

DEVELOPMENT OF AN INTEGRATIVE GOVERNANCE FRAMEWORK FOR
STAKEHOLDER MANAGEMENT IN MARINE SPACE ADMINISTRATION

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Specially dedicated to Mak

I've fulfilled my promise.

I really miss you.

-Al-Fatihah-

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ABSTRACT

In Malaysia, marine spaces are not managed by single public institution but involving several stakeholders. As a result, this will create complex, uncertain, conflicting, and overlapping scope of work. This study aims to develop a Marine Space Stakeholder Governance (MSSG) framework based on real Malaysian Marine Space Stakeholder Issues (MSSI). The study employs qualitative and quantitative approach using Grounded Theory method with focus group technique (GT-fg). This is followed by benchmarking, Fuzzy Delphi technique and finally, face-to-face interview for validation. GT-fg data were gathered through semi-structured interviews in groups incorporating the critical incidences technique. The study found out new issues in stakeholder management in Malaysia including power distance, bureaucracy, and organisation structure. Furthermore, the common issues such as identifying and engaging the stakeholders and data management are also derived from the GT-fg output. Then, a benchmarking study were conducted to the Indonesian Ministry of Marine Affairs and Fisheries (MMAF) to develop the Malaysian MSSG framework. This study involves 23 expert panels from various fields related to marine space governance to evaluate the framework using Fuzzy Delphi technique. The results show consensual agreement ($d = 77.17\%$) among the experts in terms of the selected nine elements of the framework. Each item reached an agreement with the value (A_{\max}) exceeding 0.60 defuzzification values. Only one item from the custodian element (The Prime Minister's Department should be the lead agency) where $A_{\max} = 0.32$ is not acceptable. Finally, face-to-face interviews were used to assess the acceptance of the framework from the marine space stakeholders. All interviewees agreed that the framework is vital to support the Malaysian MSSG strategic implementation and policy execution. These findings could become a foundation for the establishment of National Marine Planning Council. The results of this study could contribute to the development of MSSG framework, taking into account the new MSSI.

ABSTRAK

Di Malaysia, ruang marin tidak diuruskan oleh institusi tunggal tetapi melibatkan beberapa pihak berkepentingan. Perkara ini mewujudkan skop kerja yang kompleks, tidak menentu, bercanggah dan bertindih. Oleh itu, kajian ini bertujuan untuk membangunkan satu rangka kerja tadbir urus pihak berkepentingan ruang marin (MSSG) berdasarkan isu-isu sebenar pihak berkepentingan ruang marin Malaysia (MSSI). Kajian ini menggunakan pendekatan kualitatif dan kuantitatif dengan kaedah teori asas dan teknik kumpulan fokus (GT-fg). Ini diikuti dengan penandaarasan, teknik *Delphi* kabur dan akhir sekali, temubual bersemuka untuk pengesahan. Data GT-fg dikumpulkan melalui temubual separa berstruktur dalam kumpulan. Kajian ini menemukan isu-isu baharu dalam pengurusan pihak berkepentingan di Malaysia iaitu jurang kuasa, birokrasi, dan struktur organisasi. Tambahan pula, isu lazim seperti mengenal pasti, melibatkan dan mengurus data pihak berkepentingan juga diperolehi daripada GT-fg. Kemudian, kajian ini melaksanakan kajian penandaarasan terhadap Kementerian Kelautan dan Perikanan Indonesia (MMAF) untuk membangunkan rangka kerja MSSG di Malaysia. Kajian ini melibatkan 23 panel pakar daripada pelbagai bidang yang berkaitan dengan tadbir urus ruang marin untuk menilai rangka kerja menggunakan teknik *Delphi* kabur. Keputusan *Delphi* kabur menunjukkan persetujuan ($d = 77.17\%$) dalam kalangan pakar terhadap sembilan elemen yang dipilih daripada rangka kerja tersebut. Setiap item mencapai persetujuan dengan nilai (A_{\max}) melebihi 0.60 nilai penyahkaburan. Hanya satu item daripada elemen kustodian (Jabatan Perdana Menteri perlu menjadi agensi peneraju) iaitu $A_{\max} = 0.32$ tidak boleh diterima. Akhir sekali, pendekatan temubual bersemuka digunakan untuk menilai penerimaan rangka kerja daripada pihak berkepentingan ruang marin. Semua individu yang ditemubual bersetuju bahawa elemen rangka kerja ini penting untuk menyokong kepada pelaksanaan polisi dan pelaksanaan dasar strategik MSSG. Kajian ini boleh menjadi asas kepada penubuhan Majlis Perancangan Marin Negara. Hasil kajian ini akan menyumbang kepada pembangunan rangka kerja MSSG dengan mengambil kira MSSI yang baharu.

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LIST OF ABBREVIATIONS

ASEAN	-	Association of Southeast Asian Nations
BPN		National Land Agency
fg	-	focus group
GT-fg	-	Grounded Theory-focus group
GTM	-	Grounded Theory methodology
ICT	-	Information and Communications Technology
IT	-	Information Technology
IPB		Bogor Agriculture University
ITB		Bandung Institute of Technology
JPP	-	Department of Polytechnic Education
JUPEM	-	Department of Survey and Mapping Malaysia
KPM	-	Ministry of Education
MaCGDI	-	Malaysia Centre of Geospatial Data Infrastructure
MMAF		Ministry of Marine Affairs & Fisheries
MIMA	-	Maritime Institute of Malaysia
MOSTI	-	Ministry of Science, Technology and Innovation
MSSI	-	Marine Space Stakeholder Issues
MSSG	-	Marine Space Stakeholder Governance
MMSSG		Malaysia Marine space stakeholder governance
MSSM		Marine space stakeholder management
NAHRIM	-	National Hydraulic Research Institute of Malaysia
NRE	-	Ministry of Natural Resources and Environment
PTG	-	Department of Lands and Mines
UTM	-	Universiti Teknologi Malaysia

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This research explores the marine space governance practices in Malaysia. Currently, there is no accepted indicator of methodologies or established frameworks at the international level which facilitates the comparison of marine space stakeholder's management. This chapter has eleven sections, provides a foundation and overview of the research, a compressed introduction to the topic, and the motivation for the research. It states the problem that this thesis intends to solve, the aim, and scopes of the research. In this chapter also, the research approach is summarised and the thesis is outlined.

1.2 Research Background

This research aims to develop a marine space stakeholder's governance framework in Malaysia. The study utilised qualitative and quantitative methods to investigate marine space governance associated with stakeholders' issues.

In Malaysia, the governing of such activities involves various stakeholders and institutions. Governing is not only about managing, but also deals with decision making and distribution of knowledge which can influence the stakeholders' management and jurisdiction. Specifically, in marine space activities, the governing activities are shared by various stakeholders and overarching law concerning the use of the ocean (Teo and Fauzi, 2006).

Consequently, the marine space is not managed by a single public institution in Malaysia but involves several stakeholders (departments from the government and authorised individuals) who have interest in the marine space environment. This creates complex, uncertain and conflicting situations in determining a resolution in authority area of true governance. Therefore, it is important to establish a hierarchy of importance in authority area in order to meet the goals of economic, social, and political, as well as environmental issues (Nichols *et al.*, 2000). Good governance can mean different things to different people depending on one's perspective or goals (Sutherland and Nichols, 2006). Therefore, the foundation is the recognition of what is excluded and what is given priority in certain circumstances.

In this study, initial information on marine space management was obtained from three officials; each from different stakeholders. Unstructured interview were used during the initial stage. The officers also shared their concept of marine space governance as follows:

Marine space does not only refer to determining boundaries physically, as it might create some problems in administration. Therefore, it needs a clear definition to improve its organisation and marine space management. For example, in ensuring marine space safety in the sea area...there is no clear border in supervision and this creates conflicts between institutions such as the marine police and other enforcement agencies. This is due to the poor management of marine spaces by the authorities concerned to solve the conflicts and the development of marine

spaces between public authorities (Department of Lands and Mines -PTG, - JKPTG) and associated marine institutions...

(R1)

...when you talk about marine space, it is not as easy as the airspace... many parties are involved... airspace does not have many stakeholders, but in marine space, most of them want to claim their own ownership. Here, we will see the overlapping responsibilities and conflict of interests between the stakeholders, for example, the gazetted area for marine park. Before it is gazetted, everyone knows that an investigation has been done to determine whether that area is suitable for waterpark or not. But then, why there are still environmental issues such as oil spill? It is caused by ship movement along the waterway. ...What I mean here is, how can the ship pass through? Who gave them the permission? This shows that there is no coordination between the stakeholders. ...Perhaps, there is some agenda behind it... Yes. It is important to me because it is good to know that someone is trying to look into this stakeholder issues to find where we are lacking in our organisation...

(R2)

...so far, we will only be involved in marine space management issues. Although we make policies for them..., we still face challenges, in terms of many stakeholders to look up. Basically, the most difficult part in making policies is the overlapping responsibilities of the stakeholders. In this case, they will point fingers to each other because there are various stakeholders especially in the coastal areas. It will be good if you can come out with a stakeholders' management framework and how well it can be used...

(R3)

All issues that have been discussed above is illustrated by the distribution pattern of marine space stakeholder issues (MSSI) issue to understand the concept of marine space stakeholder governance (MSSG) as shown in Table 1.1 below.

Table 1.1: Distribution pattern of MSSSI understanding of the concept of MSSG issue

Number	Issues	R1	R2	R3
1	Overlapping		x	x
2	Conflict of interest	x	x	
3	Organization structure	x	x	x

Based on the facts disclosed by the participants, it can be concluded that the management of the marine environment in Malaysia has three major issues that need to be taken to ensure the universality of serious marine management. As can be seen in Table 1.1, the three issues that are of major conversation of the participants are overlapping, conflict of interest, and organisational structure. The most significant and the highest requirement issue is the organisational structure. All three participants stressed the need to study the organisational structure to ensure universal marine management. In addition, they argued that other issues can be overcome by the organisational structure.

