

World Maritime University The Maritime Commons: Digital Repository of the World Maritime University

Journal Publications

MaRiSa

2017

After 40 years of regional and coordinated ship safety inspections: Destination reached or new point of departure?

Armando Graziano

World Maritime University, agr@wmu.se

Jens-Uwe Schröder-Hinrichs

World Maritime University, jus@wmu.se

Aykut I. Olçer

World Maritime University, aio@wmu.se

Follow this and additional works at: http://commons.wmu.se/marisa_articles



Part of the [European Law Commons](#), [Science and Technology Studies Commons](#), and the [Transportation Engineering Commons](#)

Recommended Citation

Graziano, Armando; Schröder-Hinrichs, Jens-Uwe; and Olçer, Aykut I., "After 40 years of regional and coordinated ship safety inspections: Destination reached or new point of departure?" (2017). *Journal Publications*. 4.

http://commons.wmu.se/marisa_articles/4

This Article Open Access is brought to you courtesy of Maritime Commons. Open Access items may be downloaded for non-commercial, fair use academic purposes. No items may be hosted on another server or web site without express written permission from the World Maritime University. For more information, please contact library@wmu.se.



Contents lists available at ScienceDirect

Ocean Engineering

journal homepage: www.elsevier.com/locate/oceaneng

After 40 years of regional and coordinated ship safety inspections: Destination reached or new point of departure?

Armando Graziano^{a,*}, Jens-Uwe Schröder-Hinrichs^a, Aykut I. Ölcer^b

^a Maritime Risk and System Safety (MaRiSa) Research Group, World Maritime University, Fiskehamngatan 1, 21118 Malmö, Sweden

^b Maritime Energy (MarEner) Research Group, World Maritime University, Malmö, Sweden

ARTICLE INFO

Keywords:

Port state control
EU maritime policy
Elite interviews
Template analysis
Safety inspections
Harmonization

ABSTRACT

Port State Control (PSC) is the major global strategy for fighting substandard shipping since the signature of The Hague Memorandum in 1978. In the last years, the increased volume of trade, the enlarged number of main international conventions and the highlighted differences among the various Regimes have posed new challenges to the modern system of PSC, which may need to find its new course.

This paper examines the point of view of key maritime stakeholders with regard to the EU PSC regime. Elite interviews (n = 14) were conducted with subject matter experts ranging from policy makers, to industry and seafarers' representatives. The study aims to determine factors leading to difference in treatment among EU Member States. The study concludes that PSC in Europe seems to be the most efficient and reliable of the regional agreement on PSC. However, some discrepancies during the inspection process and outcome can be highlighted due to differences at the inspector and Member State level.

1. Introduction

Since the emergence of the various regional agreements, Port State Control (PSC) has become a robust and omnipresent reality in the maritime day-to-day operations, or what Bloor et al. (2006) define as an 'enforcement agency'. On March 2018, the shipping industry will approach the 40th anniversary of the Amoco Cadiz disaster, which accelerated the emergence of those agreements for coordinated ship safety inspections. Accidents such as the Aegean Sea (1992), Braer (1993), Estonia (1994), Erika (1999) and Prestige (2002), caused a strong political and public outcry for more stringent regulations regarding safety of ships and protection of the maritime environment. In line with this appeal, regional cooperation and coordination for ship inspections were established and responded to the general belief that many of the existing flag States were ineffective to thoroughly fulfil their obligations on their vessels (Anderson, 1998; Bloor et al., 2006; Özçayır, 2009; van Leeuwen, 2015).

The Hague Memorandum had been just signed when two weeks after, the Amoco Cadiz ran aground off the coasts of France spilling more than 200,000 t of oil and making clear, out and loud, that shipping failed in coping with new challenges and, more importantly, in self-controlling its vessels (Anderson, 1998; Bell, 1993; Mansell, 2009; Özçayır, 2004; Vorbach, 2001). It was at the Ministerial Conference held in Paris in 1982 that 14 European states conceived

the first regional coordinated system of ship inspections by signing the Paris Memorandum of Understanding on Port State Control (Paris MoU) in the attempt to stem the proliferation of substandard shipping. However, it was not until 1995 that PSC became a European Union (EU) initiative with the implementation of Directive 1995/21/EC on PSC which made the Paris MoU system mandatory for EU Member States (MSs). The Directive represents the predecessor of the current legislative instrument, in force since 1st of January 2011: Directive 2009/16/EC, as amended by Directive 2013/38/EU.

Since its introduction, the areas of application of PSC have greatly increased. While enforcement provisions have been included in recent conventions, such as the Maritime Labour Convention (MLC) or the Ballast Water Management (BWM) Convention, inspection results are also widely used to determine Flag State performance resulting in the compilation of a Black-White and Grey (BWG) list. However, despite the major efforts, discrepancies in harmonization efforts were found by different studies (Anderson, 2002; Bloor et al., 2006; Cariou et al., 2009; Hjorth, 2015; Knapp and van de Velden, 2009; Knudsen and Hassler, 2011; Ravira and Piniella, 2016; Sampson and Bloor, 2007) asserting that PSC 'does not have uniform application in all different regions and sometimes not even within the same MoU' (Özçayır, 2009).

This article does not aim to be a historical review of PSC; it is taken for granted that the increased use of coordinated and harmonised ship safety inspection efforts has profoundly impacted the shipping industry

* Corresponding author.

E-mail address: agr@wmu.se (A. Graziano).

<http://dx.doi.org/10.1016/j.oceaneng.2017.06.050>

Received 15 January 2017; Received in revised form 13 April 2017; Accepted 19 June 2017
0029-8018/ © 2017 The Authors. Published by Elsevier Ltd.

and increased safety standards (Anderson, 2002; Cariou et al., 2008; Hare, 1997; Özçayır, 2009; Vorbach, 2001). Rather, the purpose of this article is to investigate what are the main factors contributing to the disparities in harmonization among EU MSs by focusing on Directive 2009/16/EC, as amended. According to this objective, ten elite interviews with fourteen key experts in the maritime domain were conducted covering a large spectrum of policy-makers (European Commission, EMSA, Paris MoU Secretariat), ship-owner representatives (BIMCO, INTERCARGO, INTERTANKO, INTERMANAGER), classification societies representatives (IACS) and seafarers' representatives (Nautical Institute, CESMA).

