0	0	0	0	0	0
B18	The organization <i>is inclusive</i> . It gives equal opportunity to employees regardless of gender, ethnicity, and so on.	0	0	0	0	0	0	0
B19	The organization <i>strategically makes use of the diverse voices</i> within the organization	0	0	0	0	0	0	0
B20	The organization <i>understands the dynamics of diversity and inclusion</i>	0	0	0	0	0	0	0

## PART C: SELECTION CRITERIA

In the third part of the survey you are kindly requested to answer questions considering the criteria with which your company choose or is willing to choose if needed manning agencies. Evaluate from “not at all” to “absolutely” how much the following factors affect your company’s choice to cooperate with a manning agency.

### Costs/Budget

Evaluate from “not at all” to “absolutely” how much the following affect your company in choosing or if needed to choose a manning agency (MA):

		Not at all			Moderate		Absolutely	
		1	2	3	4	5	6	7
C1	The overall cost of service provided (commissions, crew costs etc)	0	0	0	0	0	0	0
C2	The commission charged from the manning agency	0	0	0	0	0	0	0
C3	The total (absolute) cost of employed seafarers	0	0	0	0	0	0	0
C4	The relative cost of the service provided in relation to competition	0	0	0	0	0	0	0

### Brand name/ Reputation of manning agency

Evaluate from “not at all” to “absolutely” how much the following affect your company in choosing or if needed to choose a manning agency (MA):

		Not at all			Moderate			Absolutely	
		1	2	3	4	5	6	7	
<b>C5</b>	The reputation the manning agency has on the market	0	0	0	0	0	0	0	0
<b>C6</b>	The reputation and characteristics of the Director/ Owner of the manning agency	0	0	0	0	0	0	0	0
<b>C7</b>	The reputation and characteristics of Directors and operators of the manning agency	0	0	0	0	0	0	0	0
<b>C8</b>	The way the manning agency presents its services (preselection/recruitment processes prior the selection of the manning agency)	0	0	0	0	0	0	0	0
<b>C9</b>	The recommendations we get for the manning agency from friends/ acquaintances	0	0	0	0	0	0	0	0
<b>C10</b>	If you are responding responsibly, please choose option 6	0	0	0	0	0	0	0	0
<b>C11</b>	The recommendations we get for the manning agency from other market professionals	0	0	0	0	0	0	0	0
<b>C12</b>	The list of shipping companies that cooperate with the manning agency	0	0	0	0	0	0	0	0
<b>C13</b>	Personal relationship with the owner of the manning agency	0	0	0	0	0	0	0	0

### **Crew**

Evaluate from “not at all” to “absolutely” how much the following affect your company in choosing or if needed to choose a manning agency (MA):

		Not at all			Moderate			Absolutely
		1	2	3	4	5	6	7
C14	Crew availability from MA in order to meet our company's usual needs	0	0	0	0	0	0	0
C15	Crew availability from MA in order to meet our company's needs in unusual or extreme cases	0	0	0	0	0	0	0
C16	The capability of MA to suggest to us recruitment of totally new crew nationalities for:							
	A. Ratings	0	0	0	0	0	0	0
	B. Officers	0	0	0	0	0	0	0
C17	The quality and the characteristics of the recommended crew	0	0	0	0	0	0	0
C18	The quality of the training of the recommended crew	0	0	0	0	0	0	0
C19	The offered crew' experience on a specific type of vessel	0	0	0	0	0	0	0
C20	The time (years) the crew works for reliable companies	0	0	0	0	0	0	0
C21	The Religion of the recommended crew	0	0	0	0	0	0	0
C22	The capability of the MA to control the behavior of the crew, especially in case something goes wrong	0	0	0	0	0	0	0
C23	The common knowledge/ notion on the way the recommended crew is believed to behave (e.g. drinking, shouting)	0	0	0	0	0	0	0
C24	The skills of the offered crew to handle difficult or extraordinary situations	0	0	0	0	0	0	0
C25	The Crew evaluation after disembarkation	0	0	0	0	0	0	0

### **Company (characteristics)**

Evaluate from “not at all” to “absolutely” how much the following affect your company in choosing or if needed to choose a manning agency (MA):