Consequently, managing a marine space with its geographical space approximately 515,000 square kilometres of the maritime realm and 4,576 km in length of the coastline is a complicated task. Current development in marine and coastal areas has assumed a new dimension both nationally and internationally where oceans are seen as important assets with significant potential for economic growth and job creation (Heffernan, 2015). Therefore, as part of the South East Asian Region and a founding member of the Association of South East Asian Nations (ASEAN), the relationship with these nations should be of great importance as they are one of the stakeholders in Malaysia marine spaces (Figure 1.1).



Figure 1.1 Malaysia and its South East Asian Neighbours

The numbers of scholars who currently addressed the topic are increasing upon realizing the importance of marine space stakeholder governance framework for maritime nations. Tarmidi *et al.* (2016) and Tuda *et al.* (2014), for example, stressed that their research has considered the role of each stakeholder in marine administration to plan for a sustainable future framework for the best administration of marine space.

Keeping in mind that marine space governance is based on the recognition of the interests of all stakeholders and their inclusion, whenever possible, a look at Malaysia's perspective is necessary. Thus, a new framework using good governance concepts should be created. The framework should lead to the governance of current marine space, taking into account the stakeholder issues.

1.3 Problem Statement

The need to have a marine space stakeholder governance framework is vital for the maritime nations. Malaysia is one of the maritime nations and is approximately covered by 63, 665.30 metre squares of territorial waters (Zakaria and Adzhan, 2012); hence, the eminent need for governing the marine environment. In addition, maritime nations have witnessed a growing number of development in marine areas (van Leeuwen and van Tatenhove 2010; Pomeroy and Douvere 2008). Some activities that take place on marine spaces such as fisheries, transportation, tourism, safety, and natural resources exploration has incorporated stakeholders from different sectors.

When new uses and activities of marine environments emerge, stakeholders are regularly faced with societal conflict (Alexander *et al.*, 2016) and acceptance is important among the key players. Furthermore, the differences in regulations and preferences set by the stakeholders have caused conflicts on overlapping tasks and activities among the stakeholders. Hence, it is important to analyse the current rules, regulations, and relationships among the marine stakeholders in order to have directive policies and strategic plans. Heffernan (2015) stated that legislation is needed to identify the institutional and stakeholders directions to manage the marine spatial planning. As a consequence, stakeholder participation is considered as a fundamental to marine spatial planning. Therefore, the need for the marine space stakeholder governance is becoming a big agenda to this field.

Moreover, different human activities that can impact the marine ecosystems on the high seas might cause unclear or overlapping competencies. The mandate to regulate such human activities rests in the existing regional and global institutions (Kvalvik, 2012). This overlapping normally leads to confusion about the legal competency and authority of different stakeholders and institutions. Hence, there is a prevalence of work duplication, adoption of incoherent measures, complex implementation, and compliance processes. Conflicts between stakeholders and

degradation of the ecosystem are also frequent (Liu *et al.*, 2012). Such conflicts do however, tend to normally reduce the advancements of the Exclusive Economic Zones (EEZ) and the high seas, where economic activities are relatively limited and mostly confined to offshore fishing and mineral exploitation (Liu *et al.*, 2012).

The overlapping of the marine spatial governance activities such as data capturing, storage, process, and distribution often end up with a redundant phenomenon known as 'silo' (Ng'ang'a *et al.*, 2001; Binns *et al.*, 2003, Binns *et al.*, 2004). The 'silo' phenomenon refers to the same data redundancies collected by multiple institutions with the same means for stakeholder governance. This silo situation will consequently deflect the main idea of establishing strategic directive policies and a strategic plan by having analysis on the stakeholders' current direction. Furthermore, it is difficult to declare any general statements about the institutional change in relation to the sea due to the wide range of activities on the marine space. Institutional problems in the marine environment extend from global to remote issues with the involvement of stakeholders.

Another essential point that has been revealed from literature is that the overlapping and conflicting interest may pose threat to marine space (Tuda *et al.*, 2014; Pomeroy and Douvere, 2008; Hall *et al.*, 2013). It is also evident that land information system and marine space information systems where they exist are often operated separately (Medema *et al.*, 2014). This often resulted in conflicts within the coastal zone or land-sea interface. It is therefore imperative to manage, administer, and govern the coastal zone in a considerably sustainable and structured manner, in order to protect and nurture the environment.

Equally important is to consider the diversity uses of marine spaces. Several issues had been identified which may vary from country to country based on the governance strategies adopted. Therefore, being a maritime country with several maritime boundaries, Malaysia needs to identify its unique MSSSI.

As has been introduced in the background of the study, marine space stakeholder governance should be able to resolve the issues encompassing legal, technical, and institutional areas. In order to establish a stakeholder governance framework that will lead towards a sustainable environment, it is important to know the current institutional direction of the stakeholders.

Moreover, by studying the current direction among the marine space stakeholders, there is a need to investigate the real stakeholder issues that exist in the marine space environment. These processes are known as stakeholder's analysis. Since there are still gaps in integrating the stakeholder's analysis in marine space environment, it is expected that the research questions highlighted in this study will be answered.

By keeping in mind that Malaysia is a country with high water body, it is necessary to develop a governance framework for stakeholder's management towards marine space administrations. This framework will take into account the indicators towards the success of management in various aspects.

1.4 Knowledge Gap and Hypothesis

Malaysia is one of the maritime countries that should not neglected the MSSSI. There is a large volume of published studies on MSSSI (Chang *et al.*, 2014; Lane, 2008; Sutherland and Nichols, 2006; Sutherland *et al.*, 2004; Sutherland, 2011; Van Tatenhove , 2011). Nevertheless, the majority of these studies were conducted in western countries (Cook, 2014; Day *et al.*, 2008; Hirst *et al.*, 1999; McCrimmon and Fanning, 2010; Pascoe *et al.*, 2009) such as Canada, Australia, United Kingdom, and United States of America (Maguire *et al.*, 2012). Hence, most marine space stakeholders' issues were from the western economies.

Although studies on marine space stakeholders is lacking in the developing world (Tarmidi *et al.*, 2013), there are few studies on marine space governance (Freire-Gibb *et al.*, 2014; Cook, 2014; Day, *et al.*, 2008; Hirst *et al.*, 2010; Pascoe *et al.*, 2009; Nichols *et al.*, 2000) in Asia, East Europe, and Latin America. These were internationally considered to be comprehensive; hence, were able to identify the similarities and differences between the Eastern and Western issues in managing marine space stakeholder's management with regards to the nature of the marine environment. However, studies on these issues are minimal, if not none on small countries including Malaysia. The lack of study on the said issues can be considered as a gap in this field. Thus, to fill in the gap, this study aims to develop a framework in marine space stakeholder governance (MSSG) so the management of MSSG can be done systematically. This is the first attempt to focus on the MSSI, and is believed to be able to make a significant contribution to the knowledge within the MSSI field in general. It is also essential to examine the peculiar issues on marine space stakeholders concerning Malaysia.

Marine spaces are undergoing continual incremental changes in terms of social and economic purposes. From the foregoing problem, the hypothesis is: despite the fact that marine space environment appears to be the same all over the world, the activities and interactions of the stakeholders varies from country to country. It is therefore adequate to hypothetically stated that the marine space stakeholder issues are peculiar to different countries or regions of the world.

1.5 Research Questions

To address this peculiarity, the key research question to be answered in this study is:

Is MSSI essentially the same in every country across the globe?

Hence, the secondary questions are:

- i) What are the unique MSSSI in Malaysia?
- ii) What are the most important elements in managing marine space stakeholders?
- iii) How would the identified element enable the establishment of an objective and systematic selection framework?

1.6 Research Objectives

The aim of this research work is to develop a governance framework for Stakeholder Management towards sustainable marine space administration through systematic research methodology. The general aim of this research work is also to develop a marine space administration guideline for Malaysia in such a way that enhances coordination between stakeholder relationships while focusing on the stakeholder identification issues, effective stakeholder engagement issues, and managing stakeholder input.

To ensure a thorough and complete exploration of this research work, the following objectives are established:

- i. To explore the contributing elements of the Governance Stakeholder Management Issues.
- ii. To identify appropriate elements for Malaysia Governance Stakeholder Management based on input from Marine Space management experts.
- iii. To develop the Malaysia Governance Stakeholder Management framework and validate its reliability and applicability.

1.7 Scope of Research

The scopes of this study include:

- i. This research focuses on the marine space stakeholders in Malaysia. It identifies the expertise of marine space administrators. It aims at identifying the contributing elements of the marine space stakeholder governance. The respondents were chosen from the selected stakeholders in Peninsular Malaysia. In this research, the analysis of the data is to clear up any aspects that will generate doubts on the establishment of marine space stakeholder governance framework concept in the authority of several government and non-government agencies.
- ii. Grounded Theory with focus group approach (GT-fg) was used to identify the real Malaysian marine space stakeholder issues. Specifically, the study will explore the marine space stakeholder that is essential to find out the problem on marine space management.
- iii. Benchmarking of International Practices would be with experts in Indonesia. The justification of this choice was that there were relevant contact persons who were readily available in Indonesia. Besides, there are several reports on marine space governance studies in Indonesia, as published by a relevant journal (Putri *et al.*, 2009; Sazlan, 2000; Widodoc *et al.*, 2002). Reports showed that Indonesia has long practiced the marine space governance compared to Malaysia.
- iv. The method used was Fuzzy Delphi involving a panel of experts in the field of marine environment. The experts are from within and outside the country, who are involved in the academic field or directly involved in the field. Experts appointed should also have work experience of more than five years.

- v. This study used face-to-face interview to validate the output of the study. The process begins by gathering stakeholders, whose role are as implementers only. They consist of decision-makers.

1.8 Significance of Research

The significance of this research was triggered by the intense to encourage stakeholders to involve in marine space management. Stakeholder involvement is crucial when evaluating the development of the marine space as marine space is part of the national development program. In Malaysia, the development of marine space begins with the establishment of harbour, marina bay, and marine park, just to name a few. The awareness of managing the marine space in field of development has been raised not only at the organization level but it also includes national and international level as the development itself indirectly influences others stakeholder.

