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The human talent and its role in ISM Code effectiveness and competitiveness in the shipping industry

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ABSTRACT

The present study empirically evaluates the role of human talent in the effective implementation of quality management systems in the shipping industry context. Specifically, we analyze the relationships among top management commitment to quality, ISM (International Safety Management) Code effectiveness and competitiveness as well as we assess the influence of talent in these associations. We test our research hypotheses using a sample of 199 shipping companies located in Greece. The findings show that ISM Code effectiveness acts as a mediator between top management commitment and shipping company competitiveness, while the different talent philosophies were found to moderate this relationship.

KEYWORDS

Talent; talent philosophies; top management commitment; ISM Code effectiveness; competitiveness; shipping

1. Introduction

In the context of international transport operations and specifically shipping,¹ human resources are considered as the key differentiator that determines the fulfillment of organizational goals (Yoon, Lee, and Dinwoodie 2015) and strongly influencing the successful implementation of business strategies (Progoulaki and Theotokas 2016). Previous studies in the maritime sector have mainly focused on the human element as an amalgam of unique interpersonal and cognitive skills (Hetherington, Flin, and Mearns 2006), emphasized its role in the realization of maritime quality and safety-related systems, such as the International Safety Management (ISM) Code (Tzannatos and Kokotos 2009) and acknowledged that it is the main contributor of maritime accidents (Mindykowski 2017).

These unique human characteristics, skills or specific abilities and affective components of individuals are addressed in the concept of ‘talent’ or the ...‘systematically developed innate abilities of individuals that are deployed in activities they like, find important, and in which they want to invest energy. ...’ (Nijs et al. 2014, 182).

Despite the considerable increase of publications on talent-related issues, empirical studies on those topics are still lacking (Meyers and van Woerkom 2014) or are conceptual in nature (Collings and Mellahi 2009) or follow mainly the case study approach in order to provide fact-based understanding of talent implications (Iles, Chuai, and Preece 2010).

Thus, more research studies are now needed that will (a) define ‘talent’ and further clarify its role inside the HRM literature (Dries 2013), (b) examine it across different streams of literature

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and different organizational settings (Collings and Mellahi 2009) especially in the shipping industry which is on the need for high human competences and skills (IMO 2010; Uğurlu, Kum, and Aydoğdu 2017) and finally (c) further identify talent's role and its impact to pursue excellent performance (Pantouvakis and Karakasnaiki 2017).

Responding to the above suggestions and concerns, this study positions itself to first introduce and examine novel human resource (HR) concepts, such as 'talent,' and assess for the first time **both** prevalent talent philosophies (exclusive vs. inclusive and innate vs. developable) in the maritime sector.

Second, this study focuses on exploring the relationships between *Top Management Commitment* and the *effective implementation of the ISM Code* as well as estimating their contribution to shipping company *competitiveness*. This is in line with many authors, who either emphasize the role of senior executives for the effective implementation of the ISM Code and management systems (Tunidau and Thai 2010) or stress the need to assess the impact of those management and quality systems on maritime companies' results (Yuen and Thai 2017; Cheng and Choy 2013), competitiveness (Yoon, Lee, and Dinwoodie 2015) and safety (Uğurlu, Kum, and Aydoğdu 2017).

Finally, this study attempts to explore whether and how *talent* and employed talented individuals alter the well-documented relationship among Quality Management (QM) Systems, and especially ISM Code, and competitiveness. ISM Code is here introduced as a mandatory process-oriented management of shipping companies' operations characterized by rigid compliance to certain mandatory rules allowing thus for fruitful comparisons to the more flexible TQM principles (Pantouvakis and Karakasnaiki, 2017).

2. Literature review and research hypotheses

2.1. The human factor in the maritime industry

The maritime industry and the globalized business environment, in which shipping companies operate, is characterized by high uncertainty, unpredictability and increased competition caused mainly by economic instability, weak demand and oversupply of new tonnage (UNCTAD 2016). Under these circumstances, shipping companies strive to survive and develop the right corporate strategies and organizational capabilities (Kuo, Lin, and Lu 2017) in order to effectively respond to customer demands and expectations and provide high-quality services. These strategies mainly

- include the focus on HR-related issues and identify the importance of unique human interpersonal and cognitive skills (Hetherington, Flin, and Mearns 2006) supporting that employees can be considered as a strategic asset, as well as a means to gain a competitive advantage (Progoulaki and Theotokas 2016), increase quality and prevent accidents (Erol and Başar 2015)
- require the support and commitment of top management as a prerequisite of their success (Tunidau and Thai 2010)
- emphasize the effective implementation of QM systems as an integral part of shipping management operations (Cheng and Choy 2013) and
- emphasize the need to focus on the adoption of new and innovative HR concepts (Pantouvakis and Psomas 2016) and on the role of 'human talent' (Pantouvakis and Karakasnaiki 2017) on transport operations.