		Not at all			Moderate		Absolutely	
		1	2	3	4	5	6	7
<b>C26</b>	The size of the manning agency	0	0	0	0	0	0	0
<b>C27</b>	The crew is managed directly from countries of origin (e.g. Philippines)	0	0	0	0	0	0	0
<b>C28</b>	The quality certificates of the manning agency (MA)	0	0	0	0	0	0	0
<b>C29</b>	The number and types of nationalities of the seafarers provided by the manning agency (MA) (Filipinos, Ukrainian, Vietnamese)	0	0	0	0	0	0	0
<b>C30</b>	The management and the organization of the MA	0	0	0	0	0	0	0
<b>C31</b>	The specific knowledge from MA of the local markets when recruiting crew	0	0	0	0	0	0	0
<b>C32</b>	The skills of the crew operators	0	0	0	0	0	0	0
<b>C33</b>	The way the MA respond to possible problems should they appear	0	0	0	0	0	0	0
<b>C34</b>	If you are responding responsibly, please choose option 3	0	0	0	0	0	0	0
<b>C35</b>	The training centers provided/ owned by the manning agency	0	0	0	0	0	0	0
<b>C36</b>	The web monitoring capability of crew data amendments	0	0	0	0	0	0	0
<b>C37</b>	The communication style' compatibility between the manning agency (MA) and our company	0	0	0	0	0	0	0
<b>C38</b>	The forming of personal relationships between the manning agency (MA) and our company	0	0	0	0	0	0	0

## QUALITY

Evaluate from “not at all” to “absolutely” how much the following affect your company in choosing or if needed to choose a manning agency (MA):

		Not at all			Moderate			Absolutely
		1	2	3	4	5	6	7
<b>C39</b>	The courtesy of the personnel of the MA	0	0	0	0	0	0	0
<b>C40</b>	The capability of the MA to understand and correctly respond to our company's needs	0	0	0	0	0	0	0
<b>C41</b>	The time required from the MA to respond to our requests	0	0	0	0	0	0	0
<b>C42</b>	The accuracy in type of response	0	0	0	0	0	0	0
<b>C43</b>	The trust that the MA will deliver as promised	0	0	0	0	0	0	0
<b>C44</b>	The reliability of the services provided	0	0	0	0	0	0	0
<b>C45</b>	The capability of the MA to handle our company's even unusual or extraordinary needs	0	0	0	0	0	0	0
<b>C46</b>	The MA's overall Performance according to our company's expectations	0	0	0	0	0	0	0

### **General Question**

C47. Please choose and rank (1,2,3) only three (3) of the following eight absolute characteristics in order to choose a manning agency:

	Personal Relationship
	Confidence and trust on the service provided
	Crew costs
	Crew nationalities
	Crew Availability
	Company's brand name
	Good reputation of the manning agency's owner
	Quality of services provided

### **PART D: VALUE CO-CREATION**

The purpose of the fourth part of the survey is to assess the existence of strong and mutually beneficial relationships with external partners and in particular with manning agencies, with the aim of creating multiple benefits and value for both sides.

*Please indicate the frequency with which the following are observed in your company, taking into account your entire organization:*

		Never 1	2	3	Fairly 4	5	6	Always 7
D1	We <i>collect</i> information from many sources regarding overall quality of services, before we choose a manning agency	0	0	0	0	0	0	0
D2	We <i>search for information</i> regarding the manning agency from:							
	a. The internet	0	0	0	0	0	0	0
	b. Friends and colleagues	0	0	0	0	0	0	0
	c. Other (shipping) companies	0	0	0	0	0	0	0
	d. The market	0	0	0	0	0	0	0
D3	We often seek and <i>appraise</i> manning agency's (MA) performance and way of co-operation with other shipping companies (other than us)	0	0	0	0	0	0	0
D4	We <i>clearly explain</i> to the manning agency (MA) about the services we want	0	0	0	0	0	0	0
D5	We <i>provide</i> the manning agency with all the necessary information in order to provide us with the best possible offer/ solution	0	0	0	0	0	0	0
D6	We <i>regularly inform</i> the manning agency (MA) about the existing working conditions on board	0	0	0	0	0	0	0
D7	We <i>timely respond</i> to all MA's queries regarding service related questions	0	0	0	0	0	0	0
D8	We <i>honour</i> all our commitments/promises to the manning agency (MA) as agreed (time, cost)	0	0	0	0	0	0	0
D9	We <i>treat the</i> manning agency in a proper and polite way in recognition of its role as our collaborator/ close partner	0	0	0	0	0	0	0