The major stakeholders that able to influence the Malaysian marine space are; Jabatan Ukur dan National Oceanography Directorate (NOD), Maritime Institute of Malaysia (MIMA), Malaysia Maritime Enforcement Agency (MMEA), Department of Fisheries (DoF) and The Royal Malaysia Navy, just to name a few. The stakeholders typically manage the marine space by theirs own. As a consequence, overlapping, consistency and conflict of interest may occur because to establish physical boundaries are difficult even though it applicable on paper. Thus, each stakeholder should be able to involve in every single of decision made by peers.

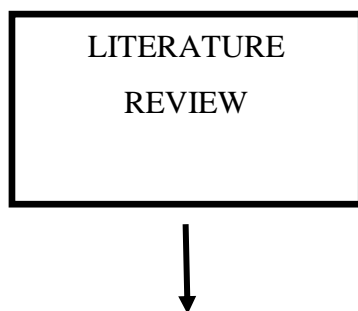
Since, the difficulty of managing the marine space take place internationally, therefore it is worth to work on determining the relationships between the stakeholders and marine space administration. This research may identify, support, enrich and generate awareness of having a proper and applicable of marine space management structure. Finally, it able to provide useful knowledge on factors that

might have impact and contribute to the successful adoption of marine space administration's development in marine space governance.

This research is the first step of an endeavour to embark a comprehensive study on marine space administration development for adoption in the marine space in Malaysia. This research will serve as a platform to solve the conflict of area in terms of marine governance among levels of stakeholder management in Malaysia, especially in marine environment. It is important to see the extent of adoption and organisational factors that influence the marine space administration practice in the marine environment.

1.9 General Methodology

The overall research methodology consists of literature review, face-to-face interview, Grounded Theory with focus group, Fuzzy Delphi questionnaire survey, benchmarking and face-to-face interview for validation which are designed specifically for achieving the stated research objectives. Both qualitative and quantitative measures for establishing the selection framework will be employed in this study. This study is conducted through the following methodology.



i. Literature review

An extensive literature review on the marine space stakeholders issues (MSSI) will be carried out. Literature review will involve gathering of secondary data from journals, conferences papers, books and research report.



ii. Qualitative (Interview face-to- face)

Gathering an information on MSGI, MSSSI and condition situations in managing marine space stakeholder in Malaysia by interviewing stakeholders.

iii. Grounded Theory with Focus group Technique (GT-fg)

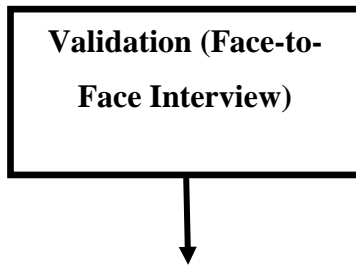
An list of existing problem on managing Malaysia marine space stakeholders management issues will be identified and Marine space governance framework emerged. This will be based a thorough literature study.

iv. Benchmark International Best Practice

The research marine space stakeholders issues identified was then benchmarked against the international practice of one maritime country in Indonesia. Visit the country will be made to gather data on how their manage the marine space. The aspects to be studied, compared and incorporated into the local outsourcing marine space management would cover the operation stage. The product of this exercise were the marine space organizational framework for managing the marine space stakeholders management outsourcing based on the international best practices.

v. Fuzzy Delphi Technique

The above research input will be used to conduct Fuzzy Delphi questionnaire. This technique will focus on experts opinions on selection element for marine space organizational framework.



vi. Validate The Marine Space organizational Framework

The final draft of the component of the marine space organizational framework identified from the analysis will then be validated by marine space stakeholders. The final result will be the outsourcing element for marine space organizational framework.

The specified objectives and the corresponding methodologies will be further discussed in greater details in Chapter 3.

1.10 Structure of Thesis

This study has been structured into five (5) chapters. The summary of the remaining chapters is outlined as follows:

Chapter 1 provides a brief review on the current state of marine space governance issues and briefly introduces stakeholder issues. The problem statements of the research were identified by constructing a clear objective and direction of the study.

An overview of the background of marine space governance with particular reference to the marine space stakeholder management (MSSM) would be reviewed. The MSSM involves three main issues which are identifying stakeholders, stakeholder engagement, and stakeholder data management. The understanding on the methodology used in governing and managing of stakeholders is important in designing the marine space stakeholder framework. Moreover, knowledge of the theoretical foundation is essential in designing the complete marine space stakeholder governance. Thus, this study attempts to elaborate the theoretical foundation of the methodology used and provide a model-based design of the

complete marine space stakeholder governance framework that has been developed. All these information are conveyed in **Chapter 2** and **Chapter 3**.

Documentation on the range of marine space stakeholders presented in Chapter 2 provides necessary understanding for discussion of systems analysis and design methodologies undertaken in **Chapter 4**. The focus of Chapter 3 is a review of the system methodologies in the documentation and analysis of marine space stakeholder issues. This review is undertaken to justify the systems analysis and design approach that structures much on the remainder of the thesis.

Finally, after developing several components of marine space stakeholder governance framework in previous chapters, **Chapter 5** generally demonstrates the complete development of the marine space stakeholder governance framework. This chapter discusses the analysis of the findings from GT-fg approach. The analysis was followed by benchmarking analysis and output from the activities. It continues with the experts view on how marine space stakeholder governance should be. Through face to face interview, the validation analysis on the finding is performed. A structural framework of marine space stakeholder governance in the context of Malaysian MSSSI is proposed in this chapter.

Chapter 6, Conclusion and Recommendations discuss and describe the findings of the research, its contributions, implications, recommendation for future research, and limitations. The schematic diagram of the thesis structure is shown in Figure 1.2.

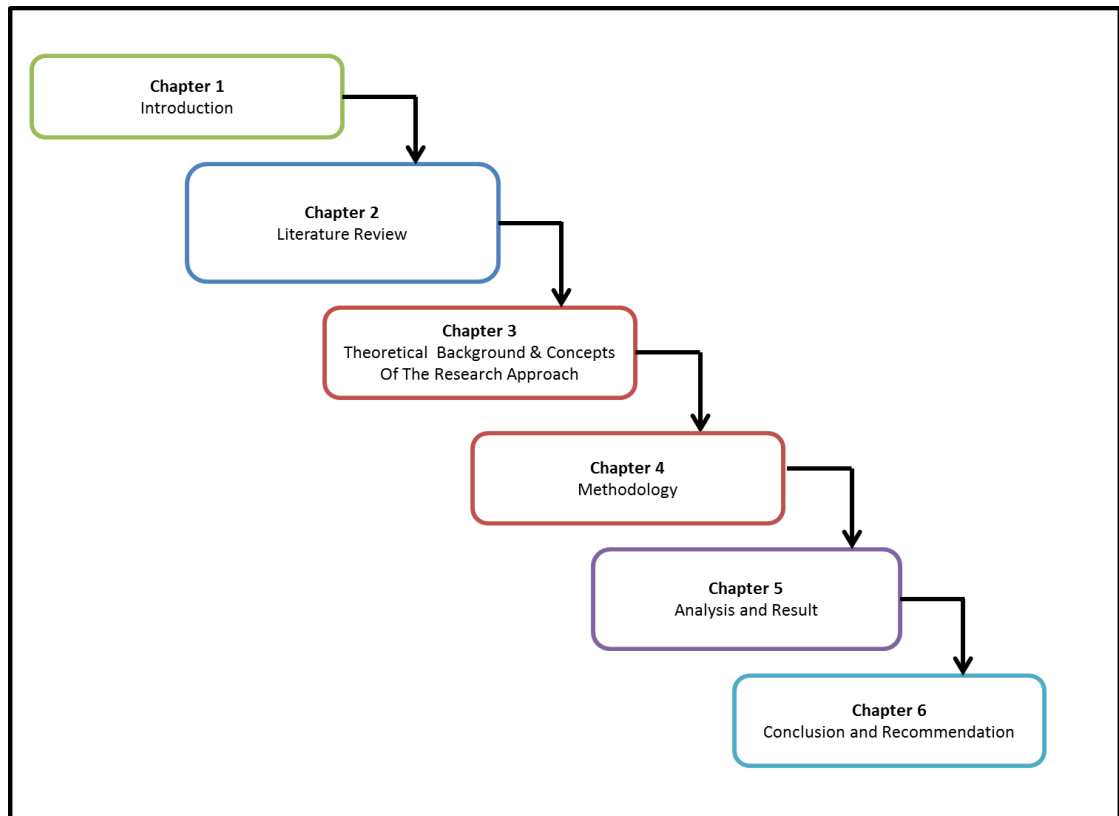


Figure 1.2 The schematic diagram of thesis structure

REFERENCES

- Abdullah A., Arof Z. M., Omar A.H., Abdullah N.M., (2015). Marine Cadastre Legal Framework For Malaysia. *The World Cadastre Summit, Congress & Exhibition (Istanbul, Turkey, 20 –25 April 2015)*.
- Abdullah, A., Arof, Z. M., & Tajam, J. (2013). Marine Cadastre Issue and Conceptual for Implementation in Malaysia. *Jurnal Intelek*, 8(1).
- Aboshady, A. M. I. (2012). *A framework for risk assessment in Egyptian Real Estate projects using Fuzzy approach* (Doctoral dissertation, Cairo University Giza).
- Ackermann, F. & Eden, C.(2011). Strategic Management of Stakeholders: Theory and Practice. *Long Range Planning*, 44, pp.179–196.
- Acosta, H., Wu, D., & Forrest, B. M. (2010). Fuzzy Experts on Recreational Vessels, A Risk Modelling Approach for Marine Invasions. *Ecological Modelling*,221(5), 850-863.
- Adler, M., & Ziglio, E. (1996). Gazing Into the Oracle: *The Delphi Method and Its Application to Social Policy and Public Health*. Jessica Kingsley Publishers.
- Ahmad, Z., Muhidin, M., Wasli, P., Salihin, M., & Mohd, H. (2014). Fuzzy Delphi Analysis for Future Environmental Education Using Interactive Animation, *2nd International Seminar Teaching Excellence And Innovation 25 February 2014. Universiti Malaya*.
- Alexander, K. A., Angel, D., Freeman, S., Israel, D., Johansen, J., Kletou, D., & Shorten, M. (2016). Improving sustainability of aquaculture in Europe: Stakeholder dialogues on Integrated Multi-trophic Aquaculture (IMTA). *Environmental Science & Policy*, 55, 96-106.
- Alyami, S. H., Rezgui, Y., & Kwan, A. (2013). Developing Sustainable Building Assessment Scheme for Saudi Arabia: Delphi Consultation approach. *Renewable and Sustainable Energy Reviews*, 27, 43-54.