2. Literature review – A glance at the past

Two of the main reasons to develop regional cooperation for PSC were undoubtedly the need for sharing information between states about the safety records of vessels and to avoid that a vessel was inspected at every port within the same region (Hare, 1997). At the same time, this was underpinned by providing harmonised rules and standards for inspection procedures. By setting a common standard, MoUs' goal is to avoid unilateral action by Port States which could have a negative impact on the neighbourhood ports within the same region, reducing their commercial attractiveness (Molenaar, 2007), and distorting the market (Knapp and Franses, 2007a). In parallel, discrepancies may influence the outcome of performance measurement such as the BWG list (Perepelkin et al., 2010), by differing safety records and targeting factors.

Issues in the harmonization and standardization process have been identified since the emergence of the first MoUs. While major academic studies have focused on the legal basis for Port State jurisdiction (Anderson, 1998; Bang, 2009; Bell, 1993; Keselj, 1999; Molenaar, 2007; Özçayır, 2004; Payoyo, 1994) and the improvement of the targeting system (Anderson, 2002; Cariou et al., 2009; Cariou and Wolff, 2015; Degré, 2007, 2008; Sage, 2005), inconsistencies in the application of PSC were already highlighted by Plaza (1994). In the study conducted by Sampson and Bloor (2007), the perception of inconsistencies in inspection practices between different countries in different MoUs emerged during stakeholders interviews and field studies. Differences in treatment were also underlined by Knapp and van de Velden (2009) and Knudsen and Hassler (2011), which concluded that a degree of harmonization and uniformity across the various PSC MoUs is far from being reached. Nevertheless, studies targeting inconsistencies within the same region are scarce (e.g., Cariou et al., 2009) and none of those regard the EU as their main focus.

Özçayır (2009) was concerned by the lack of uniform application of inspection standards. The author suggested that if, on the one hand, insufficient funds and lack of personnel are the main contributors for differences among states, the subjectivity of PSC Officers (PSCO) for detaining vessels on the basis of their professional judgment represents a major drawback rooted in their background and training. This aspect of discretion in PSCOs is re-evoked and reinforced by Bloor et al. (2006) in the results of an ethnographic-inspired study which involved 3 maritime authorities, more than one hundred observations on board and around 30 interviews with key stakeholders. In their study on cross-national (rather than within-national) differences in inspection practices, the background of the inspector emerged as one contributing factor.

Following the stream of PSCO's background and training, Knapp and Franses (2007b) suggested that the probability of detention appears to be slightly higher if the inspection is conducted by an inspector with engineering background compared to nautical background. Similarly, Ravira and Piniella (2016) analysed the influence of the professional background of PSCOs within the framework of the Spanish Administration. The authors concluded that both professional background and the use or lack of teams for the conduction of an inspection has an influence on the inspection outcome.

While the literature has shown that some inconsistencies may be found in the various regions, this study focuses on those which emerge within the same region and, specifically, the EU region. Lastly, this article aims not only at unrevealing disparities, if any, but also to the underlying contributory factors.

3. Methodology

The reported findings are derived from an interview study designed to accommodate ten elite interviews with fourteen participants.

3.1. Elite Interviews and purposive sampling

An elite interview is a type of interview mainly used in political science to understand hidden elements of policies and/or legislation by interviewing high-officials or people holding a prestigious role in society (e.g. politicians, civil servants, legislators, etc.) (Boucher et al., 2013 citing Dexter 1970; Richards, 1996). For this reason 'elite interview samples tend to be a lot smaller' (Richards, 1996). A purposive sampling was deemed appropriate for this study due to the narrow research focus and the specific and unique context/case (Miles et al., 2013).

The key requisite for the choice of participants was to cover the wide spectrum of stakeholders involved in PSC. The demographic could not be presented in this paper and will not be shared to the readers for confidentiality reasons and due to the high-profile of the interviewees. All information that could be shared is presented in Table 1.

A semi-structured interview was chosen in order to unveil a broad amount of themes/areas to be explored during the interview. The interview guide (Appendix A) was developed and tested with one representative of the United States Coast Guard with long-standing experience in PSC inspections and one senior researcher in the area of communication and sociology. The interview is part of a larger study on Port State Control. This paper focuses on questions relevant to Section 4 and Section 5 of the Interview Guide in Appendix A.

Prior to the interview, all participants were informed of the average time for the interview (30–45 min). The interviews started by presenting the overall scope of the study and by providing information on the participants' rights. Thereafter, the informants were asked to sign a consent form and complete the demographics sheet. The interviews were recorded with permission.

3.2. Critical case study

The focus of this paper on the Paris MoU lies in the peculiar nature of the regime which makes it arguably a 'critical case' scenario (Goldthorpe, 1968). In their study on whether empirical evidence would support the emergence of the notion of *embourgeoisement*, the

Table 1
Elites participating in the interviews, their Organization and Background.

Participant ID	Organization	Background
P1	European Commission	Law
P2	EMSA	Master Mariner & PSCO
P3	EMSA	Other & PSCO
P4	BIMCO	Master Mariner
P5	INTERTANKO	Master Mariner
P6	IACS	Naval Architecture
P7	INTERMANAGER	Master Mariner
P8	NAUTICAL INSTITUTE	Master Mariner
P9	INTERCARGO	Naval Architecture
P10	CESMA	Master Mariner
P11	Paris MoU Secretariat	Master Mariner
P12	Paris MoU Secretariat	Master Mariner
P13	CESMA	Master Mariner
P14	CESMA	Master Mariner

authors designed the most favourable setting. They argued that should *embourgeoisement* not be found in the most favourable setting, it would be safe to say that it would be unlikely to occur in less-favourable settings. In other words ‘if it happens here, it will happen anywhere’ or ‘if it doesn’t happen here, it won’t happen anywhere’ (Patton, 2015; p. 275).

Similarly, the nature of the Paris MoU itself suggests that the regime constitutes a critical case study for four main reasons:

1. Since the Paris MoU is the first regional agreement on PSC signed in 1982, the level of experience and maturity is higher than other more recently signed MoUs.
2. While MoUs are, *ipso facto*, gentlemen's agreements, the Paris MoU is supported by the EU Directive 2009/16/EC as amended, which is legally binding for all the EU MSs.
3. Lastly, the Paris MoU benefits from a set of tools such as a targeting database system (THETIS), an online distance-learning programme (DLP), an inspection support software (RuleCheck) and others, which have only recently been adopted by some other MoUs.
4. All other MoU's have observer status in the Paris MoU meetings and trainings, and routinely receive for information all Instructions, Guidelines and other information. Although these arrangements are reciprocal, they are highly conducive to the dissemination of the Paris MoU way of working.

