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MARITIME SECURITY: PREVENTION OF MARITIME TERRORISM BY INTERNATIONAL SHIP AND PORT SECURITY (ISPS) CODE

*Burak Şakir ŞEKER**

ABSTRACT

International Maritime Organization (IMO) developed a set of maritime security regulations for managing the risk of maritime terrorism with the aim to improve maritime and port security after the September 11th, 2001 terror attack. In this regard, a unique codification has been developed in response to the perceived threats to ships and port facilities and named with International Ship and Port Facility Security (ISPS) Code aiming the comprehensive set of measures to enhance the security of ships and port facilities. In this research, to be able to realize the today's situation, a literature review of academic and operational efforts related to implementation and compliance issues of the ISPS Code are provided. This investigation was initially oriented solely towards Europe, as part of an on-going individual project with the subject of "maritime security", however, the final data sample allowed for a wider geographical coverage and an expanded scope of analysis, since 9 different academic databases were exploited. First of all the literature review from both author-centric and concept-centric approaches are presented; then, the careful screening of literature, constructed on specific concepts, allowed the identification of cross-fertilization of these concepts in the respective fields. The results demonstrate that the research efforts focused on the ISPS Code and the development of a Port Facility Security Plan (PFSP) have an integrated perspective, where the categories of terrorism and counterterrorism, as well as maritime security management and the issue of port security have a strong interaction and dominant status. Additionally, although the main focus of the literature is on security, safety issues are quite often addressed, with oil spill and environmental protection also being included in the consequences of security incidents. In this literature review framework, the research aims to show the effectiveness of the ISPS Code in addressing maritime security and



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preventing of maritime terrorism in addition trying to touch the implementation and compliance issues.

STRUCTURED ABSTRACT

International Maritime Organization (IMO) developed a set of maritime security regulations for managing the risk of maritime terrorism with the aim to improve maritime and port security after the September 11th, 2001 terror attack. In this regard, a unique codification has been developed in response to the perceived threats to ships and port facilities and named with International Ship and Port Facility Security (ISPS) Code aiming the comprehensive set of measures to enhance the security of ships and port facilities. In this research, to be able to realize the today's situation, a literature review of academic and operational efforts related to implementation and compliance issues of the ISPS Code are provided. This investigation was initially oriented solely towards Europe, as part of an on-going individual project with the subject of "maritime security", however, the final data sample allowed for a wider geographical coverage and an expanded scope of analysis, since 9 different academic databases were exploited. First of all, the literature review from both author-centric and concept-centric approaches are presented; then, the careful screening of literature, constructed on specific concepts, allowed the identification of cross-fertilization of these concepts in the respective fields. The results demonstrate that the research efforts focused on the ISPS Code and the development of a Port Facility Security Plan (PFSP) have an integrated perspective, where the categories of terrorism and counterterrorism, as well as maritime security management and the issue of port security have a strong interaction and dominant status. Additionally, although the main focus of the literature is on security, safety issues are quite often addressed, with oil spill and environmental protection also being included in the consequences of security incidents. In this literature review framework, the research aims to show the effectiveness of the ISPS Code in addressing maritime security and preventing of maritime terrorism in addition trying to touch the implementation and compliance issues.

The literature search method encompassed querying 9 different scientific databases as proposed by Webster & Watson (2002, p. xvi). Apart from articles, the literature review also included book chapters and other relevant documents captured during the search process. The key words used for the search criteria, excluding the Google Scholar Database, were "offshore, terrorism, Europe". Furthermore, since probably there are thousands of articles related to each of these concepts, testing different combination of them was required. Other combination of words was tested first, like "offshore, terrorism, resilience" and "offshore, terrorism, resilience, security management systems, ISPS Code". It was discovered that these search enquiries covered lots of items. Since the words used for querying the different databases were in English, the search included only academic journal articles written in English. However, for the Google Scholar Database another combination of words in Turkish was used; "Türkiye, terörizm, gemi ve liman tesisi, güvenlik, koruma planı". The time boundary was specified to 2004-2017 (after the ISPS Code was introduced). Even if the words were in Turkish, some

articles in English were also captured by this search. It was decided to also use Google Scholar because several of the leading scientific journals in Spanish are indexed there. The considered databases for this literature review and the parameters for querying are all listed in Table 1 below.