- Arnaboldi, M., & Spiller, N. (2011). Actor-Network Theory and Stakeholder Collaboration: The Case of Cultural Districts. *Tourism Management*, 32(3), 641-654.
- Ary D., Jacobs L. C., Razavie A. and Sorensen C. K., (2010). *Introduction to Research in Education 8th Edition*. Wadsworth Publishing; 8 edition (February 12, 2009).
- AusIndustry, C. (1995). *Conference Outcomes "Business Networks, Business Growth"*, Sydney.
- Ayidiya, S. A., & McClendon, M. J. (1990). Response effects in mail surveys. *Public Opinion Quarterly*, 54(2), 229-247.
- Baggio, B. G. (2008). *Integrating Social Software into Blended-Learning Courses: A Delphi Study of Instructional-Design Processes*. ProQuest.
- Balmer, J. M., & Gray, E. R. (2003). Corporate brands: what are they? What of them?. *European journal of marketing*, 37(7/8), 972-997.
- Barbazza, E., & Tello, J. E. (2014). A Review of Health Governance: Definitions, Dimensions and Tools to Govern. *Health Policy*, 116(1), 1-11.
- Barbour, R. (2001). Checklists for improving rigour in qualitative research: A case of the tail wagging the dog? *British Medical Journal*, 322, 1115-1117.
- Batarekh, A., Preece, A. D., Bennett, A., & Grogono, P. (1991). Specifying an expert system. *Expert Systems with Applications*, 2(4), 285-303.
- Bavinck, M., & Gupta, J. (2014). Legal Pluralism in Aquatic Regimes: A Challenge for Governance. *Current Opinion in Environmental Sustainability*, 11, 78-85.
- Berg, B. (1995). *Qualitative research methods for the social sciences*. Needham Heights, MA: Allyn & Bacon.
- Beyea, S. C., & Nicoll, L. H. (2000). Learn More Using Focus Groups. *AORN Journal*, 71(4), 897-900.
- Binns, A., Rajabifard, A., Collier, P. A., & Williamson, I. P. 2004. Developing the concept of a marine cadastre: an Australian case study. *Paper presented at the Trans Tasman Surveyor, Australia*

- Binns, A., Rajabifard, A., Collier, P., & Williamson, I. 2003. Issues in Defining the Concept of a Marine Cadastre for Australia. In *FIG/UNB Seminar/Meeting On Marine Cadastre*. pp. 1–14.
- Blackstock, K. L., Waylen, K. A., Dunglison, J., & Marshall, K. M. (2012). Linking Process To Outcomes—Internal And External Criteria for A Stakeholder Involvement in River Basin Management Planning. *Ecological Economics*, 77, 113-122.
- Boateng, I. (2006). Institutional Frameworks in the Administration of Coast Institutionalal and Marine Space in Africa. In *Administering Marine Spaces: International Issues. Frederiksberg: The International Federation of Surveyors (publication No. 36)*.
- Bobonich, M., & Cooper, K. D. (2012). A Core Curriculum for Dermatology Nurse Practitioners: Using Delphi Technique. *Journal of the Dermatology Nurses' Association*, 4(2), 108.
- Bogan, C. E., & English, M. J. (1994). *Benchmarking for Best Practices: Winning Through Innovative Adaptation*. McGraw-Hill; 1 edition (August 1, 1994)
- Bogdan, R., & Biklen, S. (2007). *Qualitative Research for Education: An Introduction to Theory and Practice*. Pearson Publications.
- Borja, Á., Elliott, M., Carstensen, J., Heiskanen, A. S., & van de Bund, W. (2010). Marine management—towards an integrated implementation of the European Marine Strategy Framework and the Water Framework Directives. *Marine Pollution Bulletin*, 60(12), 2175-2186.
- Boyes, S. J., & Elliott, M. (2015). The excessive complexity of national marine governance systems—Has this decreased in England since the introduction of the Marine and Coastal Access Act 2009?. *Marine Policy*, 51, 57-65.
- Bradley, L., & Stewart, K. (2003). A Delphi Study of Internet Banking. *Marketing Intelligence & Planning*, 21(5), 272-281.
- Burrows, D., & Kendall, S. (1997). Focus Groups: What are They and How Can They be Used in Nursing and Health Care Research? *Social Sciences in Health*, 3, 244-253.

- Buyukozkan, G., & Ruan, D. (2008). Evaluation of Software Development Projects Using a Fuzzy Multi-Criteria Decision Approach. *Mathematics and Computers in Simulation*, 77(5), 464-475.
- Byrne, S., Wake, M., Blumberg, D., & Dibley, M. (2008). Identifying Priority Areas for Longitudinal Research in Childhood Obesity: Delphi Technique Survey. *International Journal of Pediatric Obesity*, 3(2), 120-122.
- Calestino, A. B. (2001). Malaysia. Does It Really Need Decentralization. *Sourcebook on decentralization in Asia. Decentralization and power shift: An imperative for good governance*.
- Camp, R. C. (1989). Benchmarking-The Search For Industry Best Practices That Lead To Superior Performance. *Quality Progress*, 22(5), 66-68.
- Camp, R. C. (2013). Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance. Milwaukee, Wis.: *Quality Press; Quality Resources*, 1989.
- Cárcamo, P. F., Garay-Flühmann, R., Squeo, F. A., & Gaymer, C. F. (2014). Using Stakeholders' Perspective of Ecosystem Services and Biodiversity Features to Plan a Marine Protected Area. *Environmental Science & Policy*, 40, 116-131.
- Chang E., Seautelle T., Wade F.M. & DeZubiria M. (2014). *Marine Spatial Planning in San Diego & Stakeholder Overview*. University of California, San Diego (UCSD) School of International Relations and Pacific Studies, 2014.
- Chang, P. L., Hsu, C. W., & Chang, P. C. (2011). Fuzzy Delphi Method for Evaluating Hydrogen Production Technologies. *International Journal of Hydrogen Energy*, 36(21), 14172-14179.
- Chang, P. T., Huang, L. C., & Lin, H. J. (2000). The Fuzzy Delphi Method via Fuzzy Statistics and Membership Function Fitting and an Application to the Human Resources. *Fuzzy Sets and Systems*, 112(3), 511-520.
- Charles, A. (2012). People, Oceans and Scale: Governance, Livelihoods and Climate Change Adaptation in Marine Social–Ecological Systems. *Current Opinion in Environmental Sustainability*, 4(3), 351-357.

- Charmaz, K. (2000). *Constructivist and objectivist Grounded Theory*, in: N.K. Denzin, Y.S. Lincoln (Eds.), *Handbook of Qualitative Research*, Sage Publications, 2000, pp. ix–xii.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis (Introducing Qualitative Methods Series)*. Sage Publications.
- Charmaz, K. (2007) *Constructionism and Grounded Theory*, in: J.A. Holstein, J.F. The SAGE Handbook of Grounded Theory: Paperback Edition
- Cheng, C. H., & Lin, Y. (2002). Evaluating the Best Main Battle Tank Using Fuzzy Decision Theory with Linguistic Criteria Evaluation. *European Journal of Operational Research*, 142(1), 174-186.
- Cheong, S. M. (2008). A new direction in coastal management. *Marine Policy*, 32(6), 1090-1093.
- Chow, L. K. (2005). *Incorporating Fuzzy Membership Functions and Gap Analysis Concept into Performance Evaluation of Engineering Consultants: Hong Kong study. HKU Theses Online (HKUTO)*.
- Chu, H., & Hwang, G. (2008). A Delphi-based approach to developing expert systems with the cooperation of multiple experts. *Expert Systems with Applications*, 34-40.
- Cicin-Sain, B., Knecht, R. W., Jang, D., & Fisk, G. W. (1998). *Integrated Coastal and Ocean Management: Concepts and Practices*. Island Press.
- Connelly, L. M. (2008). Pilot studies. *Medsurg Nursing*, 17(6), 411-413.
- Cook, C. (2014). Governing Jurisdictional Fragmentation: Tracing Patterns of Water Governance in Ontario, Canada. *Geoforum*, 56, 192-200.
- Coolican, H. (2014). *Research Methods and Statistics in Psychology*. Psychology Press.
- Corbin, J., & Strauss, A. (1990). Basics of Qualitative Research: Grounded Theory Procedures and Techniques. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, 41.
- Cornish, E. (1977). The Study of the Future World Future Society. *Washington, DC*, 220-221.
- Crane, A., & Ruebottom, T. (2011). Stakeholder Theory and Social Identity: Rethinking Stakeholder Identification. *Journal of business ethics*, 102(1), 77-87.