For these four main reasons, it is presumed that if discrepancies can be found in the Paris MoU regime, it is likely that those can be found in more recent MOUs.

3.3. Data analysis

All audio-recordings were verbatim transcribed and anonymized. All collected data and transcriptions were entered in MAXQDA 10 software and analysed using template analysis.

In essence, the method structures the collected data through data coding aiming at identifying the main themes of the study. This method works well in studies where a comparison between different groups within a specific context is performed (Patton, 2015). The term ‘template analysis’, however, does not refer to a clear and uniquely identifiable method but rather a ‘group of techniques for thematically organizing and analysing textual data’ (King, 2004). It suggests identifying some *a priori* codes which then will be modified and updated through *in vivo* codes during the analysis.

Since the study follows a deductive-inspired approach, the analysis did not begin with a *tabula rasa*, but with a set of pre-defined categories or codes, known as template (Table 2). They were later refined and revised with the *in vivo* codes. An extract is shown in Appendix B and pertains to Section 4 and Section 5 of the interview. The *a priori* codes were derived from previous literature and were discussed with three experienced Port State Control Officers (PSCOs).

Given the pragmatic approach underpinning the research philosophy of this study and the intended recipients of the findings, the authors adopted an output oriented approach (Patton, 2015; Reynolds et al., 2011) to determine the quality of the findings in terms of

Table 2

A priori codes used for the data analysis.

1st level code	2nd Level code
Background history	N/A
Challenges/Discrepancies	Background of PSCOs Inspection procedures Detention Criteria Training of PSCOs
Effectiveness of PSC	N/A
Areas of improvement	N/A

credibility, transferability, dependability and confirmability (Trochim and Donnelly, 2006). For this purpose, an analytical triangulation has been conducted through a review by inquiry participants and an independent expert audit review (n = 3).

4. Results & discussion

The following section provides the results and discussion of this study with a focus on the challenges/discrepancies that can be found in the Paris MoU regime. In the original template (Table 2), the *a priori* code “Challenges/Discrepancies” was changed into “Challenges/Discrepancies Paris MoU” to distinguish the Paris MoU from the other regions of the World. However, the “Challenges/Discrepancies” highlighted for other MOUs have not been included in this paper as well as other clusters such as “Background History”, “Effectiveness of PSC” and “Areas of Improvement” because it is not in the scope of this article.

4.1. An overview of discrepancies and challenges in the European Union region

Fig. 1 shows the main themes and how often certain codes can be found in the interviews’ transcriptions. The more often the code has been assigned to a participant, the larger the square. The size of a single square is determined by its relation to all other squares in the matrix and gives a general overview of the distribution of the segments for all codes and participants (the figure can be read both vertically and horizontally).

Contrarily, Fig. 2 illustrates the distribution of the codes for the individual participant (the figure must be read vertically) which indicates for every participant (P stands for participant) which were the most used codes and the size of the square is compared to the other squares in the same column. (confusing)

In general, the software counts how many times a code has been used, regardless of the length of the sentence and number of words. This means that the following two quotes are both regarded as one code:

“I think they made a huge difference. And it would be very wrong to not accept that. They ach-achieved something which is maybe more important for me. There is a standardization, there is cooperation, there is a body where we can lodge our complain, where we can have a discussion. It's not arbitrary like it was ‘you can't-you can't talk to me, I am guru and I know what I am talking about’. So they definitely achieved that. By doing that, if you look at the safety record of shipping industry it's bloody excellent. And compare us with air industry and you would be surprised. We are really, really good and Port State Control must be congratulated on that.” (INTERMANAGER)

And:

“Some countries ahem have an elaborate system which requires that the Port State Control Officer almost finishes like ahem a university degree in Port State Control before Master's Degree before he's allowed to work as a Port State Control Officer.” (EMSA)

This is because the objective of the visualization is to show how often a certain topic has been discussed by the participants, regardless of the size of the sentence.

The two figures are divided according to their stakeholder group: Policy Makers (P1 – P2 – P3 – P11 – P12), Seafarers representatives (P10 – P13 – P14 – P8 – P7), Industry's representatives (P7 – P4 – P5 – P9 – P6). Due to the current active role of P7 in two stakeholder groups, the participant has been included in both seafarers and shipowners’ representative groups.

As shown in Fig. 1, Participants 2 and 7 were the most active in highlighting discrepancies in Europe, mainly focusing their attention



Fig. 1. Discrepancies and Challenges in the EU region (overall).

on *Background of PSCOs*, *Differences between MSs*, *MSs level* and *Training of the PSCOs*; the results of both participants alone represent 31% of the overall coded segments. An outcome which might suggest that these actors are particularly involved in these themes. In addition, the most frequently discussed themes among the participants were: *Attitude/Approach on board*, *Background of PSCOs*, *Difference between MSs* and *Training of PSCOs*.

In general, policy makers were the most active group in focusing on the discrepancies in the regime. This might be a consequence of the availability of non-public information they have access to through the management of the regional PSC database THETIS, by training PSCOs and by conducting visits to the various MSs on the implementation of the PSC Directive. Topics such as *Training of the PSCOs*, *Team/No Team on board* and the influence at the *MSs level* (e.g. *resources*, *national or local legislation*, etc.) were thoroughly addressed by policy makers while the same cannot be said for other stakeholders. This is also why the former tend to have a more critical approach towards the harmonization and uniformity of the MoU while industry (with the exception of INTERMANAGER) and seafarers had a very positive attitude towards the Paris MoU and its equal treatment. An outcome which was interpreted by one of the participants as an outcome of the regime's reputation:

“I think the Paris MoU still today is regarded as the most effective region which I think it's not the case. What we have created is an area around us, a maritime area, where there is a big a high level of self-control by shipping companies, by flag States, by ships in general. Because of the reputation of the Paris MoU. So that is the indirect effectivity, you have created a name for yourself and we still use that reputation [...] So (ahem) to say it in normal words (.) ships

get away with issues (.) detected and all, where they should not. And in the past would not have gone away with it, so (ahem) the inspectors have become more relaxed to dealing with problems” (EMSA).