2.1.1. The concept of talent

Ever since it was recognized that the focus on talented people is the key to the formation of a strong competitive advantage (Ashton and Morton 2005), the academic community has been

extensively marked by a concern to provide—not always with success—a clear conceptualization of talent inside business organizations (Gallardo-Gallardo, Dries, and González-Cruz 2013) or develop solid conceptual frameworks that address the management of talented employees and how they contribute to the achievement of organizational goals (Collings and Mellahi 2009).

For example, some authors argue that talent refers to innate abilities of individuals that can be systematically developed and deployed in the right activities of interest (Nijs et al. 2014) whereas others emphasize the synergistic effects of special individual characteristics such as competence, commitment and contribution (Ulrich and Smallwood, 2012). The characterization ‘high achievers’ or ‘performers’ has been allotted to talented employees that outperform their peers in terms of capability and performance (Cooke, Saini, and Wang 2014) and are considered of strategic importance within an organization (Meyers and van Woerkom 2014).

2.1.2. *The main talent philosophies*

2.1.2.1. *Talent: innate or developable?* In the literature, a great emphasis is also placed on the underlying philosophies of talent, or stated differently, on the crucial assumptions and beliefs about the nature and value of talent (Meyers and van Woerkom 2014). One of the main philosophies about the nature of human talent is built on the assumptions that talent is an innate entity genetically determined that is stable over time and fixed (Meyers and van Woerkom 2014) and this aspect is based on the notion that ‘**people are who they are**’ (Dries 2013). Researchers who argue in favor of the innate nature of talent mainly support that talent is rare and associated with high intelligence (Meyers, van Woerkom, and Dries 2013).

On the other hand, there is the ‘developable approach’ which is built on the premise that constant practice leads to high performance and that talent can be augmented from experience (Meyers and van Woerkom 2014). Thus, talent can be taught and learned and emerges from knowledge accumulation and training (Meyers, van Woerkom, and Dries 2013). When talent is considered as a developable construct, an organization should place a particular emphasis on advancing employees’ knowledge and skills through training programs, mentoring or development initiatives (Dries 2013).

2.1.2.2. *Talent: exclusive or inclusive?* An interesting debate also exists in the literature regarding the exclusivity or inclusivity of human talent (Dries 2013). The exclusive talent philosophy implies that only few employees possess talents (Meyers and van Woerkom 2014) and these employees can be regarded as high-performers or high-potentials (Collings and Mellahi 2009). This philosophy promotes the work differentiation notion inside business organizations, as most organizational resources are mainly invested to those employees that have been identified as talented usually leading to higher returns on investment (Dries 2013).

On the other hand, the inclusive talent philosophy advocates that everyone can be regarded as talented and that all employees should be given the opportunity to deploy their unique talents in the right organizational positions (Iles, Chuai, and Preece 2010). The inclusive philosophy has positive implications for the adopting organizations (Dries 2013), such as the prevalence of good working conditions or the establishment of more egalitarian management practices (Gallardo-Gallardo, Dries, and González-Cruz 2013).

Following the theory on talent philosophies in the HRM literature, the first hypothesis is formulated as:

Research hypothesis 1 (H1): *Human Talent in shipping may be decomposed in a two-dimensional construct reflecting its innate/developable and exclusive/inclusive nature.*

2.2. Top management commitment (TMC), quality and competitiveness in shipping

2.2.1. TMC and quality (ISM Code)

The success of all management programs is dependent upon the commitment of top management and the successful implementation of quality initiatives in the shipping industry constitutes no exception (IMO 2010). In general, the role of TMC to achieve better quality of products or services involves the development of certain activities that concern the provision of quality leadership and resources for the adoption and implementation of quality efforts (Ahmed and Parasuraman 1994). Specifically in the shipping industry, top management team sets the quality objectives and the overall strategic planning for the organization, whereas TMC is reflected in the support of long-term quality improvement processes and in the establishment of specific goals for quality performance in the shipping company (Cheng and Choy 2013).

In the literature, several attempts have been made to evaluate the service quality offered (Yuen and Thai 2017) or to assess the applicability of various QM systems, such as TQM (Pantouvakis and Psomas 2016) in the context of shipping companies. Although the contribution of these quality systems to improvements in performance has been supported (Cheng and Choy 2013), scholars continue to pay their most attention in evaluating the effectiveness of the mandatory ISM Code (Tzannatos and Kokotos 2009). The ISM Code verifies that a quality and safety management system is developed and implemented (Chen 2000). Also, it aims at providing a global regulatory framework for the safe management and operations of ships and for pollution prevention (IMO 2010).

2.2.2. Competitiveness

Despite the absence of a universally accepted definition for a firm's competitiveness (Feurer and Chaharbaghi 1994), it is common perception that it mainly addresses the unique capabilities and offerings of an organization and the ability of a company to prosper among others in the business environment (Han, Chen, and Ebrahimpour 2007). Competitiveness is a dynamic rather than a static concept and is primarily concerned with the long-term performance of an organization relative to the competition (Yoon, Lee, and Dinwoodie 2015).