- Creswell, J. W., & Garrett, A. L. (2008). The "movement" of mixed methods research and the role of educators. *South African Journal of Education*, 28(3), 321-333.
- Cross, R., & Iqbal, A. (1995). The Rank Xerox Experience: benchmarking ten years on. In *Benchmarking—Theory and practice* (pp. 3-10). Springer US.
- da Silva, M. E., de Oliveira, A. P. G., & Gómez, C. R. P. (2013). Can Collaboration Between Firms and Stakeholders Stimulate Sustainable Consumption? Discussing Roles in the Brazilian Electricity Sector. *Journal of Cleaner Production*, 47, 236-244.
- Davies, A. L., & White, R. M. (2012). Collaboration in Natural Resource Governance: Reconciling Stakeholder Expectations in Deer Management in Scotland. *Journal of environmental management*, 112, 160-169.
- Dawson, M. D., & Brucker, P. S. (2001). The utility of the Delphi method in MFT research. *American Journal of Family Therapy*, 29(2), 125-140.
- Day, V., Paxinos, R., Emmett, J., Wright, A., & Goecker, M. (2008). The Marine Planning Framework for South Australia: A New Ecosystem-Based Zoning Policy for Marine Management. *Marine Policy*, 32(4), 535-543.
- Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Processes (pp. 83-107). Glenview, IL: Scott, Foresman.
- Denzin, N. K. (2002). The interpretive process. *The qualitative researcher's companion*, 349-366.
- Donaldson, T., & Preston, L. E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, And Implications. *Academy of Management Review*, 20(1), 65-91.
- Duru, O., Bulut, E., & Yoshida, S. (2012). A Fuzzy extended DELPHI method for adjustment of statistical time series prediction: An empirical study on dry bulk freight market case. *Expert Systems with Applications*, 39(1), 840-848.

- Eberman, L. E., & Cleary, M. A. (2011). Development of a Heat-Illness Screening Instrument Using the Delphi Panel Technique. *Journal of Athletic Training*, 46(2), 176-184.
- Enemark, S. (2010, April). From Cadastre to Land Governance: The role of land professionals and FIG. In *Annual World Bank Conference on Land Policy and Administration* (pp. 26-27).
- Evans, A. (1994). Benchmarking: Taking Your Organisation Towards Best Practice!. *Business Library*.
- Fanning, L., Mahon, R., McConney, P., Angulo, J., Burrows, F., Chakalall, B., ... & Oviedo, A. (2007). A Large Marine Ecosystem Governance Framework. *Marine Policy*, 31(4), 434-443.
- Fernández-Vidal, D., & Muiño, R. (2014). Fact or Fiction? Assessing Governance and co-management of Marine Reserves of Fishing Interest in Cedeira and Lira (NW Spain). *Marine Policy*, 47, 15-22.
- Fish, L. S., & Busby, D. M. (1996). The delphi method. *Research methods in family therapy*, 469-482.
- Fletcher, S., & Pike, K. (2007). Coastal Management in the Solent: The Stakeholder Perspective. *Marine Policy*, 31(5), 638-644.
- Frazier, L. C., & Sadera, W. (2011, March). Distance Education in Teacher Education: A National Study. In *Annual meeting of the Society for Information Technology & Teacher Education International Conference*. Nashville, TN.
- Freeman, R. E., & Evan, W. M. (1990). Corporate governance: A stakeholder interpretation. *Journal of behavioral economics*, 19(4), 337-359.
- Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge University Press.
- Freire-Gibb, L. C., Koss, R., Margonski, P., & Papadopoulou, N. (2014). Governance strengths and weaknesses to implement the marine strategy framework directive in European waters. *Marine Policy*, 44, 172-178.
- Frewer, L. J., Fischer, A. R. H., Wentholt, M. T. A., Marvin, H. J. P., Ooms, B. W., Coles, D., & Rowe, G. (2011). The Use of Delphi Methodology in Agrifood Policy Development: Some Lessons Learned. *Technological Forecasting and Social Change*, 78(9), 1514-1525.

- Garrod, B. (2012). Applying the Delphi Method in an Ecotourism Context: A Response to Deng *et al.*, 's 'Development Of A Point Evaluation System For Ecotourism Destinations: A Delphi Method'. *Journal of Ecotourism*, 11(3), 219-223.
- Geist, M. R. (2010). Using the Delphi Method to Engage Stakeholders: A Comparison of Two Studies. *Evaluation and program planning*, 33(2), 147-154.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory*. Chicago: Aldine. International Social Science Publisher.
- Glaser, B. G. (1978). *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*. Sociology Press.
- Glaser, B. G. (1992). *Emergence vs Forcing: Basics of Grounded Theory Analysis*. Sociology Press.
- Glaser, B. G. (1998). *Doing Grounded Theory: Issues and Discussions*. Sociology Press.
- Glaser, B. G. (2001). *The Grounded Theory Perspective: Conceptualization Contrasted with Description*. Sociology Press.
- Glaser, B. G. (2002). Conceptualization: On Theory and Theorizing Using Grounded Theory. *International Journal of Qualitative Methods*, 1(2), 23-38.
- Glaser, B. G. (2004). *Naturalist Inquiry and Grounded Theory*. Mill Valley, CA: Sociology.
- Glaser, B. G., & Strauss, A. L. (2009). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Transaction Publishers.
- Glaser, B. G., & Strauss, A. L. (2011). *Status passage*. Transaction Publishers.
- Golder, B., & Gawler, M. (2005). Cross-Cutting Tool: Stakeholder Analysis. *Resources for Implementing the WWF Standards*.
- Gopnik, M., Fieseler, C., Cantral, L., McClellan, K., Pendleton, L., & Crowder, L. (2012). Coming to the Table: Early Stakeholder Engagement in Marine Spatial Planning. *Marine Policy*, 36(5), 1139-1149.
- Griffin, J. J. (2008). Re-examining Corporate Community Investment: Allen's Australian Centre for Corporate Public Affairs (ACCPA) Corporate Community Involvement Report. *Journal of Public Affairs*, 8(3), 219-227.

- Grindle, M. S. (2004). Good enough governance: poverty reduction and reform in developing countries. *Governance*, 17(4), 525-548.
- Grindle, M. S. (2004). Good enough governance: poverty reduction and reform in developing countries. *Governance*, 17(4), 525-548.
- Gubrium (Eds.), *Handbook of Constructionist Research*, Guilford, New York, 2007, pp. 319–412.
- Gumus, A. T. (2009). Evaluation of Hazardous Waste Transportation Firms by Using a Two Step Fuzzy-AHP and TOPSIS Methodology. *Expert Systems with Applications*, 36(2), 4067-4074.
- Gupta, U. G. U. G. (1991). *Validating and verifying knowledge-based systems* (No. 04; QA76. 76. E95, G86).
- Hall, P. V., O'Brien, T., & Woudsma, C. (2013). Environmental innovation and the role of stakeholder collaboration in West Coast port gateways. *Research in Transportation Economics*, 42(1), 87-96.
- Hart, C. (1998). *Doing a literature review: Releasing the social science research imagination*. Sage Publications, Inc.
- Haslam, S. A., & McGarty, C. (2014). *Research Methods and Statistics in Psychology*. Sage Publications, Inc.
- Hassanali, K. (2015). Improving Ocean and Coastal Governance in Trinidad and Tobago—Moving Towards ICZM. *Ocean & Coastal Management*, 106, 1-9.
- Heffernan, P.B. (2015). *Enablers task force on marine spatial planning*. Report to the inter-departmental marine coordination group. (pp 33 Harnessing Our Ocean Wealth – An Integrated Marine Plan for Ireland)
- Helmer, O., & Helmer-Hirschberg, O. (1983). *Looking Forward: A Guide to Futures Research*. Sage Publications, Inc.
- Herrmann, K. H., Kirchberger, I., Stucki, G., & Cieza, A. (2011). The Comprehensive ICF Core Sets for Spinal Cord Injury from the Perspective of Occupational Therapists: A Worldwide Validation Study Using the Delphi Technique. *Spinal Cord*, 49(5), 600-613.
- Heylings, P., & Bravo, M. (2007). Evaluating Governance: A Process for Understanding How Co-Management is Functioning, and Why, In The Galapagos Marine Reserve. *Ocean & Coastal Management*, 50(3), 174-208.

- Hill R. & Kring, K.(2013) *European Territorial Co-Operation Maritime Cross-Border Programmes:The Maritime Dimension*. INTERACT, United Kingdom.
- Hill, K. Q., & Fowles, J. (1975). The Methodological Worth of the Delphi Forecasting Technique. *Technological Forecasting and Social Change*, 7(2), 179-192.
- Hillman, A. J., & Keim, G. D. (2001). Shareholder Value, Stakeholder Management, and Social Issues: What's the Bottom Line?. *Strategic Management Journal*, 22(2), 125-139.
- Hirst, B., Murphy, B. A., & Collier, P. A. (1999, September). An Overview of Australian Maritime Zone Boundary Definition. In *Proceedings of the International Conference on Technical Aspects of Maritime Boundary Delineation and Delimitation (including UNCLOS Article 76 issues)*. International Hydrographic Bureau, Monaco (pp. 191-199).
- Hoefnagel, E., de Vos, B., & Buisman, E. (2013). Marine informational governance, a conceptual framework. *Marine Policy*, 42, 150-156.
- Hofstede G., *Cultural constraints in management theories*, in: D.E. Hussey (Ed.), *International Review of Strategic Management*, John Wiley & Sons Ltd, Chichester, 1994, pp. 27–48.
- Hofstede G., G.J. Hofstede, M. Minkov (2010), *Culture and Organisations: Software of the mind: Intercultural Cooperation and its Importance for Survival*, Mc-Graw-Hill, New York, NY, 2010
- Homan, R. (1991). *The ethics of social research*. Addison-Wesley Longman Ltd.
- Houghton, K., & Rochette, J. (2014). Introduction: Advancing Governance of Areas Beyond National Jurisdiction. *Marine Policy*, (49), 81-84.
- Hsu, H. M., & Chen, C. T. (1996). Aggregation of Fuzzy Opinions Under Group Decision Making. *Fuzzy Sets and Systems*, 79(3), 279-285.
- Hsu, T. H. (1999). Public Transport System Project Evaluation Using the Analytic Hierarchy Process: A Fuzzy Delphi Approach. *Transportation Planning and Technology*, 22(4), 229-246.
- Hsu, Y. L., Lee, C. H., & Kreng, V. B. (2010). The Application of Fuzzy Delphi Method and Fuzzy AHP in Lubricant Regenerative Technology Selection. *Expert Systems with Applications*, 37(1), 419-425.