Fig. 3 organizes the findings in a brief diagram where the three main clusters found are summarised in: **Inspector Level**, **MS Level** and **Differences Among MSs**. While the details of the findings will be further explained in the next sections, it is crucial to conceptualise the meaning of the figure. The two clusters on top of the figure (input), namely *Inspector Level* and *MS Level*, encompass the main factors identified by the interviewees which could lead to discrepancies during a *Ship Inspection*. Conversely, the bottom of the figure, namely *Differences Among MSs*, illustrates the output of a PSC inspection where the two clusters on top had a negative influence on the inspection process (output).

4.2. Member states level

At the MS level the participants have highlighted some factors, or better, local factors, which could negatively influence a PSC inspection. Those are:

- **Use of Teams on Board**
- **Resources (Human & Financial)**
- **Local/National Legislation**
- **Training of PSCOs**
- **Internal Administrative Structure**
- **Political Influence/Support**

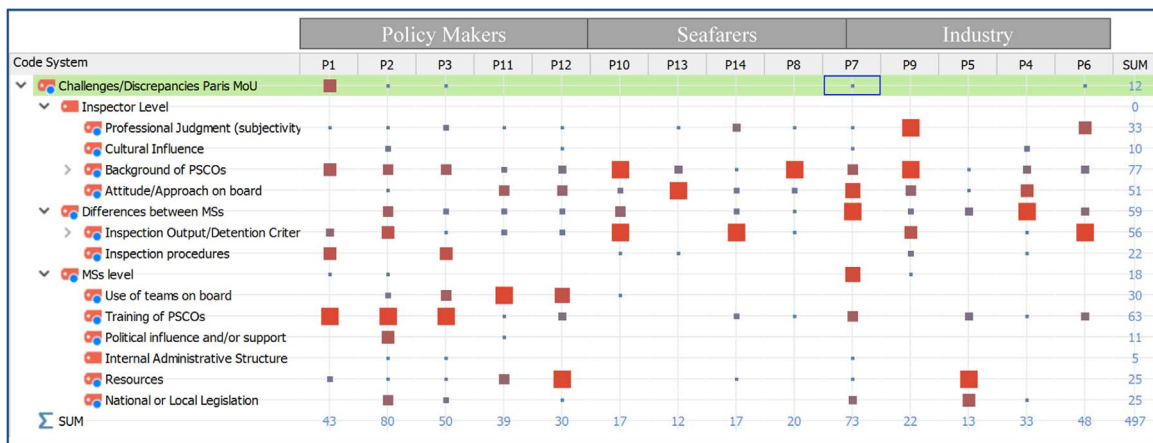


Fig. 2. Discrepancies and Challenges in the EU Region (participants).

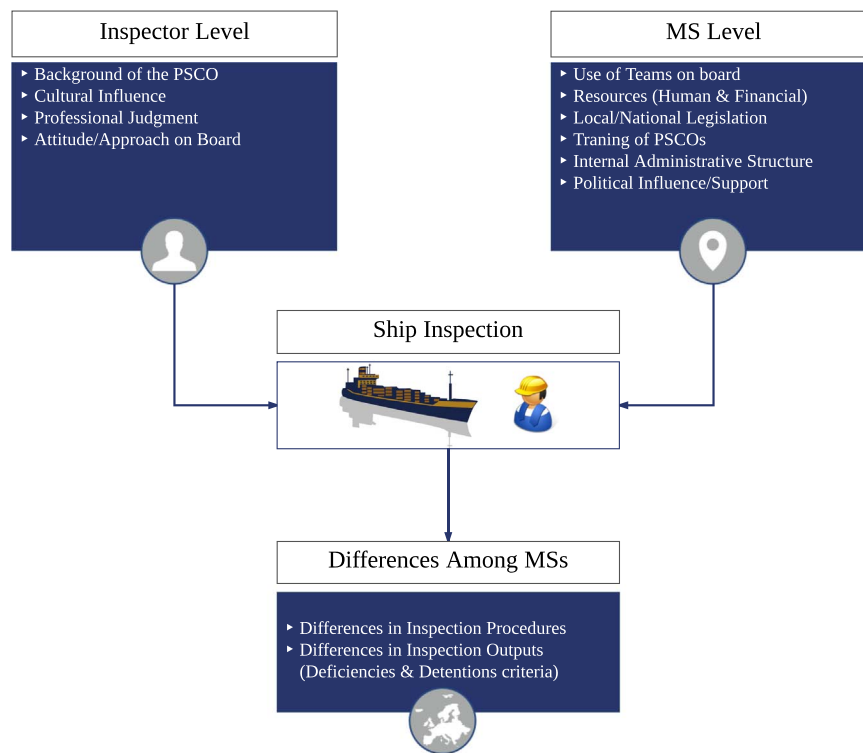


Fig. 3. Input and Output of a discretionary ship inspection system.

Some of those local differences were already suggested by Plaza (1994) and further by Bloor et al. (2006) and Knudsen and Hassler (2011).

Among the various legal acts through which the EU achieves its goals, Directives and Regulations are the most common. While both legislative acts are binding for the EU MSs, the level of flexibility changes greatly. A Directive sets out a goal or result that then the individual MS is still free to choose how to pursue its implementation through transposition into national legislation. Conversely, a Regulation must be applied entirely into national legislation throughout the union without further transposition (Coleman and Jessen, 2016). In other words, a Directive ensures a higher degree of flexibility for MSs which may leave wide gaps in the implementation process (Falkner et al., 2004). It is therefore assumed that the choice of enacting common PSC procedures by means of Directive 2009/16/EC, as amended, represents the origin of part of the highlighted disparities in the implementation and enforcement efforts. This has also been highlighted by some of the policy makers during the interview study.

Since *Resources*, *Local/National Legislation*, *Internal Administrative Structure* and *Political Influence/Support* have mainly been discussed in relation to *Training of PSCOs* and *Use of Teams on Board*, those two factors are explored in more detail in the following sections.

4.2.1. The use of teams – an issue of resources?

The use of teams of PSC officers on board to perform a PSC inspection was indicated as a factor that could lead to different inspection outcomes compared to single PSCO inspections. Knapp and Franses (2007b) suggested that the inspector background is reflected in particular deficiencies while Ravira and Piniella (2016) strongly advocate for multidisciplinary team on board. However, some participants from the policy making group have highlighted that the decision of using teams of two or more inspectors is not part of the EU legislation and therefore is a decision of the MS whether to avail of one or more PSCOs during a single inspection (P11-P12-P2-P3). This decision is strongly influenced by the availability of resources of the

country (financial and human resources), by the internal organization of the country, the distance between ports, the presence or absence of regional PSC offices, among others.