Databases	CRC-net-Base	ProQuest	Science Direct	Springer	Emerald Insight	IEEE Xplore Digital Library	Wiley Online Library	Google Scholar	Ulakbim
Articles/Books	190	28	279	1	82	134	614	472	23
Selection after examining Title/Content	61	25	41	1	18	24	52	45	11
TOTAL	Articles/Books: 1823			Selection after examining Title/Content: 278					

Table 1: Selective Parameters and Databases

The search resulted into 1823 articles/books, which was reduced to 278 only after examining the titles and consideration of abstracts, preface summary, as well as introduction and table of contents in the case of books. Those that were not included in the next stage were clearly related to concepts that had a better fit with a different discipline -or a different context- and did not comply with the specific combination. The literature review from an author-centric approach is presented in Table 2 that follows next. The selected categories covering the topic to study (and used for developing the literature review) are the following:

- Concept 1= Terrorism (at sea or maritime terrorism).
- Concept 2= Counterterrorism 113
- Concept 3= Port Facility Security Plan
- Concept 4= International Ship and Port Facility Security Code
- Concept 5= Maritime Security
- Concept 6= Safety
- Concept 7= Oil Spill & Environmental Protection
- Concept 8= Resilience plan –In the sense of prevention & response & to emergencies (preventive and reactive measures to emergencies)

As it can be observed in the following Table 2, in various research efforts (mostly books), the focus includes the analysis of different concepts in relation to the categories selected above. A significant number of books focused on port and maritime security, addressing the ISPS Code and PFSP. However, it is noteworthy that safety issues, as a result of security incidents were also addressed in these books. The most common identified issue was marine pollution caused by oil spill associated with a security incident. The complete list of the references related to these research items is presented in Appendix I.

	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	Concept 6	Concept 7	Concept 8
Books according to Concepts	14	2	2	2	16	1	4	5
Articles according to Concepts	27	15	4	4	19	17	9	20
Total	41	17	6	6	35	18	13	25

Table 2: Concept/Author-centric literature review

Even though the concept of “terrorism” has been discussed by several authors in the past, there is not a sole definition. Tuerk (2012, p.103) pointed out that there is not an authoritative definition of this term, but that all definitions have several features in common: “first, there must be actual or threatened violence; second a political motive is necessary; finally, the acts must be directed at and intended to influence a targeted audience”. Kenneth (2009) defines “counterterrorism” in his glossary, as “offensive strategies, tactics and plans used by government agencies, military forces, law enforcement agencies, and private sector organizations to mitigate the threat of terrorism by reducing the chances that individuals or groups can successfully wage campaigns of terror in pursuit of their organizational goals”. Finally, in the context of maritime terrorism and maritime security, discussed by Klein, Rothwell, & Mossop, (2009, p. 242-243), counterterrorism may be understood as the capacity of a state to respond to sudden and unanticipated threats.

Counterterrorism capacity is one of the objectives of any PFSP, which is an instrument embodied in the ISPS Code to ensure the application of security measures deliberated to protect the port facility and its serving vessels, their cargoes, and persons on board at the respective security levels. According to Kenneth (2009, p.99), a port facility is required to “plan and effect security at the levels identified in the risk assessment process and as established by the governmental entities with statutory responsibilities for port security oversight”. This author also emphasized the need of standardizing the terms used in the plan since a term like security, for instance, may have a different meaning for different people in different environments. For the purposes of developing a port facility security plan, he correctly identified that a working understanding of the security should include a set of measures aimed to:

- Neutralizing vulnerabilities for criminal activity within the port,
- Identifying and responding to safety issues,
- Minimizing the threat of terrorism,
- Reducing opportunities for internal criminal conspiracies,
- Disrupting links between corruption, terrorism and organized crime,
- Sharing intelligence information, with appropriate law enforcement agencies,

- Promoting opportunities for the exchange of best practices in port security

For Espin-Digon, Burns-Herbert, & Bateman (2008, p.4), the ISPS Code is a security regime formulated under the auspices of the IMO to strengthen the maritime security in general, and prevent and suppress acts of terrorism against the maritime realm. These authors clarify that passenger ships, including high-speed passenger craft, cargo ships of 500 gross tonnage and above, Mobile Offshore Drilling Units (MODUs) and all port facilities serving ships engaged in international voyages are required to comply with the ISPS Code, according to the established in the SOLAS Chapter XI-2. They also correctly identified that the ISPS aim is to provide a standardized consistent framework for evaluating risk, enabling governments to offset according to changes in different threat levels affecting the vulnerability of vessels, port and offshore facilities.