- Hudson, P. (2003). Focus Group Interviews: A Guide for Palliative Care Researchers and Clinicians. *International Journal of Palliative Nursing*, 9(5).
- Hughes, D. L., & DuMont, K. (2002). Using focus groups to facilitate culturally anchored research. In *Ecological research to promote social change* (pp. 257-289). Springer US.
- Idowu, S. O., Capaldi, N., & Zu, L. (2013). *Encyclopedia of corporate social responsibility*. Springer Berlin Heidelberg.
- Ishikawa, A., Amagasa, M., Shiga, T., Tomizawa, G., Tatsuta, R., & Mieno, H. (1993). The Max-Min Delphi Method and Fuzzy Delphi Method via Fuzzy Integration. *Fuzzy Sets and Systems*, 55(3), 241-253.
- Jamil R.M.M., Siraj S., Hussin Z., Noh N. M., (2014). *Pengenalan Asas Kaedah FUZZY DELPHI Dalam Penyelidikan Rekabentuk Pembangunan*. (M. I. Agency, Ed.)The Online Journal of Islamic Education (Cetakan Pe., Vol. 2). Monosh Technologies.
- Jentoft, S. (2007). Limits of Governability: Institutional Implications for Fisheries and Coastal Governance. *Marine Policy*, 31(4), 360-370.
- Jentoft, S., Pascual-Fernandez, J. J., De la Cruz Modino, R., Gonzalez-Ramallal, M., & Chuenpagdee, R. (2012). What Stakeholders Think About Marine Protected Areas: Case Studies from Spain. *Human Ecology*, 40(2), 185-197.
- Jones, E. V., Gray, T., Macintosh, D., & Stead, S. (2016). A Comparative Analysis of Three Marine Governance Systems for Implementing the Convention on Biological Diversity (CBD). *Marine Policy*, 66, 30-38.
- Jones, H., & Twiss, B. (1978). *Forecasting technology for planning decisions*. New York: Macmillan.
- Jones, T. E. (1980). *Options for the future: A comparative analysis of policy-oriented forecasts*. Praeger Publishers.
- Jung-Erceg, P., Pandza, K., Armbruster, H., & Dreher, C. (2007). Absorptive Capacity in European Manufacturing: A Delphi Study. *Industrial Management & Data Systems*, 107(1), 37-51.
- Kaufmann, A., & Gupta, M. M. (1988). *Fuzzy Mathematical Models in Engineering and Management Science*. Elsevier Science Inc.

- Kaur, C.R., 2014. Water, Water, Everywhere, and Oceans of Debris, Too. *Sea Views - Mima's Online*, (7), pp.1–4.
- Kay, R., & Alder, J. (1998). *Coastal Planning and Management*. CRC Press.
- Keeney, S., Hasson, F., & McKenna, H. (2011). The Delphi Technique. *The Delphi Technique in Nursing and Health Research*, 1-17.
- Kenny, M., & Fourie, R. (2015). Contrasting Classic, Straussian, and Constructivist Grounded Theory: Methodological and Philosophical Conflicts. *The Qualitative Report*, 20(8), 1270.
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *British Medical Journal*, 311, 299–302.
- Klir, G. J., & Folger, T. A. (1988). *Fuzzy Sets, Uncertainty, and Information*. Springer Publisher.
- Kvalvik, I. (2012). Managing institutional overlap in the protection of marine ecosystems on the high seas. The case of the North East Atlantic. *Ocean & coastal management*, 56, 35-43.
- Lambeth, J. M. (2008). *Research Foci for Career and Technical Education: Findings from a National Delphi Study*. Doctoral dissertation, Texas A&M University.
- Lane, M. B. (2008). Strategic coastal governance issues in Fiji: The challenges of integration. *Marine Policy*, 32(6), 856-866.
- Lawrence, N. W. (2006). *Social Research Methods: Qualitative and Quantitative Approaches*. Allyn and Bacon, 2000 Publisher.
- Le, X. Q., Vu, V. H., Hens, L., & Van Heur, B. (2014). Stakeholder Perceptions and Involvement in the Implementation of EMS in Ports in Vietnam and Cambodia. *Journal of Cleaner Production*, 64, 173-193.
- Leal, C. P., Quiñones, R. A., & Chávez, C. (2010). What Factors Affect the Decision Making Process When Setting TACs?: The Case of Chilean Fisheries. *Marine Policy*, 34(6), 1183-1195.
- Lebel, L. (2012). Governance and Coastal Boundaries in the Tropics. *Current Opinion in Environmental Sustainability*, 4(2), 243-251
- Lee S. C. & Lim S. T. (1996). Beach Nourishment as a Means of Coastal Erosion Control: The Malaysian Experience. *Seminar Geologi dan Sekitaran: Impak dan Pengauditan*. (6).

- Lee, C. F., & King, B. (2009). A Determination of Destination Competitiveness for Taiwan's Hot Springs Tourism Sector Using the Delphi Technique. *Journal of Vacation Marketing*, 15(3), 243-257.
- Lijzen, J. P., Otte, P., & van Dreumel, M. (2014). Towards Sustainable Management of Groundwater: Policy Developments In The Netherlands. *Science of the Total Environment*, 485, 804-809.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage Publications, Inc.
- Linstone, H. A., & Turoff, M. (2002). The Delphi Method. *Techniques and applications*, 53.
- Liu, W. H., Ballinger, R. C., Jaleel, A., Wu, C. C., & Lin, K. L. (2012). Comparative Analysis of Institutional and Legal Basis of Marine and Coastal Management in The East Asian Region. *Ocean & Coastal Management*, 62, 43-53.
- Liu, W. H., Wu, C. C., Jhan, H. T., & Ho, C. H. (2011). The Role of Local Government in Marine Spatial Planning and Management in Taiwan. *Marine Policy*, 35(2), 105-115.
- Lockwood, M., Davidson, J., Hockings, M., Haward, M., & Kriwoken, L. (2012). Marine Biodiversity Conservation Governance and Management: Regime Requirements for Global Environmental Change. *Ocean & Coastal Management*, 69, 160-172.
- Longbottom, D. (2000). Benchmarking in the UK: An Empirical Study of Practitioners and Academics. *Benchmarking: An International Journal*, 7(2), 98-117.
- Loy, T. C. J. (2010). *Dynasting Across Cultures: A Grounded Theory of Malaysian Chinese Family Firms*. Doctoral Dissertation, University Of Minnesota.
- Ludwig, B. (1997). Predicting the future: Have you considered using the Delphi methodology. *Journal of extension*, 35(5), 1-4.
- Luisetti, T., Turner, R. K., Bateman, I. J., Morse-Jones, S., Adams, C., & Fonseca, L. (2011). Coastal and Marine Ecosystem Services Valuation for Policy and Management: Managed Realignment Case Studies in England. *Ocean & Coastal Management*, 54(3), 212-224.

- Luyet, V., Schlaepfer, R., Parlange, M. B., & Buttler, A. (2012). A Framework to Implement Stakeholder Participation in Environmental Projects. *Journal of Environmental Management*, 111, 213-219.
- MacCarthy, B. L., & Atthirawong, W. (2003). Factors Affecting Location Decisions in International Operations-A Delphi Study. *International Journal of Operations & Production Management*, 23(7), 794-818.
- Maguire, B., Potts, J., & Fletcher, S. (2012). The Role of Stakeholders in the Marine Planning Process—Stakeholder Analysis Within the Solent, United Kingdom. *Marine Policy*, 36(1), 246-257.
- Mahon, R., Fanning, L., McConney, P., & Pollnac, R. (2010). Governance Characteristics of Large Marine Ecosystems. *Marine Policy*, 34(5), 919-927.
- Marín, A., & Berkes, F. (2010). Network Approach for Understanding Small-Scale Fisheries Governance: The Case of the Chilean Coastal Co-Management System. *Marine Policy*, 34(5), 851-858.
- Marshall, C., & Rossman, G. B. (1999). Defending the Value and Logic of Qualitative Research. *Designing Qualitative Research*, 191-203.
- Mather, A.S. & Chapman, K. (1995). *Environmental Resources*. England: Longman Group Ltd.
- Matos, S., & Silvestre, B. S. (2013). Managing Stakeholder Relations When Developing Sustainable Business Models: The Case of the Brazilian Energy Sector. *Journal of Cleaner Production*, 45, 61-73.
- McCall, M. K., & Dunn, C. E. (2012). Geo-information tools for participatory spatial planning: Fulfilling the criteria for ‘good’ governance?. *Geoforum*, 43(1), 81-94.
- McCrimmon, D., & Fanning, L. (2010). Using Memoranda Of Understanding To Facilitate Marine Management in Canada. *Marine Policy*, 34(6), 1335-1340. McGraw-Hill, New York, 2005.
- Medema, W., Wals, A., & Adamowski, J. (2014). Multi-loop social learning for sustainable land and water governance: towards a research agenda on the potential of virtual learning platforms. *NJAS-Wageningen Journal of Life Sciences*, 69, 23-38.
- Merriam, S. B. (1988). *Case Study Research in Education: A Qualitative Approach*. Jossey-Bass.