“[...] in some countries it depends on the distance to travel. You send one person in a car for four hours or do you send two?” (Paris MoU Secretariat).

With regard to the travelling distance that needs to be covered by the PSCO to inspect a vessel, some participants suggested to investigate the existence of a travelling policy within the country compared to the miles of coastline or the travelling time from one port to another compared to the miles of coastline.

It seemed clear that inspections conducted in isolation do not only accentuate the cultural and/or background differences, but leave the subject exposed to the ship's crew and the shipowner. The use of a team dims the effects of external pressure on the inspectors while allowing for interaction between the team members (peer review and complementary expertise). This interaction tends to mitigate negative effects connected to the use of professional judgment in uncertain/unclear situations.

4.2.2. A (non-)harmonised training policy

Same as for the decision to make use of teams for PSC inspections, the training of PSCO is a national prerogative. In their annexes, the PSC Directive (Annex XI) and the Paris MoU text (Annex VI) determine the professional profile of the inspectors and establish the so-called “minimum criteria” for PSCO. Those criteria, such as having an appropriate qualification from a nautical institution and having completed a minimum of one year of service as a flag State inspector, have become mandatory for EU MSs so that PSCO would have appropriate theoretical knowledge and practical experience of ships and their operation. While the Directive establishes the minimum criteria, the Paris MoU has developed the *Paris MoU Policy on the training of the new entrant PSC Officers and the professional development scheme for PSC Officers* which establishes a convergent training policy for both new and experienced PSCOs. Although this

policy determines a thorough professional development scheme and a syllabus, it neither specifies how to conduct the training nor the number of hours necessary to accommodate the various elements of the policy. As pointed out by several policy makers, the implementation of the training policy is still a national responsibility and cannot be enforced by the EC. It is not included in the text of the Directive, which would make it legally binding.

“What training is implemented nationally? Because actually on a national level we don’t really know how they do it. It’s their responsibility [...] Let’s say on the other side as soon as they are port state control officer from that moment on they become either a new entrant in our training policy or they are the experienced PSCOs and they go for the professional development scheme. That’s all laid out, what are the requirements, what are the minimum standards, what is the material (ahem) so that’s let’s say something that we are much better able to monitor” (Paris MoU Secretariat)

According to the group of the Policy Makers, the participants were almost unanimous in suggesting that training procedures among EU MSs are not harmonised. Some considered the training policy of the different MSs as a ‘black hole’ (P1), while others made a clear-cut difference between those countries with developed training schemes and those with a ‘training on the job’ policy:

“Some countries (ahem) have an elaborate system which requires that the Port State Control Officer almost finishes like (ahem) a university degree in Port State Control before Master’s Degree before he’s allowed to work as a Port State Control Officer [...] there are other countries where they hire a new guy who is then left alone from day one. And only has to call back to the office when he has a problem. Which is a massive difference of course and this is then (ahem) visible in inspection results, it is visible in reactions of companies towards inspection and it’s damaging or not to the reputation of the organization, the Paris MoU in general or the MoU in general” (EMSA)

However, with other stakeholders, with the exception of INTERMANAGER and IACS, the topic of training was rarely mentioned.

The participants convened that a harmonised training policy is the most effective tool to ensure common treatment. In fact, it was suggested that the national attitude towards training has a deep impact on the way PSCO approach their job, what methodology they learn and apply, what knowledge of the relevant conventions they have, etc. In order to develop a comprehensive picture of the training commitment of the various MSs, the total number of training hours (both desk and practical training) per person, provided to new and existing personnel, should be investigated through the reports compiled by EMSA at the end of the visits to MSs investigating the implementation and enforcement of Directive 2009/16/EC, as amended.

4.3. Inspector level

The second main cluster of codes, which summarizes some of the circumstances that may determine discrepancies in the output of the inspection process, entails the inspector level. In detail:

- **Background of the PSCOs**
- Cultural influence
- **Professional Judgment**
- Attitude/Approach on Board

Since *Cultural influence*, and *Attitude/Approach* on board have mainly been discussed in relation to the *Professional Judgment* and *Background of the PSCO*, these two factors will be explored with more detail in the following sections.

4.3.1. Professional judgment

Discretion, subjectivity, individuality, professional judgment and other equivalent concepts have broadly been interpreted as one of the circumstances leading to difference in treatment across countries and ports (Bloor et al., 2006; Özçayır, 2009; Sampson and Bloor, 2007). The definition suggested by Coles (2002) states that professional judgment is exercised when a practitioner, in this case the PSCO, makes judgment calls in an uncertain situation. The text of the Annex I of the Paris MoU itself states that:

“The Port State Control Officer will (...) use his professional judgement in deciding whether and in what respects the ship will be further inspected” (Paris MoU, 2017)

and also, in the PSC Committee instructions on “Guidance on Detention and Action Taken”:

“The PSCO will exercise professional judgment in determining whether to detain the ship until the deficiencies are rectified or to allow it to sail with certain deficiencies without unreasonable danger to the safety, health, or the environment, having regard to the particular circumstances of the intended voyage” (Paris MoU, 2016)

Some participants have expressed severe criticisms on the over-reliance on expert judgment which inherently does not contribute to the harmonization process. Others, such as some industry and seafarers’ representatives, seem to appreciate the flexibility which would not be achievable if other strategies would be applied (e.g. checklists, etc.).

Overall, two main issues can be raised. Firstly, professional judgment may undermine the main objective set by Directive 2009/16/EC, as amended, which is to enforce rules and standards of international applicable conventions. Allowing for subjectivity can cause inconsistencies in decision outcomes (Hawkins, 1992 as cited in Bloor et al., 2006). Secondly, the exercise of professional judgment implies that the PSCO must be a professional. The existence of minimum criteria for PSCO has already been clarified above. However, inconsistencies in the training policy of MSs and different professional backgrounds may affect the level of professionalism matured by the PSCO.

Several factors may influence expert judgment: prejudices, cultural attitude, professional background, training, ego, personal opinions among others (P1 – P2 – P3 – P6 – P7 – P8 – P9 – P11 – P12 – P13). Some of these factors, for example, were identified also in a study conducted by Carter (2006) on the variance of police behaviours. Taking into consideration the input provided by the participants, a mitigation could be achieved by means of a soft or hard approach. The soft approach focuses on harmonising the training policy pertaining inspection procedures, detention criteria and convention requirements. Conversely, the hard approach would suggest more prescriptive procedures and, ultimately, the use of checklists during inspections.