Likewise, the concepts of terrorism and counterterrorism are (directly or indirectly) related to both the maritime safety and security domains, because of the severe consequences that are resulted from a successful attack as well as the need the necessary detailed preparation to avoid these “unpleasant events”. In any case, these are various important concepts addressed via the ISPS Code, which establishes guidelines and recommendations for the development of the PFSP. In the long run, the ISPS is a toolbox that sets out processes and procedures to cope with the risks within the maritime security domain.

As it can be seen in the concept matrix, the category of “terrorism at sea or maritime terrorism” was the most studied according to findings of this literature review, with 41 different articles or books examining this topic; the topic of maritime security followed with 35 instances. The fact that “terrorism” and “maritime security” were most commonly presented in the research items could be attributed to the recent terror attack threats worldwide, a situation that has brought global interest on the issue of terrorism at sea and the respective maritime security framework for managing the risk of maritime terrorism and improve maritime and port security.

As it has been demonstrated in this literature review, research efforts focused on the ISPS Code and the development of a PFSP have an integrated perspective, where the concepts of terrorism and counterterrorism, as well as maritime security management and the issue of port security have a strong interaction and dominant status. Additionally, the safety issue is quite often addressed, with oil spill and environmental protection being included in the consequences of security incidents.

On the other hand, if the ISPS Code depends on maritime security at this comprehensive level then it needs to bear mind that other sub-topics except terrorism should also be there with the holistic approach: piracy, human trafficking (illegal migration), migrant smuggling, mixed migration, irregular migration, arms smuggling, drug trafficking, international organized crime, proliferation of weapons of mass destruction.

Closing with a positive note, after a total of 14 years after the approval and implementation of the ISPS Code, there have been identified quite a few different approaches to security risk assessment

methodologies as it can be observed through the currents literature review. On the other hand, more emphasis on the implementation issues of the ISPS Code is clearly needed to ensure that apart from theory, field results are resulting into an acceptable security risk level.

Keywords: ISPS Code, Maritime, Security, Terrorism

DENİZ GÜVENLİĞİ: DENİZ TERÖRİZMİNİN ULUSLARARASI GEMİ VE LİMAN TESİSİ GÜVENLİĞİ (ISPS) KODU İLE ÖNLENMESİ

ÖZET

Uluslararası Denizcilik Örgütü (IMO), 11 Eylül 2001 terör saldırısından sonra deniz ve liman güvenliğini geliştirmek amacıyla birlikte deniz terörizmi riskini yönetmek için bir takım deniz güvenliği mevzuatı geliştirmiştir. Bu kapsamda, gemi ve liman tesisleri için algılanan tehditlere cevap vermek ve bunların güvenliğini artırmaya yönelik bir dizi kapsamlı önlem almak amacıyla Uluslararası Gemi ve Liman Tesisi Güvenliği Kodu (ISPS Code) adında özel bir kodifikasyon geliştirilmiştir. Bu çalışmada, günümüz durumunun değerlendirilebilmesi adına, ISPS Code'un şartlarının sağlanması ve uygulanması konularındaki akademik ve harekate yönelik çabaların bir literatür değerlendirilmesi yapılmıştır. Halihazırda devam eden “deniz güvenliği” konulu bireysel bir projenin parçası olan araştırma, her ne kadar başlangıçta sadece Avrupa'ya yönlendirilmiş olsa da elde edilen bilgi örnekleme daha geniş bir coğrafyaya ve genişletilmiş bir bakış açısına izin vermiş, böylece 9 farklı akademik veri tabanı incelenmiştir. Öncelikle hem yazar merkezli hem de konu merkezli yaklaşımlarla literatür değerlendirilmesi sunulmuş, özel konular üzerinde durularak yapılan detaylı literatür taraması, bu konuların ilgili alanlarında çapraz eşleştirmeye tanımlanmasına izin vermiştir. Sonuçlar göstermektedir ki terörizm-terörizmle mücadele ile birlikte deniz güvenliği yönetimi-liman güvenliği konulu kategorilerin kuvvetli bir etkileşim içerisinde ve baskın durumda oldukları bir ortamda, ISPS Code'a ve Liman Tesisi Güvenlik Planı'nın (PFSP) geliştirilmesine odaklanmış araştırma çabaları iç içe geçmiş bir bakış açısına sahiptir. Ayrıca, her ne kadar literatürün ana konuları olan güvenlik ve emniyet konularına sıklıkla değinilse de bu hususlar, petrol dökülmesi ve çevre koruma ile birlikte güvenlik olaylarının sonuçlarına da dahil edilmiştir. Bahse konu literatür değerlendirmesi kapsamında; araştırma, ISPS Code'un uygulanması ile şartlarının yerine getirilmesindeki sorunlara ilave olarak deniz güvenliğine cevap verme ve deniz terörizmini önleme konularındaki etkinliğini göstermeyi hedeflemektedir.