- Merton, R., Fisk, M., & Kendall, P. (1956). *The Focused Interview: A Report of the Bureau of Applied Social Research*. New York: Columbia University.
- Michaelis, L. (2003). The Role Of Business In Sustainable Consumption. *Journal of Cleaner Production*, 11(8), 915-921.
- Missonier, S., & Loufrani-Fedida, S. (2014). Stakeholder Analysis and Engagement in Projects: From Stakeholder Relational Perspective to Stakeholder Relational Ontology. *International Journal of Project Management*, 32 (7), 1108-1122.
- Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *Academy of management review*, 22 (4), 853-886.
- Mokhtar, M. B., & Aziz, S. A. B. A. G. (2003). Integrated Coastal Zone Management Using the Ecosystems Approach, Some Perspectives in Malaysia. *Ocean & Coastal Management*, 46 (5), 407-419.
- Mokhtar, M. B., & Aziz, S. A. B. A. G. (2003). Integrated Coastal Zone Management Using the Ecosystems Approach, Some Perspectives in Malaysia. *Ocean & Coastal Management*, 46(5), 407-419.
- Mont, O., Plepys, A., 2007. Sustainable Consumption Progress: Should We be Proud or Alarmed? *Journal Cleaner Production* 16, 531-537.
- Morgan, D. L. (1996). *Focus groups as qualitative research* (Vol. 16). Sage Publications, Inc.
- Morse, J., & Field, P. (1995). *Qualitative research methods for health professionals*. London: Sage Publications, Inc.
- Murray, T. J., Pipino, L. L., & van Gigch, J. P. (1985). A Pilot Study of Fuzzy Set Modification of Delphi. *Human Systems Management*, 5(1), 76-80.
- Murray, T. J., Pipino, L. L., & van Gigch, J. P. (1985). A Pilot Study of Fuzzy Set Modification of Delphi. *Human Systems Management*, 5(1), 76-80.
- Murry, J. W., & Hammons, J. O. (1995). Delphi: A versatile methodology for conducting qualitative research. *The Review of Higher Education*, 18(4), 423.

- Narongraksakhet, I. (2003). *Developing local-based curriculum for Islamic schools in Southern Thailand*. Doctoral dissertation, Tesis Doktor Falsafah.
- Neuman, W.L. (2010), *Social Research Methods: Qualitative and Quantitative Approaches*, 7th edn, Pearson Education, Ontario, Canada.
- Ngah A. M. and Khalid N., (2014). MIMA Bulletin. Maritime Institute of Malaysia (MIMA), pp.27–34.
- Ng'ang'a, S., Cockburn, S., Sutherland, M., & Nichols, S. (2001). *Toward a Multidimensional Marine Cadastre in Support of Good Ocean Governance*.
- Ng'ang'a, S., Sutherland, M., & Nichols, S. (2002, May). *Determining User Needs in a Marine Cadastre*. In *Published in the proceedings of the Canadian Hydrographic Conference*.
- Nichols, S., Sutherland, M., & Monahan, D. (2000). *Good Governance of Canada's Offshore and Coastal Zone: Towards an Understanding of the Marine Boundary Issues*. *Geomatica*, 54(4), 415-424.
- Nielsen, J. R. (2003). *An analytical framework for studying: compliance and legitimacy in fisheries management*. *Marine Policy*, 27(5), 425-432.
- Nordin, A. F. (2006). *Country Report on Marine Administration*. *JUPEM Pg*, 23-27.
- Nugus, P., Greenfield, D., Travaglia, J., & Braithwaite, J. (2012). *The politics of action research: "If you don't like the way things are going, get off the bus"*. *Social Science & Medicine*, 75(11), 1946-1953.
- Nurhidayah, L. (2010). *Toward Integrated Coastal Zone Management in Indonesia: Framework Assessment and Comparative Analysis*. *Indonesian Institute of Sciences (United Nations-Japan Foundation Fellowship program)*.
- Nutters, H. M., & da Silva, P. P. (2012). *Fishery Stakeholder Engagement and Marine Spatial Planning: Lessons from the Rhode Island Ocean SAMP and the Massachusetts Ocean Management Plan*. *Ocean & Coastal Management*, 67, 9-18.
- Ojeda-Martínez, C., Casalduero, F. G., Bayle-Sempere, J. T., Cebrian, C. B., Valle, C., Sanchez-Lizaso, J. L., ... & Salas, F. (2009). *A conceptual*

- framework for the integral management of marine protected areas. *Ocean & Coastal Management*, 52(2), 89-101.
- Olaniyi, A. O., Abdullah, A. M., Ramli, M. F., & Alias, M. S. (2012). Assessment of Drivers of Coastal Land Use Change in Malaysia. *Ocean & Coastal Management*, 67, 113-123.
- Olsen, Y., Agustí, S., Andersen, T., Duarte, C. M., Gasol, J. M., Gismervik, I., ... & Reinertsen, H. (2006). A comparative study of responses in plankton food web structure and function in contrasting European coastal waters exposed to experimental nutrient addition. *Limnology and oceanography*, 51(1part2), 488-503.
- Opdenakker, R. (2006, September). Advantages and Disadvantages of Four Interview Techniques in Qualitative Research. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 7, No. 4).
- Othman, M. R., Bruce, G. J., & Hamid, S. A. (2011). The Strength of Malaysian Maritime Cluster: The Development of Maritime Policy. *Ocean & Coastal Management*, 54(8), 557-568.
- Ounanian, K., Delaney, A., Raakjær, J., & Ramirez-Monsalve, P. (2012). On Unequal Footing: Stakeholder Perspectives on the Marine Strategy Framework Directive as A Mechanism of the Ecosystem-Based Approach to Marine Management. *Marine Policy*, 36(3), 658-666.
- Pallant, J. (2005). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS*. Crow's Nest, NSW: Allen & Unwin.
- Pascoe, S., Bustamante, R., Wilcox, C., & Gibbs, M. (2009). Spatial Fisheries Management: A Framework for Multi-Objective Qualitative Assessment. *Ocean & Coastal Management*, 52(2), 130-138.
- Patton, M. Q. (2002). Qualitative Interviewing. *Qualitative research and evaluation methods*, 3, 344-347.
- Phillips, R. A. (2004). Some key questions about stakeholder theory. *Ivey Business Journal*.
- Pomeroy, R., & Douvere, F. (2008). The Engagement of Stakeholders in the Marine Spatial Planning Process. *Marine Policy*, 32(5), 816-822.
- Pooyandeh, M., & Marceau, D. J. (2013). A Spatial Web/Agent-Based Model to Support Stakeholders' Negotiation Regarding Land Development. *Journal of Environmental Management*, 129, 309-323.

- Punch, K. (2000). *Developing Effective Research Proposals*. Sage Publications, Inc.
- Punch, Keith F. (2007). *Developing Effective Research Proposals*. Second Edition, SAGE Publications Ltd, London. p. 176
- Putri, N. T., & Yusof, S. R. M. (2009, December). Development Tool for Prioritizing and Measuring the Critical Success Factors of Quality Engineering Implementation (Case Study at Malaysian and Indonesian Automotive Industries). In *Proceeding of Asia Pacific Industrial Engineering and Management Systems Conference*.
- Rabiee, F. (2004). Focus-Group Interview and Data Analysis. *Proceedings of the Nutrition Society*, 63(04), 655-660.
- Radwan, M. M., Onchaga, R., & Morales, J. (2001). A structural approach to the management and optimization of geoinformation processes. *European Organization for Experimental Photogrammetric Research*.
- Ragin, C. C. (2009). Qualitative comparative analysis using Fuzzy sets (fsQCA). *Configurational Comparative Methods*, 51.
- Rajabifard, A., Collier, P., & Williamson, I. (2004). Marine SDI and Cadastre Activities in Asia-Pacific. *Coastal Zone Asia Pacific (CZAP)*.
- Rajabifard, A., Williamson, I., & Binns, A. (2006). Marine Administration Research Activities within Asia and the Pacific Region—Towards a Seamless Land-Sea Interface. *Administering Marine Spaces: International Issues*, 21.
- Ramli, J. (1998). A New Maritime Legal Regime for Malaysia Within the Context of Ocean Governance. In *MIMA National Conference on Ocean Governance in conjunction with The Year of the Ocean, Maritime Institute of Malaysia, Kuala Lumpur, Malaysia* (pp. 16-17).
- Ranängen, H., & Zobel, T. (2014). Exploring the Path from Management Systems to Stakeholder Management in the Swedish Mining Industry. *Journal of Cleaner Production*, 84, 128-141.
- Rhodes, R. A. (1997). *Understanding governance: Policy networks, governance, reflexivity and accountability*. Open University Press.
- Rigby, H., Schofield, S., Mann, K., & Benstead, T. (2012). Education Research: An Exploration of Case-Based Learning in Neuroscience Grand Rounds Using the Delphi Technique. *Neurology*, 79(3), e19-e26.

- Roberts, R. W., & Mahoney, L. (2004). Stakeholder Conceptions of the Corporation: Their Meaning and Influence in Accounting Research. *Business Ethics Quarterly*, 14(03), 399-431.
- Roberts, S. M., Wright, S., & O'Neill, P. (2007). Good Governance in the Pacific? Ambivalence and Possibility. *Geoforum*, 38(5), 967-984.
- Robertson, B., Benwell, G., & Hoogsteden, C. (1999). The Marine Resource: Administration Infrastructure Requirements. In *International Conference on Land Tenure and Cadastral Infrastructure for Sustainable Development, Melbourne* (pp. 242-241).
- Rohana Yusof, 2004, *Penyelidikan Sains Sosial*, PTS Publications and Distributors, Kuala Lumpur, Malaysia.
- Ryabchuk, D., Zhamoida, V., Spiridonov, M., Arseniev, B., & Gogoberidze, G. (2012, May). Concept of State Cadastre of the Marine Coastal Zone of The Russian Federation. In *Baltic International Symposium (BALTIC), 2012 IEEE/OES* (pp. 1-7). IEEE.
- Saharuddin, A. H. (2001). National Ocean Policy—New Opportunities for Malaysian Ocean Development. *Marine Policy*, 25(6), 427-436.
- Sandelowski, M. (1995). Focus on qualitative methods. Qualitative analysis: what it is and how to begin. *Research in Nursing and Health*, 18, 371-375.
- Sang, M. S. (2010). *Penyelidikan dalam Pendidikan, Perancangan dan Pelaksanaan Penyelidikan Tindakan*. Selangor: Penerbitan Multimedia Sdn. Bhd.
- Sazlan, I. (2000). *Laporan Suruhanjaya Bebas Kelautan Dunia*. Minda Kreatif
- Schmiedel, T., vom Brocke, J., & Recker, J. (2013). Which Cultural Values Matter to Business Process Management? Results from A Global Delphi Study. *Business Process Management Journal*, 19(2), 292-317.
- Seautelle T., Wade M.F., DeZubiria M. & Chang E. (2014) Marine Spatial Planning in San Diego & Stakeholder Overview. *Report*. UCSD School of International Relations and Pacific Studies.
- Sekaran, U. (2006). *Research methods for business: A skill building approach*. John Wiley & Sons.