4.3.2. Background of the PSCOs

The background of the inspector has dominated the discussion in all interviews. It seemed clear that whether nautical, engineering or naval architecture, the background has a leading role not only in determining the outcome of the inspection itself (e.g. detaining or not the vessel, type of deficiencies found, etc.), but sometimes even on the attitude and approach on board. As a criterion, it was pointed out that since an engineer finds himself/herself more comfortable in the Engine Room as well as a Captain finds himself/herself more comfortable on the Bridge, the inspections and eventual deficiencies would reflect their proficiency in these arenas:

“You’ve done 30 years as a deck officer therefore your Port State Control is always limited to an inspection of the bridge. You’re never going to the Engine Room” (IACS)

Or also:

“[...] if you are if you are, say, you are technical background. Your comfort zone is engine room. Ok? So our so you-the tendency is if I am a ships ‘captain, as a Port State Control I’ll tend to spend more time on the bridge because I know what hole I can find wrong. The opposite can happen if you’re engineer you will spend more time in the engine room. If you’re a naval architect, you might spend more time on the structural issues rather than (ahem) the operational issues related to... and not more on navigation. He will might look into the ship structure and the (ahem) the steel work et cetera.” (NAUTICAL INSTITUTE)

This issue could be avoided by sending two inspectors with different background to perform a PSC inspection. It seemed clear that if the inspection would be conducted by an individual (and not a team) with one of the background mentioned above, the type of deficiencies and/or the areas visited on board could be the result of their professional skills developed before becoming a PSCO. Conversely, inspectors lacking a seafaring background have the tendency to conduct the inspection by the rules, having less technical and operational knowledge (P2-P4-P13-P8) yet a very good knowledge of the inspection procedures of their MoU (P2-P3).

Following the discussion on the background, a difference in approaches and attitudes has been underlined. Experts have indicated that ex-seafarers seem to be more indulgent towards the ship and the crew; it is easier to “get away with deficiencies” (P4). This might be explained by being more empathetic with the crew and by believing in the skills and the capability of the crew to fix deficiencies on their own (P2). To summarize, two inspection approaches have been identified: the first is where the PSCO on board tends to determine whether the vessel is safe to sail (approach more related to PSCOs with a seafaring background), while the second is to find deficiencies strictly following guidelines and procedures (approach more related to PSCOs lacking seafaring background, P2-P4-P8-P7-P6). However, this different perception may suggest that PSC has different perceived objectives according to the group of stakeholders dealing with it. Policy Makers seem to aim at finding substandard ships and increase the safety standard of the vessels sailing across EU waters by using common procedures which is in line with the rationale of the Directive, IMO Resolutions and the MoU text. Contrariwise, ship-owners seemed keener on targeting issues and in making sure that the general demeanour of PSCOs was to verify the seaworthiness of the vessel rather than compliance with the international legislation. While this approach may seem more reasonable, it does not take into consideration the main objective of PSC: determining compliance of vessels with applicable international rules and standards.

4.4. Differences between EU member states. Diverse structure and knowledge towards a north-south slope?

While the legal texts of the different MoUs are virtually identical, the enforcement of these provisions may change due to financial resources, training capabilities and/or infrastructures (Bang and Jang, 2012; Knudsen and Hassler, 2011; Plaza, 1994). Shipowners’ and seafarers’ representatives were almost unanimous in defining the Paris MoU as the best PSC regime where discrepancies are infrequent. However, slight differences between EU MSs have been highlighted (Sampson and Bloor, 2007); this is true especially when the debate pertains southern and northern countries in what has been called ‘north-south slope’ (P2). Some participants, such as P4-P2-P6-P7, have portrayed the southern countries of Europe as the keenest on detaining ships while in the north of Europe, MSs tend to perform an inspection ‘less by the rules’:

“Let me say that the barrier for where you are detained is less in the South and higher in the North. In the North, you can in more cases talk your way out of it” (P4 - BIMCO).

PSC in Northern countries has been considered more robust in terms of maritime knowledge since PSCOs are generally ex-seafarers. However, a structured approach towards procedures seems challenging to be achieved. The consequence is that the perception of quality is higher for seafarers and industry (P4-P7) but not for policy makers. Conversely, in Southern countries, the subjectivity of the inspectors and the lack of seafaring experience may play a larger role in the conduction of inspections. However, whereas seafaring knowledge may be lacking, adherence to structured procedure seems easier to achieve. This way, the perception of quality seems higher for policy makers but not for seafarers and industry.

4.5. Quality of the research

In recent years, some authors have suggested that validity, reliability, objectivity and generalisability may not be the best suitable criteria to evaluate qualitative inquiries (Hammersley, 2007; Hoepfl, 1997; Patton, 2015; Yilmaz, 2013). For this reason, alternative criteria such as those of credibility, dependability, confirmability and transferability were initially developed by Guba and Lincoln (1989) and adopted for this study. The overall work was subject to an analytical triangulation conducted through a review by inquiry participants an independent audit review (n = 3).

In detail, to establish high level of credibility, the manuscript was submitted to three independent experts which evaluated the methodology and the quality of the findings. At the same time, to determine confirmability, the manuscript was submitted to the 14 participants to collect their views and potential post-comments in the paper discussion. Dependability was achieved through a code-recode procedure throughout the analysis of the data after waiting at least two weeks from the initial coding. Lastly, to provide transferability, thorough information regarding the participants, the context and the methods employed are illustrated to the reader.

4.6. Limitations and future perspectives

It should be noted that this paper has been primarily focused on the identification of discrepancies and challenges (if any) in the Paris MoU region, targeting EU countries only, and does not address other areas explored during the interview study.

Although the use of elite interviews is highly beneficial to gain insights into the decision-making process, to provide information non-recorded in official reports and to shed light on hidden elements in the area under investigation (Richards, 1996), the results can be affected by biases. Overall, issues of accessibility of the participants and the power relationship between interviewer and interviewee may shape the data and the reliability of the data collected (Boucher et al., 2013). While no accessibility issues were reported in the study, Berry (2002) suggests that the most efficient way to steer the conversation is for the interviewer to become an expert in the subject; experience which is covered by the authors of this paper. Moreover, the authors favoured semi-structure interviews instead of fully open-ended interviews (as generally suggested for elite interviews) to ensure a higher degree of transferability and dependability.