Anahtar Kelimeler: ISPS Code, Denizcilik, Güvenlik, Terörizm

Introduction

After the notorious terror attack in the United States of America (U.S.) on September 11th, 2001 (Yüksel, 2016, s. 1402), the IMO developed a set of maritime security regulations for managing

the risk of maritime terrorism with the aim to improve maritime and port security. These provisions were established in Chapter XI-2 of the Safety of Life at Sea Convention 1974, (SOLAS Convention), containing the new ISPS Code. (Öztürk ve Turna, 2017, s. 419) Part A of this Code establishes the mandatory provisions, while the non-mandatory (“recommended”) part B encompasses guidelines about how to comply with the mandatory requirements of part A, (IMO, Official website, 2017).

The IMO establishes that the ISPS Code is “the comprehensive set of measures to enhance the security of ships and port facilities, developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States” (IMO, Official website, 2017). As explained by Nordfjeld & Dalaklis (2016), compliance with the ISPS Code and submission of related information to IMO is only mandatory for Contracting Governments to the SOLAS 1974 Convention. On the other hand, currently, there is not a penalty-mechanism in place for states that don’t effectively comply with the ISPS Code since the overall concept is not to impose penalties, but to rely on market forces and economic factors to ensure compliance. (Şeker, 2018, 301)

The development of PFSPs has been discussed within the context of maritime security management systems in several research efforts after the approval of the ISPS Code by the IMO; it has been viewed as the most important instrument to cope with potential security risks at ports and associated infrastructure installations. Most of European countries have already implemented the ISPS Code and received the necessary certification; yet, the development/establishment of PFSPs has not been fully effective, especially regarding security incident reporting and investigation. Incident record keeping and the consequent investigation are crucial for the performance and applicability of PFSPs, since these plans must be amended attending the causes of the investigated event.

As discussed by Webster & Watson (2002), an effective literature review is a crucial foundation for advancing knowledge, because it defines the key sources for a topic under research and uncovers the areas where (more) research is necessary, giving a clear contribution to science. Additionally, an effective literature review must follow academic guidelines to rigorously document the process of literature search as discussed by Brocke, et al. (2009); the literature review in hands strictly follows a linear and simple approach that ensures academic integrity. The foundation of the methodology used is presented in the next section; subsequently, the results are discussed, followed by the necessary conclusions.

Methodology

Webster & Watson (2002, p. xiv) explained that a high-quality review must cover all relevant literature on the topic and should not be confined to a limited set of journals. Therefore, a thorough search by topic in different databases across all relevant journals and across all disciplines must be performed. The contextual boundary is within the scope of the development of the PFSP for port oil terminals in Europe, under the framework of the opening of the oil industry in these countries; the respective time-based boundary covers all articles published in journals and conference proceedings until the indicated dates for search at the databases given in table 1 that follows. This table describes the considered databases for this literature review and the parameters for querying.

The literature search method encompassed querying 9 different scientific databases as proposed by Webster & Watson (2002, p. xvi). Apart from articles, the literature review also included book chapters and other relevant documents captured during the search process. The key words used for the search criteria, excluding the Google Scholar Database, were “offshore, terrorism, Europe”. Furthermore, since probably there are thousands of articles related to each of these concepts, testing different combination of them was required. Other combination of words was tested first, like

“offshore, terrorism, resilience” and “offshore, terrorism, resilience, security management systems, ISPS Code”. It was discovered that these search enquiries covered lots of items.