As a result, a holistic set of indicators of a company's competitiveness is usually utilized. For example, Yang et al. (2013) used five variables in order to measure competitiveness in the container shipping industry, which included corporate image improvements, service quality improvements, customer satisfaction increases, productivity increases and higher profits. Other operationalizations of competitiveness include customer requirements-related and profit-related indicators (Delbari et al. 2016) or the dimensions of cost, quality, delivery and flexibility (Han, Chen, and Ebrahimpour 2007). The variety of indicators used in different studies shows that competitiveness is a relative and multidimensional concept which cannot be defined by a single measure (Feurer and Chaharbaghi 1994).

2.2.3. The triad: TMC, ISM Code effectiveness and competitiveness

In the context of shipping companies, TMC to quality is prerequisite for increased safety awareness, higher sense of environmental consciousness and protection and effective compliance with mandatory regulations (Cheng and Choy 2013). Thus, it seems that when top management sets clear objectives and specific goals for quality improvement, it contributes to the effective compliance with the ISM Code's rules that regulate the shipping operations. Shipping companies should not only rely on mechanically following the Code's requirements; instead they should pursue its effective implementation. In this regard, the TMC is essential in implementing the ISM Code successfully and effectively (Tunidau and Thai 2010). Furthermore, TMC has positive implications for the shipping organization as it lays the foundation for positive financial results, ensures customer satisfaction and leads to operational performance improvements (Cheng and Choy 2013).

ISM Code effectiveness also leads to improvements in a shipping company's results, measured by service quality or financial indicators (Pantouvakis and Karakasnaki, 2016) whereas in the literature, quality and financial criteria have been extensively used in order to evaluate a firm's competitiveness (Delbari et al. 2016; Yang et al. 2013). Moreover, other standardized quality systems that share a common underlying philosophy with the ISM Code, such as ISO 9000 standards (Pantouvakis and Karakasnaki 2016), have been proven to increase the competitiveness of the adopting organizations (Jorge Gamboa and Melão 2012). Thus, it seems that ISM Code effectiveness can be seen as a strategic option available for a shipping company in order to increase its competitiveness in the marketplace.

In the present study we jointly analyze the concept of TMC along with the effective implementation of the obligatory ISM Code and their impact on competitiveness introducing thus a mediating role of ISM Code effectiveness between TMC and competitiveness. Therefore, we hypothesize that:

Research hypothesis 2 (H2): *ISM Code effectiveness mediates the relationship between TMC and shipping company competitiveness.*

2.3. The role of talent in the TMC-ISM Code effectiveness-competitiveness relationship

The human factor comprises both the top management team and its commitment to the ISM Code's successful implementation (Tunidau and Thai 2010) as well as the quality, competences and skills of the personnel at all levels of the shipping organization (IMO 2010). The focus on these high-quality employees' attributes or unique talents (Nijs et al. 2014) challenges the traditional philosophy of the QM systems and responds to the necessity to find novel, flexible and more adaptive ways of managing quality operations putting an emphasis on competent human capital (Pantouvakis and Psomas 2016). For any organization, recognizing, selecting and building on employees' talents should be a constant pursuit and organizations in shipping should address employees' talents as an essential tool for responding to the modern QM challenges.

Talented individuals inside organizations determine the success or failure of business strategies and subsequently may condition the way QM systems are implemented. Specifically, the contradictory philosophies on talent (innate/developable or exclusive/inclusive) impact upon the organizational practices (Meyers and van Woerkom 2014). They also dominate the way of how business strategies and management systems are executed and ultimately may influence how the latter lead to organizational results. Moreover, it seems that the differentiations in the talent philosophies strongly characterize a company's internal organizational environment and subsequently top managers' priorities, the effectiveness of management plans and finally performance and competitive advantage (Thunnissen, Boselie, and Fruytier 2013).

Therefore, it seems that the way TMC leads to ISM Code effectiveness and then to competitiveness is influenced by talent. Top management encourages the process-oriented and formalized management of quality operations, as prescribed by the ISM Code. Nevertheless, this effect is dependent upon competent and talented human capital both on top and on lower organizational levels (IMO 2010). In the same vein, the effective implementation of the ISM Code requires the presence of high knowledge, skills and expertise among the employees as well as their participation in training and development activities in order to advance individual competences (IMO 2010; Tunidau and Thai 2010). Thus, it seems that ISM Code's contribution to increased competitiveness is also contingent on employees and their talents.

Bearing also in mind that the adoption of different HR practices or strategies has been found to moderate the relationship between the implementation of QM strategies and company results (Bou and Beltrán 2005), it seems that the effect of TMC on a shipping company's competitiveness through the effective implementation of the ISM Code is moderated by talent.