The findings of this study are restricted to individuals/experts which have a broad knowledge of the topic under investigation and also hold a position of prestige in the hierarchy of the contacted agency, entity, company or association. This also suggests that due to their public/private roles, the participants may have refrained to give strong statements and opinions. It is suggested for future studies to expand the scope of the study to other subject-related experts such as PSCOs, Administrators and multiple seafarers. In addition, it must be taken into consideration that the participants may have wanted to cover only some issues rather than others by focusing their attention on topics they are more involved into.

On a higher level, since EU policy makers are embarking on the

revision of the relevant legal framework, the findings of this article may highlight areas needful of amendments for a new Directive on PSC and steer the regime towards a new course.

5. Conclusions

The body of literature dealing with PSC in the last years has greatly focused on demonstrating whether differences in treatment would exist among MoUs. However, few studies have discussed whether differences appear within the same MoU. This article complements other scientific work by highlighting the main factors leading to differences in approach at the inspector and MS level in the EU region.

According to the results, it is fair to say that the Paris MoU appears the most effective and reliable of the regional agreement on PSC. This is true especially for seafarers' and shipowners' representatives while policy makers maintain a more neutral assessment.

Nonetheless, a difference in maritime knowledge and structure of the inspection process was identified between Northern and Southern EU countries. PSCOs from the former group of countries tend to have a thorough maritime knowledge due to their professional background. Still, they lack a structured ship inspection approach due to over-reliance on experience and expertise. On the contrary, PSCOs from the latter group of countries seem to rely more on a structured ship inspection approach due to their lack of seafaring experience.

Despite the positive achievements reached in 40 years of coordinated PSC by the EU, some strategies were suggested to overcome the

differences identified. Above all, advocating for a single training policy for PSCOs, multidisciplinary teams on board and more structured inspection procedures appeared the main mitigation approaches suggested by the participants. In addition, it is our belief that the introduction of a different legal system, such as a Regulation, would prevent transposition and application concerns and favour harmonization. The authors hope that this study and its findings can contribute to the corpus of reference materials that will inform EU policymakers as they embark on a recast of the relevant legal framework. An initiative which could represent a new point of departure for EU Port State Control.

Funding

This work was supported by the European Commission and the SAFEPEC project [grant number FP7-SST-2013-RTD-4-2. 605081].

Acknowledgments

The authors would like to thank all the institutions that have participated in this study for their assistance and know-how which greatly improved the quality of the results. The authors would also like to thank Dr. Milena Studic, Dr. Gesa Praetorius, the reviewers and the other experts who preferred to remain anonymous for their invaluable support. The views presented in the paper are the authors' own opinions.

Appendix A. Interview guide

General objective: What is the perception of PSC among diverse actors within the maritime domain?

1. Demographic:

- What is your age?
- What is your nationality?
- What is your current position/occupation?
- What training/qualifications do you have that are of relevance to your current position or occupation? (e.g. Master degree, etc.)
- How long have you worked in this position or occupation?

2. Inquiry about the participant's general perception on Port State Control, covering objectives and effectiveness:

- When discussing about PSC regimes, how would you define their primary goals/objectives?
- What aspects would make you consider effective a PSC regime?

3. Inquiry about the challenges/differences, if any, among PSC regimes across the World. Determine in what aspects and what factors:

- Do you believe differences exist among PSC regimes across the World?
- Follow up with probing questions such as “in what aspects?” – “what factors would influence these aspects?”

4. Inquiry about PSC in the European Union. Determine the general evaluation of the PSC regime and what aspects and/or factors would determine challenges/differences in the current regime:

- How do you evaluate the overall PSC regime in Europe in reaching its objectives?
- How would you consider the application of PSC in Europe in light of consistency?
- According to your professional experience, in what aspects PSC is applied less/more consistently?
- What factors would influence these aspects?
- Do you think that the inspector background could influence the inspection outcome? In what way?
- Do you think that the inspector training could influence the inspection outcome? In what way?
- How would you evaluate the detention criteria across Europe?

5. Inquiry about what would be needed to be changed in the current PSC Regime in Europe.

- What aspects would you modify in the current PSC regime in Europe?

General probing questions used in the study:

- Could you elaborate more on that?
- What could be the influencing conditions?
- What do you mean by [...]?
- I'd like to hear more about [...]?
- May I ask you to think back and elaborate more on that?
- According to your professional experience [...]

Appendix B. Extract of the final template

1st level code	2nd Level code	3rd Level code
Challenges/Discrepancies in Europe	Inspector Level	Professional Judgment (subjectivity) Cultural Influence Background of PSCOs Attitude/Approach on board
	Difference between MSs	Inspection Outcome/Detention criteria Inspection procedures
	MSs Level	Use of teams on board Training of PSCOs Political influence and/or support Internal Administrative Structure Resources National or Local Legislation

