# Level of Compliance of Traditional Fishing Vessels to Fisheries Department Regulations in Pangkor Island

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*Abstract: This study aims to determine the level of compliance of fishing vessels operations to Malaysian Fisheries Department rules and regulations as well as to identify the reasons of non-compliance among fishermen in Pangkor Island, Perak. The data was collected through the distribution of questionnaire and analysed using descriptive statistical tools. The level of compliance of fishing vessel operations was determined by a five point Likert scale, whilst qualitative statements were grouped into several topics using qualitative content analysis. The reasons for the fishermen's non-compliance were also identified by using closed-ended and open-ended questions. The outcome of this study can be categorised into several levels of compliance. As for the reasons for non-compliance, the most frequent reason chosen by respondents was lack of trust towards the authorities.*

*Keywords: Fisheries regulations, fishing vessel, level of compliance, Pangkor, traditional boat.*

## I. INTRODUCTION

Most fishermen use fishing vessel to catch a variety of fishery resources for human to consume, producing animal food, bait and others. Large fishing vessels are capable to trawl or operate hundreds of miles from the shore. A large vessel normally requires several crew members with each of them having specialized skills to make the vessel function properly. Large fishing vessel normally uses advanced technology to help the crew locates suitable fishing grounds. Most of the vessels are equipped with accommodations for a long stay at sea. On the other hand, there are also fishermen that work on small boats and operate in shallow waters, which is normally very close to the coast.

Unlike the larger vessels, the small boats only require one or two men who have to do all types of activities in a fishing operation. In spite of the differences, navigation and communication needs are important element to ensure the safety of both categories of fishing vessels.

Unlike the bigger vessels that are normally well equipped, fishermen from small boats use hand-operated equipment such as nets, tongs, rakes, trolling lines and other simple equipment to catch fish. Pangkor Island or Pulau Pangkor is a small island located in the state of Perak along the Straits of Melaka. The population of this island is approximately 25,000 [1]. The main economic activities on the island are fishing, fish processing and tourism. The land area of this island is about 18 square km. Travellers can get to the island by taking ferry rides from Lumut town or Marina Island on the main land. There are eight fishermen villages in Pangkor Island. However, six villages are dominated by fishermen operating bigger fishing vessels in the form of trawlers and purse seiners. Only two villages are suitable for this research namely Teluk Gedung and Teluk Dalam as most of the fishermen in these two villages operate traditional boats. For the purpose of this research, traditional fishing boats can be defined as those small fishing boats or "sampan" that are normally operated by only one or two crew members.

Lately, they have been several problems involving small traditional fishermen in Malaysia that may jeopardise their own safety whilst operating at sea. The problem encountered is in term of non-compliance of their fishing vessel operations to the regulations produced by the fisheries authority [1]. According to an earlier finding, the regulations may not be fully complied by the fishermen as they may not be fully enforced, the information may not reach the fishermen or there could be other reasons for their non-compliance [2]. Therefore, this study aims to determine the level of compliance of fishing vessel operations towards Fisheries Department Regulations among fishermen operating small traditional boats in Pangkor Island and to identify the reasons behind the non-compliance.

## II. NON COMPLIANCE TO FISHERIES REGULATIONS

Non-compliance or violation of fisheries regulations is one of the main problems in marine ecosystems [2].

Most of the issues arisen behind the non-compliance were due to problems of enforcement and management by the local authorities [3].

Among the reasons of the non-compliance were elements of abuse of power by the local government agencies, weak enforcement of the Fisheries Act and its associated regulations, lack of trust towards authorities among the fishermen and political interference by politicians in power [2]. Additionally, some fishermen have claimed to have lost their faith towards the authorities because of cases of power abuse and complaints by them have not been properly addressed.