Research hypothesis 3 (H3): *The innate/developable talent philosophy moderates the TMC-ISM Code effectiveness-competitiveness relationship.*

Research hypothesis 4 (H4): *The exclusive/inclusive talent philosophy moderates the TMC-ISM Code effectiveness-competitiveness relationship.*

3. Data and methods

3.1. Sample

A large-scale survey of the Greek shipping industry was conducted. Greece is the largest ship-owning country (UNCTAD 2016). As of January 2016, the Greek fleet consisted of 4,136 vessels, corresponding to 16.36% of the world's total fleet (UNCTAD 2016). Thus, it seems that the Greek shipping industry provides a good opportunity for further research.

A structured questionnaire was administered to almost 700 shipping companies in Greece (the whole population), assuring confidentiality. These targeted shipping companies belong to all shipping sectors (dry bulk shipping, liquid bulk shipping, liner shipping, LNG/LPG sectors). At first, 20 managers in shipping companies were invited to pilot the questionnaire. After proceeding to the necessary corrections, a detailed email was sent explaining the objectives of the study, requesting the shipping company's participation to the survey and asking for an appointment arrangement with the target respondents. These target respondents were mainly the Quality and Safety managers of the shipping companies or other managers and senior executives familiar with the applied policies. Then, the collection of the questionnaires took place through personal interviews. After discarding those questionnaires with incomplete responses, we finally, ended up with 199 responses suitable for further analysis. Table 1 displays the demographics of the respondents.

Table 1. Demographic profile of the respondents.

	Percentages
ISO certification	
YES	53
NO	46
Missing	1
Subjective size compared to major competitors	
Small	16
Medium	60
Large	14
Very large	10
Type of vessels	
Various types of vessels	20
Dry bulk	43
Liquid bulk	16
Dry and Liquid bulk	13
Containerships	3
LPG/LNG	5
Average number of operating ships (during the last year)	
1–3	17
4–7	24
8–12	17
13–20	14
21–35	14
>35	14
Average age of operating ships (in years)	
<5	15
5–10	50
11–15	19
16–20	10
>20	6

3.2. Measurement instruments

3.2.1. Talent

In order to measure the construct of talent philosophies, the instruments proposed by Dries et al. (2014) were utilized. As regards the innate/developable talent philosophy, the measurement scale includes eight items, four of which measure innate beliefs and the remaining ones measure developable beliefs about talent (Dries et al. 2014). The latter items had their values reversed in order to be consistent with the overall scoring system, so that a higher score on the scale indicates a more innate philosophy (Dries et al. 2014).

On the other hand, the measurement of the exclusive/inclusive philosophy was initially based on six items and adopted from Dries et al. (2014). Three items were intended to describe the exclusive and three items were used to measure the inclusive beliefs respectively. However, following the results of the pre-pilot study of 20 managers in shipping companies, the three inclusive items were found to produce confusing results possibly due to the fact that the rephrasing of the same idea resulted to boredom or fuzziness on behalf of the respondents and they were finally eliminated from further analysis. A higher score on the final scale denotes a more exclusive talent philosophy. All items were scored on a seven-point Likert-type scale ranging from 'Strongly disagree' to 'Strongly agree.'

3.2.2. TMC, ISM Code effectiveness and competitiveness

The measurement instrument of TMC to quality consisted of 6 items and was adopted from relevant studies in the QM literature (Pantouvakis and Psomas 2016). In order to measure the effective implementation of the ISM Code, the measurement instrument identified in Pantouvakis and Karakasnaki (2016) was utilized. The instrument is comprised of 11 items which are organized in two axes, namely continuous improvement (7 items) and customer satisfaction focus (4 items). Competitiveness was assessed in terms of service quality improvements and customer satisfaction increases, as these dimensions have been extensively used in recent studies (Han, Chen, and Ebrahimpour 2007; Yang et al. 2013). All items were measured on a seven-point Likert-type scale ranging from 'Strongly disagree' to 'Strongly agree.'

3.3. Data analysis methods

Confirmatory Factor Analysis (CFA) was performed in order to refine the scales of TMC, ISM Code effectiveness and competitiveness. Moreover, Exploratory Factor Analysis (EFA) was conducted in order to reveal the structure of the different talent philosophies. In order to validate the EFA results, CFA was also performed in the talent construct. The mediating effect of ISM Code effectiveness in the relationship between TMC and competitiveness was tested using regression analyses and following the three-step procedure proposed by Baron and Kenny (1986). Finally, the moderating role of talent in the before-mentioned association was also tested through regression analyses.