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Results

The search resulted into 1823 articles/books, which was reduced to 278 only after examining the titles and consideration of abstracts, preface summary, as well as introduction and table of contents in the case of books. Those that were not included in the next stage were clearly related to concepts that had a better fit with a different discipline -or a different context- and did not comply with the specific combination. The literature review from an author-centric approach is presented in Table 2 that follows next. The selected categories covering the topic to study (and used for developing the literature review) are the following:

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Table 2: Concept/Author-centric literature review

Discussion

Even though the concept of “terrorism” has been discussed by several authors in the past, there is not a sole definition. Tuerk (2012, p.103) pointed out that there is not an authoritative definition of this term, but that all definitions have several features in common: “first, there must be actual or threatened violence; second a political motive is necessary; finally, the acts must be directed at and intended to influence a targeted audience”. To emphasize this, maritime terrorism can be defined as a new challenge and furtherly overall side of the common aspect is arguably that an act is not terrorism unless it has a deliberate political motive. (Tuerk, 2012, p. 114-115) Kenneth (2009, p. 49), is in agreement with Tuerk that there are many definitions of terrorism and states that it is simply “the use of force or violence against people and places to intimidate and/or coerce a government, its citizens, or any segment thereof for political or social goals”. The author expands his explanation by arguing that terrorists try to coerce the adversary to obtain a goal without having to face the risk of a direct confrontation, fighting an asymmetrical war, which is a strategy used by the weaker side in the conflict to compensate for the strengths of the enemy. (Nurpeiis, 2013, s. 526)

Espin-Digon, Burns-Herbert, & Bateman (2008, p.55), have similar views to the abovementioned authors. They further discuss maritime terrorism, by arguing that despite the hysteria surrounding, acts of maritime terrorism are by no means frequent, because maritime terrorism requires a certain degree of familiarity with the sea. These researchers also noted that “terrorists would also need a kind of maritime domain awareness (MDA) to even think about including maritime attacks into their modus operandi –and the availability of a special set of knowledge and skills”. Even so, they correctly pointed that acts of maritime terrorism targeting ships, ports and oil terminals occur and that therefore it is necessary to be prepared with appropriate countermeasures. Kenneth (2009) defines “counterterrorism” in his glossary, as “offensive strategies, tactics and plans used by government agencies, military forces, law enforcement agencies, and private sector organizations to mitigate the threat of terrorism by reducing the chances that individuals or groups can successfully wage campaigns of terror in pursuit of their organizational

goals". Finally, in the context of maritime terrorism and maritime security, discussed by Klein, Rothwell, & Mossop, (2009, p. 242-243), counterterrorism may be understood as the capacity of a state to respond to sudden and unanticipated threats.

Counterterrorism capacity is one of the objectives of any PFSP, which is an instrument embodied in the ISPS Code to ensure the application of security measures deliberated to protect the port facility and its serving vessels, their cargoes, and persons on board at the respective security levels. According to Kenneth (2009, p.99), a port facility is required to "plan and effect security at the levels identified in the risk assessment process and as established by the governmental entities with statutory responsibilities for port security oversight". This author also emphasized the need of standardizing the terms used in the plan since a term like security, for instance, may have a different meaning for different people in different environments. For the purposes of developing a port facility security plan, he correctly identified that a working understanding of the security should include a set of measures aimed to:

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Kenneth (2009, p. 116) criticized that very often the PFSP exists only in paper, but it is rarely tested for effectiveness and emphasized that "the key to successful port security management in terms of the PFSP is to understand it as a living document". Vaggelas & Ng (2012), noted that based on the requirements of the PFSA (Port Facility Security Assessment), a PFSP has to be developed for each facility which has provisions for addressing changing security levels for every security operation and that a PFSP may cover more than one facility only provided that the operator, location, operation, equipment and design of those facilities are very similar to each other. As mentioned before, the PFSP is a requirement of the International Ship and Port Facility Security Code (ISPS Code), which came into force on July 1st. of 2004 and it is a part of the amendments to the 1974 Convention for the Safety of Life at Sea (SOLAS).