- Siry, H. Y. (2006). Decentralized Coastal Zone Management in Malaysia and Indonesia: A Comparative Perspective. *Coastal Management*, 34(3), 267-285.
- Sloan, G. (1998). Focus Group Interviews: Defining Clinical Supervision. *Nursing Standard*, 12(42), 40-43.
- Soares, D., & Amaral, L. (2011). Information Systems Interoperability in Public Administration: Identifying the Major Acting Forces Through a Delphi Study. *Journal of Theoretical and Applied Electronic Commerce Research*, 6(1), 61-94.
- Spitzeck, H., & Hansen, E. G. (2010). Stakeholder Governance: How Stakeholders Influence Corporate Decision Making. *Corporate Governance: The International Journal of Business in Society*, 10(4), 378-391.
- Stake, R. E. (1995). *The Art of Case Study Research*. Sage Publications, Inc.
- Steyn, M. S., 2003. "Oil Politics In Ecuador And Nigeria: A Perspective From Environmental History On The Struggles Between Ethnic Minority Groups, Multinational Oil Companies And National Governments. PhD Thesis, University of The Free State, Bloemfontein, South Africa
- Story, V., Hurdley, L., Smith, G., & Saker, J. (2000). Methodological And Practical Implications of the Delphi Technique in Marketing Decision-Making: A Re-Assessment. *The Marketing Review*, 1(4), 487-504.
- Strain, L., Rajabifard, A., & Williamson, I. (2006). Marine Administration and Spatial Data Infrastructure. *Marine Policy*, 30(4), 431-441.
- Strauss A., and Corbin J, (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park: Sage Publications, Inc.
- Strickland, J., Moulton, S., Strickland, A., & White, J. (2010, October). The Delphi Technique as an Evaluation Tool: An Example of Developing an E-Learning Curriculum Using the ADDIE Model. In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (pp. 2203-2211).
- Sutherland, M. (2011). Improving the administration of marine and coastal spaces. *Coordinates*.

- Sutherland, M. D. (2005). *Marine Boundaries and Good Governance of Marine Spaces*. Doctoral dissertation, University of New Brunswick, Department of Geodesy & Geomatic Engineering.
- Sutherland, M., & Nichols, S. (2006). Issues in the Governance of Marine Spaces. *Administering Marine Spaces: International issues*, 6.
- Sutherland, M., Cockburn, S., & Nichols, S. (2004). Toward a 3D Marine Cadastre in Support of Good Ocean Governance: A Review of the Technical Framework Requirements. *Computers, Environment and Urban Systems*, 28(5), 443-470.
- Tan, L. C., & Looi, K. S. (2013, September). Towards a Malaysian multipurpose 3D Cadastre Based on the Land Administration Domain Model (LADM)—an empirical study. In *Proceedings of the 5 th FIG Land Administration Domain Model Workshop* (pp. 24-25).
- Tang, Z., & Tang, J. (2012). Stakeholder–firm power difference, stakeholders' CSR orientation, and SMEs' environmental performance in China. *Journal of Business Venturing*, 27(4), 436-455.
- Tarmidi, Z. M., Mohd Shariff, A. R., Mahmud, A. R., Zaiton Ibrahim, Z., & Hamzah, A. H. (2016). Spatial Data Sharing Implementation in Malaysia's Marine Organisations: a Case Study. *Journal of Spatial Science*, 61(1), 209-216.
- Tarmidi, Z., Shariff, A. R. M., Mahmud, A. R., & Ibrahim, Z. Z. (2013). The Important of Information Integration in Marine Management: A Review. *World Applied Sciences Journal*, 22(6), 870-876.
- Teo, C. H., & Fauzi, A. (2006). A National Geocentric Datum and the Administration of Marine Spaces in Malaysia 2. *International Federation of Surveyors (FIG) Publication No, 36*.
- Ter Mors, E., Weenig, M. W., Ellemers, N., & Daamen, D. D. (2010). Effective Communication About Complex Environmental Issues: Perceived Quality of Information About Carbon Dioxide Capture and Storage (CCS) Depends on Stakeholder Collaboration. *Journal of Environmental Psychology*, 30(4), 347-357.
- Thompson, R. (2011). Stakeholder analysis. Winning support for your projects. Accessed at Mind Tools website at http://www.mindtools.com/pages/article/newPPM_07.htm On Ogos, 2016.

- Todnem By, R. (2005). Organisational change management: A critical review. *Journal of change management*, 5(4), 369-380.
- Tohidi, H. (2011). Review the Benefits of Using Value Engineering in Information Technology Project Management. *Procedia Computer Science*, 3, 917-924.
- Tokuc A., 2013. *EABIS* (European Academy of Business in Society) *Encyclopedia of Corporate Social Responsibility*, Springer-Verlag Berlin Heidelberg.
- Tompkins, E. L., Few, R., & Brown, K. (2008). Scenario-Based Stakeholder Engagement: Incorporating Stakeholders Preferences into Coastal Planning for Climate Change. *Journal of Environmental Management*, 88(4), 1580-1592.
- Treece, C. (1982). DSM-III as a research tool. *The American journal of psychiatry*.
- Tuda, A. O., Stevens, T. F., & Rodwell, L. D. (2014). Resolving Coastal Conflicts using Marine Spatial Planning. *Journal of Environmental Management*, 133, 59-68.
- Vallega, A. (2001). Ocean Governance in Post-Modern Society—A Geographical Perspective. *Marine Policy*, 25(6), 399-414.
- van Leeuwen, J., & van Tatenhove, J. (2010). The Triangle of Marine Governance in the Environmental Governance of Dutch Offshore Platforms. *Marine Policy*, 34(3), 590-597.
- van Leeuwen, J., Raakjaer, J., van Hoof, L., van Tatenhove, J., Long, R., & Ounanian, K. (2014). Implementing the Marine Strategy Framework Directive: A Policy Perspective on Regulatory, Institutional and Stakeholder Impediments to Effective Implementation. *Marine Policy*, 50, 325-330.
- van Tatenhove, J. (2011). Integrated Marine Governance: Questions of Legitimacy. *MAST*, 10 (1), 87-113.
- Wadsworth, Y. (2011). *Do It Yourself Social Research*. Left Coast Press.
- Wakefield, R., & Watson, T. (2014). A Reappraisal of Delphi 2.0 for Public Relations Research. *Public Relations Review*, 40(3), 577-584.

- Waligo, V. M., Clarke, J., & Hawkins, R. (2013). Implementing sustainable tourism: A multi-stakeholder involvement management framework. *Tourism Management*, 36, 342-353.
- Waligo, V. M., Clarke, J., & Hawkins, R. (2014). The 'Leadership–Stakeholder Involvement Capacity' Nexus in Stakeholder Management. *Journal of Business Research*, 67(7), 1342-1352.
- Weiss, T. G. (2000). Governance, Good Governance and Global Governance: Conceptual and Actual Challenges. *Third World Quarterly*, 21(5), 795-814.
- Weiss, T. G., & Thakur, R. (2010). *Global Governance and the UN: An Unfinished Journey*. Indiana University Press.
- Wever, L., Glaser, M., Gorris, P., & Ferrol-Schulte, D. (2012). Decentralization and Participation in Integrated Coastal Management: Policy Lessons from Brazil and Indonesia. *Ocean & Coastal Management*, 66, 63-72.
- Widodo, M. S., Leach, J., & Williamson, I. (2002, November). Marine Cadastre and Spatial Data Infrastructures in Marine Environment. In *Proceeding of Joint AURISA and Institution of Surveyors Conference, Adelaide, Nov* (pp. 25-30).
- Williamson, I., & Ting, L. (2001). Land Administration and Cadastral Trends—A Framework for Re-Engineering. *Computers, Environment and Urban Systems*, 25(4), 339-366.
- Williamson, I., Rajabifard, A., & Strain, L. (2005). Marine Cadastres—Challenges And Opportunities for Land Surveyors. *Melbourne, Australia: Centre for Spatial Data Infrastructure and Land Administration, Department of Geomatics, University of Melbourne*.
- Yagi, N., Takagi, A. P., Takada, Y., & Kurokura, H. (2010). Marine protected areas in Japan: institutional background and management framework. *Marine Policy*, 34(6), 1300-1306.
- Yeung, F. Y. (2007). *Developing a Partnering Performance Index (PPI) for Construction Projects: A Fuzzy Set Theory Approach*. Doctoral dissertation, The Hong Kong Polytechnic University.
- Yin, R. K. (2009). *Case Study Research: Design and Methods, 4th*. Thousand Oaks.

- Yin, R. K. (2013). *Case Study Research: Design and Methods*. Sage publications.
- Zadeh, L. A. (1965). *Fuzzy Sets*. *Information and control*, 8(3), 338-353.
- Zakaria A. & Adzhan A. (2012). *Marin Kadaster Di Malaysia: Persidangan Pengarah-Pengarah Ukur Tahun 2012. Awana Ggenting Highlands Golf Ccountry Rresort Pahang*.
- Zamali, B. M., & Lee, S. C. (1991). Analysis of Coastal Protection Work Along the Southwestern Coast of Johore, Malaysia. *LM Chou, T.-E. Chua, HW Khoo, PE Lim, JN Paw, GT Silvestre, MJ*, 28-31.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business Research Methods*. [Mason, Ohio]: South Western Cengage Learning.
- Zsolnai, L. (2006). Extended Stakeholder Theory. *Society and Business Review*, 1(1), 37-44.