4. Results and discussion

4.1. Confirmatory factor analysis of TMC, ISM Code effectiveness and competitiveness

In order to refine the scales of TMC, ISM Code effectiveness and competitiveness, CFA was performed using the Maximum Likelihood Estimation. The Cronbach's alpha values indicate acceptable and satisfactory levels of construct reliability (Table 2). All standardized regression weights were greater than 0.5 and statistically significant, confirming the convergent validity of the measurement models. The goodness of fit statistics (Table 2) of the three models are highly satisfactory and thus signify a very good fit, while the standardized residual covariances were also

Table 2. Confirmatory factor analyses.

	Top management commitment	ISM Code effectiveness	Competitiveness
Cronbach's α	0.757	0.921	0.928
	<i>Continuous improvement</i>		
	<i>Customer satisfaction focus</i>		
Dimensions			
Chi-square	2.776	50.976	16.193
p-value	0.250	0.001	0.094
Chi-square/df	1.388	2.216	1.619
GFI	0.993	0.944	0.978
AGFI	0.965	0.891	0.939
NFI	0.985	0.955	0.987
TLI	0.987	0.960	0.990
CFI	0.996	0.974	0.995
RMSEA	0.044	0.078	0.056
AIC	18.776	94.976	52.193

below the acceptable limits of 2.5 (Hair et al. 2006). The chi-square/df ratios fall below the value of 3, while the GFI and CFI values are also very close to 1 (Hair et al. 2006).

4.2. Exploratory factor analysis of talent (Research hypothesis 1)

In order to reveal the underlying dimensions of talent philosophies, EFA was applied using the method of Principal Component Analysis to yield the factors and a Varimax rotation to improve the interpretation. The value of Cronbach's alpha is 0.761, which suggests good reliability (Hair et al. 2006). Table 3 shows that all factor loadings are >0.50 (convergent validity is thus revealed), which are generally considered necessary for practical significance (Hair et al. 2006). Moreover, loadings of >0.40 are considered statistically significant for sample sizes of around 200 (Hair et al. 2006).

Moreover, in order to validate the EFA results (Hair et al. 2006), CFA was further employed using the maximum likelihood estimation and an acceptable fit was revealed (Chi-square = 62.306, df = 32, p-value = 0.001, Chi-square/df = 1.947, GFI = 0.940, AGFI = 0.897, NFI = 0.873, TLI = 0.905, CFI = 0.932, RMSEA = 0.069, AIC = 108.306).

The results in Table 3 reveal that talent philosophies are composed of two dimensions, namely the Innate/Developable and the Exclusive/Inclusive categories (*support of hypothesis 1*). This result is in line with previous studies in the literature which contend that the principal assumptions on the nature of talent are based on its innate (or developable) and its exclusive (or inclusive) character (Meyers and van Woerkom 2014). In the first case, certain items, such as 'The kind of person someone is, is something very basic about them and it can't be changed very much,' imply an innate and stable perception on human talent, while other items, such as 'People can change even their most basic qualities,' express the notion that talent is something that can be developed during an individual's lifetime. As regards the second derived dimension, statements, such as 'A talent is not something everyone possesses, but just the lucky few,' uncover the strong belief that only a few people should be considered talented, strongly departing from the notion that all people are gifted and thus should be treated like this in their working environment.

4.3. The mediating role of ISM Code effectiveness in the relationship between TMC and competitiveness (Research hypothesis 2)

The role of ISM Code effectiveness in the liaison between TMC and competitiveness was examined through testing a mediation model based on Baron and Kenny's (1986) three-step process and using the summated scales of the constructs under examination. The results of the Baron and Kenny's (1986) three regression equations are presented in Figure 1. It is noted that in



Table 3. Exploratory factor analysis of talent philosophies.

<i>KMO measure of sampling adequacy</i>	0.781	
<i>Bartlett's Test of Sphericity Approx. Chi-Square</i>	481.658	
<i>df</i>	45	
<i>Sig.</i>	0.000	
<i>Total variance explained</i>	50.421%	
	Factor 1—Innate/Developable talent philosophy	Factor 2—Exclusive/Inclusive talent philosophy
No matter what kind of a person someone is, they can always change very much. (r*)	0.759	
People can substantially change the kind of person they are. (r*)	0.752	
Everyone, no matter who they are can significantly change their basic characteristics. (r*)	0.732	
People can change even their most basic qualities. (r*)	0.696	
The kind of person someone is, is something very basic about them and it can't be changed very much.	0.672	
Everyone is a certain kind of person and there is not much that can be done to really change that.	0.575	
People can do things differently, but the important parts of who they are can't really be changed.	0.502	
A talent is a special individual that can make a significant difference to a company.		0.758
A talent is not something everyone possesses, but just the lucky few.		0.688
It is a logical choice that developmental assignments and resources are only invested in the most promising talent.		0.643

r*: reversed-coded.