Kenneth (2009) defined the ISPS Code in his glossary, as the "comprehensive set of measures implemented in 2004 to enhance the security of ships and port facilities, developed and agreed to by member countries of the International Maritime Organization in response to the perceived threats to ships and port facilities after the September 11,2001, terrorist attacks in the United States". Vaggelas & Ng (2012, p.677-678) simplify that the Code has mainly two major components; part A that illustrates the minimum mandatory requirements that ships (represented by their firms) and ports (represented by the contracting government) must follow; while Part B provides more detailed, but not compulsory, guidelines for the implementation of security assessments and plans.

For Espin-Digon, Burns-Herbert, & Bateman (2008, p.4), the ISPS Code is a security regime formulated under the auspices of the IMO to strengthen the maritime security in general, and prevent and suppress acts of terrorism against the maritime realm. These authors clarify that passenger ships, including high-speed passenger craft, cargo ships of 500 gross tonnage and above, Mobile Offshore Drilling Units (MODUs) and all port facilities serving ships engaged in international voyages are

required to comply with the ISPS Code, according to the established in the SOLAS Chapter XI-2. They also correctly identified that the ISPS aim is to provide a standardized consistent framework for evaluating risk, enabling governments to offset according to changes in different threat levels affecting the vulnerability of vessels, port and offshore facilities.

Furthermore, in an article written by J. Urbansky, W. Morgas and M. Miesikowsky (2009) included in the book edited by Weintrit & Adam (2009, p.3), the authors stated that maritime security “is the security from the terrorism, piracy and similar threats, as well as effective interdiction of all the illicit activities on sea, such as pollution of the marine environment; illegal exploitation of sea resources; illegal immigration; smuggling the drugs, persons, weapons and other matters that can be used for terrorist activities”. All the above also explain why concepts number 1 and 5 are the ones most commonly presented in the research items, since interest on the issue of terrorism and the respective maritime security framework is high. On the other hand, concepts 3 and 4 are rather low in representation. This translates into the fact that implementation issues and related practicalities are clearly lagging behind.

On a different direction, but in similarity to the term of maritime security, there is not a sole and universal definition for the concept of maritime safety, although concepts such as protection of life and property at sea, risk assessment and prevention of hazards are standing out. Piètre-Cambacédès & Bouissou (2013, p.111-112), analyzed the similarities and differences between the two domains, safety and security. The authors pointed out that while security is connected to risks originated or exacerbated by a malicious action, independently from the nature of the related consequence, the concept of safety is linked to accidental actions i.e. without a malicious intention, but with potential impact to the related environment. They further clarify that in the security discipline it is common the use of the term threat, while in the safety discipline the tendency is to use the term hazard, even though they are used to describe identical concepts in several standards. An example provided by these authors is the use of the term incident, as an event with minor consequences in safety, while it means an infringement or breach with regards to security.

On this context, Kenneth (2009 p.223-224) cited the U.S. Department of Labor 2001 par.2, to emphasize that: “The core function of any work place safety and health program is to ‘find and fix’ hazards that endanger employees and to implement systems, procedures and processes that prevent hazards from recurring or being introduced into the work place. This element of a worker protection program has the most immediate and direct effect on injury and illness prevention”. The author also noted that port facilities present some unique and extraordinary challenges with respect to safety management because of the variation of operations and its interaction with the vessels, cargo and land-based people, as well as conveyances.

The issue of marine oil pollution is also considered a part of maritime safety and maritime security and it is included in the standards of training and certification as an important part of oil spill prevention. It is addressed as a possible consequence of security incidents. Oil spill has also been addressed several times within maritime security regarding possible terror scenarios. Espin-Digon, Burns-Herbert, & Bateman (2008, p.57), argue that one of the considered terror scenarios in United States is the floating bomb scenario, “that is, a hijacked liquefied petroleum gas (LPG) or liquefied natural gas (LNG) tanker driven into a major port and exploded there, with the intent of disrupting seaborne global trade”. The authors also refer to the “momentum weapon” scenario, which is about a large ship such as an ultra-large crude carrier or a chemical tanker, where the terrorists would attempt to drive the vessel into the harbor at a high speed to ram either other ships with vulnerable cargoes or oil terminals and similar and then detonate the ship. The last cited authors clarify that even if such scenarios as the called “momentum weapon” has been developed, for the port of Singapore, where the largest of Southeast Asia’s oil refineries is located, all of them belong to the realm of fiction. However, it is necessary to be prepared to respond to large terror attacks at port and offshore

installations and to mitigate eventual oil spills, protecting the marine environment. It is therefore no coincidence that concepts number 6 and 7 are represented in 18 and 13 occurrences respectively. The fact that there is a rather close correlation in these two numbers is attributed to the fact that oil pollution is widely considered nowadays as the main safety risk.