<b>D10</b>	We <i>follow</i> the manning agency's recommendations on issues related to the service provided	0	0	0	0	0	0	0
<b>D11</b>	Friendly relationships are created between our crew department members and the manning agency (MA)	0	0	0	0	0	0	0
<b>D12</b>	We <i>rarely misbehave</i> in our relationship with the manning agency	0	0	0	0	0	0	0
<b>D13</b>	If the manning agency has a suggestion to improve the service, <i>we always pay great attention to it</i>	0	0	0	0	0	0	0
<b>D14</b>	When we receive good services from the manning agency <i>we appreciate and comment on it</i>	0	0	0	0	0	0	0
<b>D15</b>	When we experience a problem with the crew, <i>we inform the MA and ask for their help</i> to solve the problem	0	0	0	0	0	0	0
<b>D16</b>	We <i>say positive things about the MA</i> to others	0	0	0	0	0	0	0
<b>D17</b>	We <i>recommend</i> the MA to other shipping companies if we are satisfied.	0	0	0	0	0	0	0
<b>D18</b>	We <i>encourage</i> our friends and acquaintances to use this manning agency	0	0	0	0	0	0	0
<b>D19</b>	We <i>assist</i> the MA to handle crew problems should they appear	0	0	0	0	0	0	0
<b>D20</b>	We <i>seek for</i> advise from third parties when problems with the manning agency arise	0	0	0	0	0	0	0
<b>D21</b>	Even If the service from the MA is not exactly delivered as promised we are willing to put up with it	0	0	0	0	0	0	0
<b>D22</b>	Even If the MA's operator makes a (minor) mistake during the service delivery, <i>we are willing to discuss it over with his superior before taking further actions</i>	0	0	0	0	0	0	0
<b>D23</b>	Even If we have to wait longer than we normally expected to receive the services from our MA, we are	0	0	0	0	0	0	0
	willing to adapt							
<b>D24</b>	We are willing to pay extra:							
	2%	0	0	0	0	0	0	0
	4%	0	0	0	0	0	0	0
	6%	0	0	0	0	0	0	0
	in order to enjoy the level of service quality and trust provided by our manning agency							

Please indicate the extent to which you disagree or agree with the following statements, taking into consideration your entire company:

		Strongly disagree 1	2	3	Neither disagree or agree 4	5	6	Strongly agree 7
<b>D25</b>	Overall our management style is characterized as hierarchical and rigid	0	0	0	0	0	0	0
<b>D26</b>	Overall our company has the ability to manage and understand people of almost any nationality	0	0	0	0	0	0	0
<b>D27</b>	Overall our company's behaviour towards manning agencies is based on understanding and mutuality	0	0	0	0	0	0	0
<b>D28</b>	Overall the market in which we operate is characterized by intense volatility and competitiveness	0	0	0	0	0	0	0

Part E: General company information

E1. Please mention three manning agencies that come in your mind regardless of whether you cooperate with them or not

.....

E2. Please indicate three nationalities you would be willing to work with regardless if you cooperate with them:

.....

E3. What is the dominant nationality of your crew?

.....

E4. Please name and rank some (1 to 3) reasons that if you are offered or appeared you will be willing to switch from your existing to a new manning agency

.....

E5. Please, determine the size of your company compared with your major competitors:

- Small
- Medium
- Large
- Very large

E6. Which is the number of employees in your company (shore based)?

- 0 – 20
- 21 – 40
- 41 – 80
- 81 – 100
- 101 – 200
- >200

E7. Please indicate the average number of ships that you operated during the last year:

- 1 – 3
- 3 – 7
- 7 – 15
- 15 – 24
- >25

E8. Please indicate the deadweight tonnage of ships that you operated during the last year:

- 500 – 100.000
- 101.000 – 300.000
- 301.000 – 500.000
- 501.000 – 800.000
- 801.000 – 1.000.000
- >1.000.000

E9. Please indicate the average age of operating ships (in years):

- < 5
- 5 – 9
- 10 – 14
- 15 – 19
- >20

E10. Please indicate the specific industry sector that you operate in:

- Dry bulk
- Liquid bulk
- Containerships
- Other or combination.....