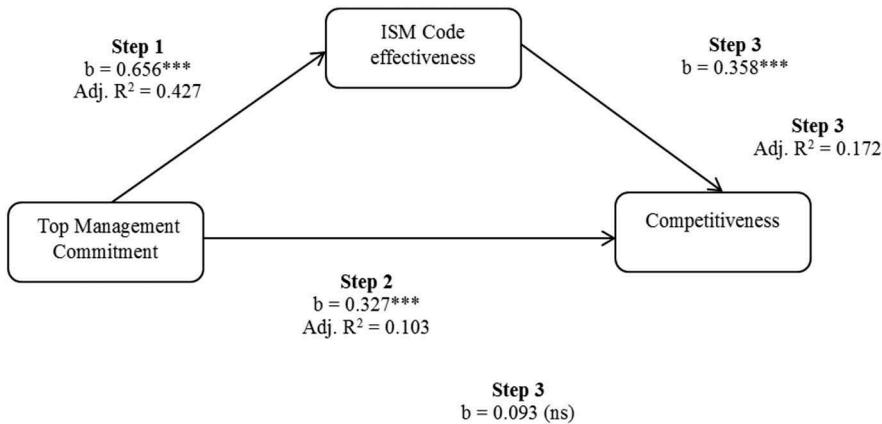


Figure 1. The mediating role of ISM Code effectiveness in the top management commitment–competitiveness relationship. ***significant at the 0.01 level, ns: nonsignificant.

the third equation the tolerance and VIF values are greater than 0.1 and less than 10, respectively (Hair et al. 2006), signaling thus the absence of multicollinearity. It is apparent that after estimating the three regression models, the fully mediating role of ISM Code effectiveness is largely revealed, providing *support for hypothesis 2*, since all three conditions of Baron and Kenny (1986) hold true:

- In the first regression equation (Step 1), ISM Code effectiveness is affected by TMC.
- In the second regression equation (Step 2), TMC has an impact on competitiveness.
- In the third regression equation (Step 3), ISM Code effectiveness affects competitiveness in a positive and significant way, while TMC exerts no effect (the beta is not significant) on the dependent variable (competitiveness). As a result, full mediation is supported.²

The results indicate that the strong commitment of senior executives in top managerial positions regarding the cultivation of a QM culture is an essential prerequisite to achieve high levels of compliance to the obligatory ISM Code and to correspond to its specifications in an efficient and prosperous manner. The successful implementation of the Code can then act as a catalyst for maritime organizations in experiencing high and strong levels of competitiveness. Further support for the benefits derived from ISM Code effectiveness was also provided by Pantouvakis and Karakasnaiki (2016), who confirmed the Code's positive contribution to high performance. Moreover, the above findings complement and enrich previous research that brings into focus the dynamic role of top managers in effectively meeting the requirements of the mandatory shipping regulations or successfully complying with the ISM Code (Cheng and Choy 2013; Tunidau and Thai 2010).

4.4. The moderating role of talent philosophies in the TMC-ISM Code effectiveness-competitiveness relationship (research hypotheses 3 and 4)

In order to test our third and fourth hypotheses, two different sets of groups were developed. First, the summated scale of the Innate/Developable philosophy (the first factor as extracted by the EFA) was calculated and after excluding the median value two distinct subgroups were formulated, representing the developable ($n = 98$) and the innate ($n = 86$) talent philosophies. Similarly, the summated scale of the Exclusive/Inclusive philosophy (the second factor as extracted by the EFA) was created and two separate subgroups were also developed after omitting the scale's

Table 4. Innate versus developable talent philosophy.

Relationships	Coefficient (b)		Adj R ²	
	Developable	Innate	Developable	Innate
Step 1				
Top management commitment → ISM Code effectiveness	0.632***	0.697***	0.393	0.480
Step 2				
Top management commitment → competitiveness	0.408***	0.256**	0.158	0.055
Step 3				
Top management commitment (1), ISM Code effectiveness (2) → Competitiveness	b(1) = 0.185 (ns) b(2) = 0.353 ***	b(1) = - 0.006 (ns) b(2) = 0.377 ***	0.225	0.118

***significant at the 0.01 level, **significant at the 0.05 level, ns: nonsignificant.

median value, corresponding to the inclusive ($n = 93$) and the exclusive ($n = 84$) philosophies. The mediation model was tested for each of the four subgroups described above.

As far as the results of the innate/developable talent philosophy are concerned (Table 4), it is apparent that the fully mediating role of ISM Code effectiveness in the TMC-competitiveness link is primarily evident in the case of the developable talent philosophy. TMC was found to influence ISM Code effectiveness in the first equation (Step 1, $b = 0.632$, $\text{Adj. } R^2 = 0.393$) and competitiveness in the second equation (Step 2, $b = 0.408$, $\text{Adj. } R^2 = 0.158$). Finally, in Step 3, only ISM Code effectiveness ($b_2 = 0.353$) has a significant effect on competitiveness ($\text{Adj. } R^2 = 0.225$), which confirms its fully mediating role in the TMC-competitiveness relationship. It is noted that in the third regression equation, multicollinearity is not present since the tolerance and VIF values are 0.601 and 1.665 respectively.