References

- Anderson, D., 1998. The roles of flag States, port States, coastal States and International organisations in the Enforcement of International rules and Standards governing the safety of navigation and the prevention of pollution from ships under the UN Convention on the law. *Singap. J. Int. Comp. Law* 2, 557–578.
- Anderson, D., 2002. The effect of port state control on substandard shipping. *Marit. Stud.* 125, 20–25.
- Bang, H.-S., 2009. Port state jurisdiction and article 218 of the UN convention on the law of Sea. *J. Marit. Law Commer.* 40 (2), 291–313.
- Bang, H.-S., Jang, D.-J., 2012. Recent developments in regional memorandums of understanding on port state control. *Ocean Dev. Int. Law* 43 (2), 170–187.
- Bell, D., 1993. Port state control v flag state control: UK government position. *Mar. Policy* 17 (5), 367–370.
- Berry, J.M., 2002. Validity and reliability issues In elite interviewing. *Polit. Sci. Polit.* 35, 679–682.
- Bloor, M., Datta, R., Gilinskiy, Y., Horlick-Jones, T., 2006. Unicorn among the Cedars: on the possibility of effective 'smart regulation' of the globalized shipping industry. *Soc. Leg. Stud.* 15 (4), 534–551.
- Boucher, A., Maboob, A., Dutcher, L., 2013. Power and solidarity in elite interviews, **APSA 2013 Annual Meeting, Chicago.**
- Cariou, P., Mejia, M.Q., Wolff, F.-C., 2008. On the effectiveness of port state control inspections. *Transp. Res. E: Logist. Transp. Rev.* 44 (3), 491–503.
- Cariou, P., Mejia, M.Q., Wolff, F.-C., 2009. Evidence on target factors used for port state control inspections. *Mar. Policy* 33 (5), 847–859.
- Cariou, P., Wolff, F.-C., 2015. Identifying substandard vessels through Port State Control inspections: a new methodology for Concentrated Inspection Campaigns. *Mar. Policy* 60, 27–39.
- Carter, T.J., 2006. Police use of discretion: a participant observation study of game wardens. *Deviant Behav.* 27 (6), 591–627.
- Coleman, R., Jessen, H., 2016. General introduction: the regulatory framework for maritime transport in the European Union. In: Jessen, H., Werner, M.J. (Eds.), *EU Maritime Transport Law. Nomos Verlagsgesellschaft Baden, Germany*, 1–48.
- Coles, C., 2002. Developing professional judgment. *J. Contin. Educ. Health Prof.* 22 (1), 3–10.
- Degré, T., 2007. The use of risk concept to characterize and select high risk vessels for ship inspections. *WMU J. Marit. Aff.* 6, 37–49.
- Degré, T., 2008. From black-grey-white detention-based lists of flags to black-grey-white casualty-based lists of categories of vessels? *J. Navig.* 61 (3), 485–497.
- Falkner, G., Hartlapp, M., Leiber, S., Treib, O., 2004. Non-compliance with EU directives in the member states: opposition through the backdoor? *West Eur. Polit.* 27 (3), 452–473.
- Goldthorpe, J.H., 1968. *The Affluent Worker: Industrial Attitudes and Behaviour.* Cambridge University Press.
- Guba, E.G., Lincoln, Y.S., 1989. *Fourth Generation Evaluation.* SAGE Publications.
- Hammerley, M., 2007. The issue of quality in qualitative research. *Int. J. Res. Method Educ.* 30 (3), 287–305.
- Hare, J., 1997. Port state control: strong medicine to cure a sick industry. *Ga. J. Int. Comp. Law* 26 (3), 571–594.
- Hjorth, F., 2015. Complexity and ambivalence in ship safety inspection - the view of Swedish port state control officers. Växjö: Linna. Univ. Press, 2015.
- Hoepfl, M.C., 1997. Choosing qualitative research: a primer for technology education researchers. *J. Technol. Educ.* 9 (1), 47–63.
- Keselj, T., 1999. Port state jurisdiction in respect of pollution from ships: the 1982 United Nations Convention on the law of the Sea and the memoranda of understanding. *Ocean Dev. Int. Law* 30 (2), 127–160.
- King, N., 2004. Using templates in the thematic analysis of text. In: Cassell, C., Symon, G. (Eds.), *Essential Guide to Qualitative Methods in Organizational Research.* SAGE Publications Ltd, London, 256–270.
- Knapp, S., Franses, P.H., 2007a. Econometric analysis on the effect of port state control inspections on the probability of casualty. *Mar. Policy* 31, 550–563.
- Knapp, S., Franses, P.H., 2007b. A global view on port state control: econometric analysis of the differences across port state control regimes. *Marit. Policy Manag.* 34, 453–482.
- Knapp, S., van de Velden, M., 2009. Visualization of differences in treatment of safety inspections across port state control regimes: a case for increased harmonization efforts. *Transp. Res.* 29, 499–514.
- Knudsen, O.F., Hassler, B., 2011. IMO legislation and its implementation: accident risk, vessel deficiencies and national administrative practices. *Mar. Policy* 35, 201–207.
- Mansell, J.N.K., 2009. *Flag State Responsibility: Historical Development and Contemporary Issues.* Springer, Heidelberg.
- Miles, M.B., Huberman, A.M., Saldaña, J., 2013. *Qualitative Data Analysis: A Methods Sourcebook.* SAGE Publications.
- Molenaar, E.J., 2007. Port state Jurisdiction: toward comprehensive, mandatory and Global coverage. *Ocean Dev. Int. Law* 38 (1–2), 225–257.
- Özçayır, O., 2004. *Port State Control* 2nd ed. LLP, London.
- Özçayır, O., 2009. The use of port state control in maritime industry and application of the Paris MoU. *Ocean Coast. Law J.* 14 (2), 201–239.
- Paris MoU, 2016. *Guidance on Detention and Action Taken, Port State Control Committee Instruction 49/2016/08REV.* Secretariat Paris MoU on PSC, The Hague, The Netherlands.
- Paris MoU, 2017. *Paris Memorandum of Port State Control 40th Amendment.* Secretariat Paris MoU on PSC, The Hague, The Netherlands.
- Patton, M.Q., 2015. *Qualitative Research & Evaluation Methods: Integrating Theory and Practice* 4th ed. SAGE Publications, Inc, Thousand Oaks, California.
- Payoyo, P.B., 1994. Implementation of international conventions through port state control: an assessment. *Mar. Policy* 18, 379–392.
- Perepelkin, M., Knapp, S., Perepelkin, G., de Pooter, M., 2010. An improved methodology to measure flag performance for the shipping industry. *Mar. Policy* 34, 395–405.
- Plaza, F., 1994. Port state control: towards Global Standardisation. *Marit. Stud.* 1994 (75), 28–34.
- Ravira, F.J., Piniella, F., 2016. Evaluating the impact of PSC inspectors' professional profile: a case study of the Spanish Maritime Administration. *WMU J. Marit. Aff.*, 1–16.
- Reynolds, J., Kizito, J., Ezumah, N., Mangesho, P., Allen, E., Chandler, C., 2011. Quality assurance of qualitative research: a review of the discourse. *Health Res. Policy Syst.*

- 9, (43-43).
- Richards, D., 1996. Elite interviewing: approaches and pitfalls. *Politics* 16, 199–204.
- Sage, B., 2005. Identification of 'High Risk Vessels' in coastal waters. *Mar. Policy* 29 (4), 349–355.
- Sampson, H., Bloor, M., 2007. When jack gets out of the box: the problems of regulating a global industry. *Sociology* 41 (3), 551–569.
- Trochim, W.M.K., Donnelly, J.P., 2006. *The Research Methods Knowledge Base*. Cengage Learning, Mason, USA.
- van Leeuwen, J., 2015. The regionalization of maritime governance: towards a polycentric governance system for sustainable shipping in the European Union. *Ocean Coast. Manag.* 117, 23–31.
- Vorbach, J.E., 2001. The Vital role of non-flag state actors in the pursuit of safer shipping. *Ocean Dev. Int. Law* 32 (1), 27–42.
- Yilmaz, K., 2013. Comparison of quantitative and qualitative research traditions: epistemological, theoretical, and methodological differences. *Eur. J. Educ.* 48 (2), 311–325.