Regarding resilience's plans, also known as emergency management plans, Kenneth (2009, p. 231) refers to the National Response Framework from the U.S., and affirms that this document defines the principles, roles, and structures that frame how the United States will respond collectively in terms of a "national response doctrine" of coordination, specific authorities, and best practices. By citing to U.S. Department of Homeland Security (2008), the author points out (p. 231) that the National Response Framework establishes five key principles that reflect the overarching approach to incident and emergency response, which are: first, engaged partnerships; second, a tiered response; third, scalable, flexible, and adaptable operational capabilities; fourth, unity of effort through unified command; and fifth, readiness to act. He further explains that when developing port specific emergency operations and response policies and procedures; port security managers must take into consideration that each facility plan would be a component of the larger national plan and stresses that "planning for emergency must be managed collaboratively with those port users and government agencies that have interests and concerns in the stability of the port environment". He further added that it is imperative to have a coordinated response to port incidents (including hazardous materials incidents) and emergencies; additionally, to ensure that these events will be managed competently and in concert with national security priorities. As a result, the total number of occurrences for concept 7 is convincing, since potential safety risks must be addressed via the "right" resilience plans.

Conclusion

The wider domain of maritime security at ports and offshore installations encompasses directly or indirectly all the chosen subjects of table 2. However, even if they are considered as distinct concepts, still they cannot be considered as isolated, because in one way or another they are interdependent of each other. Furthermore, safety and security issues can be highly interdependent and also influencing one the other at the same time. In a similar direction, the same interdependency could be argued between oil spill and environmental protection; on the positive side, resilience's plans (also called emergency management plans) can provide the necessary mitigation toolbox.

Likewise, the concepts of terrorism and counterterrorism are (directly or indirectly) related to both the maritime safety and security domains, because of the severe consequences that are resulted from a successful attack as well as the need the necessary detailed preparation to avoid these "unpleasant events". In any case, these are various important concepts addressed via the ISPS Code, which establishes guidelines and recommendations for the development of the PFSP. In the long run, the ISPS is a toolbox that sets out processes and procedures to cope with the risks within the maritime security domain.

As it can be seen in the concept matrix, the category of "terrorism at sea or maritime terrorism" was the most studied according to findings of this literature review, with 41 different articles or books examining this topic; the topic of maritime security followed with 35 instances. The fact that "terrorism" and "maritime security" were most commonly presented in the research items could be attributed to the recent terror attack threats worldwide, a situation that has brought global interest on the issue of terrorism at sea and the respective maritime security framework for managing the risk of maritime terrorism and improve maritime and port security.

As already highlighted, the most important set of regulations addressing that subject is the Chapter XI-2 of the Safety of Life at Sea Convention 1974 (SOLAS Convention), encompassing the ISPS Code; this Code requires the establishment of PFSPs at port facilities with specific characteristics. It is also noteworthy that studies approaching the categories concerning the ISPS

code and PFSPs were the lowest represented, with only six instances. This can be interpreted into the notion that ISPS Code implementation issues and related practicalities are still lagging behind in terms of investigation and examination.

As it has been demonstrated in this literature review, research efforts focused on the ISPS Code and the development of a PFSP have an integrated perspective, where the concepts of terrorism and counterterrorism, as well as maritime security management and the issue of port security have a strong interaction and dominant status. Additionally, the safety issue is quite often addressed, with oil spill and environmental protection being included in the consequences of security incidents.

On the other hand, if the ISPS Code depends on maritime security at this comprehensive level then it needs to bear mind that other sub-topics except terrorism should also be there with the holistic approach: piracy, human trafficking (illegal migration), migrant smuggling, mixed migration, irregular migration, arms smuggling, drug trafficking, international organized crime, proliferation of weapons of mass destruction.

Closing with a positive note, after a total of 14 years after the approval and implementation of the ISPS Code, there have been identified quite a few different approaches to security risk assessment methodologies as it can be observed through the current literature review. On the other hand, more emphasis on the implementation issues of the ISPS Code is clearly needed to ensure that apart from theory, field results are resulting into an acceptable security risk level.

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Appendix I: Table References

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