If we now turn on the regression results in the case of the innate talent philosophy (Table 4), it was shown that the value of $\text{Adj. } R^2$ is very low ($\text{Adj. } R^2 = 0.055$) when TMC is regressed on competitiveness (Step 2), indicating the absence of a strong relationship between the two constructs and consequently the absence of a mediating effect. Nevertheless, the third regression equation was estimated (Step 3). Since there are variations in the results of the three regression equations between the above examined subgroups, it becomes evident that the innate/developable talent philosophy moderates the TMC-ISM Code-competitiveness relationship (*support of Hypothesis 3*). Specifically, the developable model fits the data better than the innate model.

The above findings reveal that in order for QM systems (ISM Code) to be successfully implemented in the shipping industry and to yield superior competitiveness outcomes, the **key is to realize that talent is something that can be developed and cultivated during a person's lifetime**. The focus should be on providing constant development of the human capital through certain programs and training initiatives. As a result, employees' latent talents can grow through personal effort, individual development plans or undertaking challenging assignments (Meyers, van Woerkom, and Dries 2013). All these will create the appropriate environment in order to successfully direct top management to undertake quality projects. Then, through the capability of effectively implementing the ISM Code, the ultimate aim of improving competitiveness will be achieved.

On the other hand, quality strategies may not be applied successfully when natural talents are believed not to be developed but rather to be fixed (innate talent philosophy). In the shipping industry, the process-oriented logic largely dominates the execution of operations. In such an environment, the implementation of a mechanism which leads TMC to competitiveness through ISM Code effectiveness may fail to produce the desirable outcomes, when talented people do not have to pursue developmental opportunities, but are 'who they are' (Dries et al. 2014).

Table 5 presents the regression analysis results, which were conducted for the two subgroups formed on the basis of the inclusivity or exclusivity of talent. With respect to the inclusive philosophy, it seems that TMC positively and significantly leads to the effective implementation of the ISM Code (Step 1, $b = 0.708$, $\text{Adj. } R^2 = 0.496$) and to competitiveness (Step 2, $b = 0.422$,

Table 5. Exclusive versus Inclusive talent philosophy.

Relationships	Coefficient (b)		Adj R ²	
	Inclusive	Exclusive	Inclusive	Exclusive
Step 1				
Top management commitment → ISM Code effectiveness	0.708***	0.603***	0.496	0.355
Step 2				
Top management commitment → Competitiveness	0.422***	0.289***	0.169	0.072
Step 3				
Top management commitment (1), ISM Code effectiveness (2) → Competitiveness	b(1) = 0.137 (ns) b(2) = 0.402 ***	b(1) = 0.134 (ns) b(2) = 0.258 (ns)	0.242	0.104

***significant at the 0.01 level, ns: nonsignificant.

Adj. $R^2 = 0.169$). Moreover, in the third regression equation, only ISM Code effectiveness ($b_2 = 0.402$) positively influences competitiveness (Step 3, Adj $R^2 = 0.242$) revealing its fully mediating effect. Tolerance (0.499) and VIF (2.005) values lie between the accepted limits (Hair et al. 2006).

However, the situation is quite different when the other subgroup is analyzed (Table 5). Interestingly, no strong (Step 2, Adj. $R^2 = 0.072$) or significant (both betas are nonsignificant) (Step 3) relationships were observed in the second and third regression equations, respectively. Overall, these results differ from those obtained when the inclusive talent philosophy was taken into account (*support of Hypothesis 4*) and indicate the absence of a mediating effect in the case of the exclusive talent philosophy.

The above findings uncover the fully mediating role of ISM Code effectiveness in the association among TMC and competitiveness in the case of the inclusive talent philosophy. The reason is that everyone is given the opportunity to show his/her potential and is treated as possessing unique capabilities that are deployed in the suitable roles inside a maritime firm (Meyers and van Woerkom 2014). The organization diffuses a positive belief among employees, i.e. that each of them is regarded as high-valuable and talented. Under these circumstances, the effective implementation of QM systems is facilitated and competitiveness benefits are thus realized, especially in service companies where all business operations are centered around all the people employed so the inclusive philosophy may be more suitable (Gallardo-Gallardo, Dries, and González-Cruz 2013).

On the other hand, the segmentation of the workforce in two groups, namely talented and not talented,—as the exclusive philosophy entails—possibly results in negative consequences, such as low organizational morale and negative feelings (dissatisfaction, indignation or resentment) (Gallardo-Gallardo, Dries, and González-Cruz 2013). This situation hinders company-wide personal development, teamwork and cooperation (Gallardo-Gallardo, Dries, and González-Cruz 2013) and may undermine management initiatives which in general require employee involvement and commitment to quality, such as the ISM Code. These findings echo previous research studies also conducted in a maritime context, which unveil how the different (exclusive or inclusive) perceptions on talented individuals determine the success of QM initiatives, such as TQM (Pantouvakis and Karakasnaqi, 2017). We extend these previous findings, as we provided evidence that the inclusive mindset is appropriate also when addressing standardized management systems, such as the ISM Code, in the shipping industry.

5. Conclusions

A shipping company's ability to consolidate a strong competitive position relies to a great extent on the presence of a 'talented' HR pool, on a highly committed to quality top management team as well as on promoting the effective implementation of QM systems, such as the ISM Code. One of the most

significant contributions of the present study was the empirical assessment of the novel talent philosophies in the context of the shipping industry. According to the findings, the two dominant talent philosophies reflect on the one hand the innate/developable and on the other hand, the exclusive/inclusive nature of talent. Moreover, the current study tested and found corroborating evidence for the fully mediating role of ISM Code effectiveness in the relationship between TMC and competitiveness. Maritime organizations whose senior management teams consider the quality issues as a top priority in their decision-making process tend to emphasize the effective implementation of rules and procedures of the Code which in turn results in high competitiveness.

Finally, the empirical findings largely enlightened how human talent determines the success or failure of quality management efforts to yield the desirable results. Specifically, the study results showed that higher levels of ISM Code effectiveness, spurred by a strong TMC, develop into improved competitiveness in the case of the developable and inclusive categories of talent philosophies. Overall, the study findings imply that the examination of new and innovative HR philosophies such as those addressing talented individuals can significantly determine how quality systems fulfill their intended outcomes and ensure competitiveness.

5.1. Managerial and policy implications

The findings of the present study also provide a number of useful implications at a managerial level. First of all, the findings represent a clear management case for pursuing the effective implementation of the ISM Code inside shipping companies. Managers should focus not only on mechanistically following the imposed regulations; they should be committed at fostering a quality culture as well as they should constantly target at achieving the true effectiveness of the Code (Pantouvakis and Karakasnakis 2016). The extent to which a shipping organization is able to reach these objectives will determine its competitiveness.

Most importantly, the findings provide valuable insights to the managers with regard to recognizing and developing the unique talents of their employees. In practice, whatever the size, field of operations or type of ships of maritime companies, it is recommended to the managers first to identify the special competencies and talents of each individual employee (Wu et al. 2017) and second to invest in development activities in order to advance the talents of their entire workforce. Having deep understanding into the role of talented employees is crucial if managers are to optimize the benefits from effectively implementing management systems. The use of the study findings can assist shipping managers in order to improve the decision-making in the area of quality management.

Additionally, policymakers along with shipping companies should be engaged in developing and implementing attractive human resource strategies that will concern the reinforcement of maritime skills of the present and prospective workforce at sea (Ruggunan and Kanengoni 2017) and the people who occupy key organizational positions ashore. In an era of rapid technological advancements, which need to be simultaneously examined with adequate training as sometimes people fail to keep up with modern equipment (Mindykowski 2017), as well as scarcity of high-quality human skills, investing in identifying and developing talents is a necessity.

Of note is that large maritime organizations have begun to develop big talent projects that aim to upgrade the quality of the human capital in shipping. For example, Cosco Group undertook the 'Three 300s' Talent Project³ in 2003 in order to cultivate managerial and administrative talent, professional technologists and senior ship managers. Through effective training and incentive mechanisms, the Group has managed to advance the overall level of its talent team and secure the growth of employees. Moreover, the A.P. Møller–Maersk Group's strategic talent management initiatives generated significant implications for *inter alia* employee turnover and diversity, training and development projects or external hiring of talent (Groysberg and Abbott 2012). Overall, policy actions should involve the establishment of quality educational environments along with a supportive learning culture and innovative teaching techniques in order to facilitate

the advancement of employees' skills and talents both ashore and onboard ships and the dissemination of knowledge in the maritime industry (Ruggunan and Kanengoni 2017).

5.2. Limitations and suggestions for future research

A couple of limitations to this research should be acknowledged. First of all, questionnaires were mainly administered to the director of the Quality and Safety department, whose view may not be representative of what is happening in the entire shipping organization. Future studies could also survey individual employees or people in managerial positions of various departments and compare the results. An additional limitation is that the research was conducted only in the Greek context and responses were collected from respondents of the Greek nationality. Thus, taking responses from managers of different nationalities will be a valuable future research direction, since there are culture-specific variations in some meanings associated with 'talent' (Dries et al. 2014).

Notes

1. 'Maritime' and 'shipping' will be used interchangeably in this work denoting the transfer of goods by the sea.
2. Adjusted R^2 values of around 0.110 are considered to produce sufficient explanatory power in social sciences (Schlegelmilch, Bohlen, and Diamantopoulos 1996).
3. <http://en.cosco.com/col/col805/index.html>.

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