The implementation of the rules and regulations were often met with conflicts. Most of the rules and regulations have been revised to meet the requirements of the current situation. However, there were problems in implementing the rules and regulations to small boats due to various reasons [4]. Among others, one of the reasons for the non-compliance was lack of communication between the local authorities and the fishermen. Fishermen often claimed to face confusion due to different communication between state and federal agencies that caused the fishermen to be misinformed. Another issue caused by communication was the authorities were unable to reach fishing community because they did not possess contact information of the fishermen [5]. The communication problem may cause the information not reaching the local fishermen that resulted in the fishermen not complying with the rules and regulations.

Fishermen also did not comply with the rules and regulations because it involved a high cost for them to comply. Issues of additional cost have often been faced by the fishermen every time government introduced new regulations. Among others, recently the Government had prohibited the use of trawlers in B Zone, which is between 5 to 15 nautical miles from the coastline for the states of Kedah, Perak and Selangor. The prohibition affected the local fishermen as they have to change to purse seiner system if they insisted to operate in the same fishing area resulting in the incurrence of high cost to modify the equipment and boats [6].

## III. REGULATIONS ON FISHING SAFETY AND TRAINING

The Fisheries Act 1985 is a Malaysian law relating to fisheries including conservation, management and development of maritime and estuarine fishing in Malaysian fisheries waters. This act is the main legislation that governs fishery activities in Malaysia. Fisheries Act 1985 has 11 parts and 62 sections [7]. The act is also supported by regulations and instructions produced by the Fisheries Department from time to time. The summary of the regulations examined in this study is as per Table I.

**Table. 1 Summary of Fisheries Rules & Regulations Affecting Traditional Fishermen**

| No. | Rules/ Regulations/ Acts | Function |
|---|---|---|
| 1. | Fisheries Act 1985 Part IV, Part X and Part XI | Licensing of fishermen; and registration of licenses and permits. |
| 2. | Fisheries Regulations (Marine) (Licensing of Fishing Vessel) 1985 | Licensing regulations that are required to be followed by the local fishermen. |
| 3. | The Conditions of the License Must be Stamped in the License Book for Vessels and Fishing Gear (Licensing Circular No. 6/2016) | Fishing regulation that lay down the conditions of the license. |
| 4. | The Implementation of the terms for Local Fishing Vessels that should not use Fishing Gear other than those Licensed (Licensing Circular No. 5/2017) | Fishing regulation that only allows fishermen to use licensed fishing gear. |
| 5. | Licensing Guidelines No. 1/2015 | Fishing regulation, which states that fishermen must comply with the limits of fuel according to the size of vessel. |
| 6. | Amendment to the Regulation in the License Book relating to Vessel Detector (MTU/VTU/ALC) to be installed on board a Local Fishing Vessel (Licensing Circular No. 4, 2018) | Fishing regulation that stipulates that fishermen shall only use registered vessel detector. |

## IV. DATA COLLECTION

For this research, the questionnaire developed consists of three sections. Closed-ended questions have been used for Section A. This section is meant to gather the basic information about the respondents such as age, gender, area of fishing, type of vessel (focusing more on traditional boat as traditional boat is used by the majority of the fishermen in selected villages) and other relevant information. This section is also intended to ensure that the respondents selected are suitable for this research. Subsequently, Section B is used for the purpose of identifying the level of compliance of the fishing vessel operations. Finally, Section C is meant to identify the reasons of the non-compliance to the rules and regulations. In Section B, a five-point Likert Scale has been used to differentiate between the levels of compliance. The five-point Likert Scale was used because it is a common scale used by many researchers and can be easily understood by the target respondents. As for Section C, closed-ended and open-ended questions were used.

In the closed-ended questions, the respondents have chosen the most appropriate reasons from those listed and for the open-ended questions, respondents have been encouraged to suggest other reasons that were not listed earlier.

### Department of Fisheries (DoF)

Based on the information obtained from the Department of Fisheries website the laws and regulations that may affect the traditional fishermen are as follows:
(1) Fisheries Regulations (Marine) (Licensing of Fishing Vessel) 1985.
(2) The Implementation of License Terms for Local Fishing Vessels that prohibit the use of Fishing Gear other than those Licensed (Licensing Circular No. 5/2017).

(3) Licensing Guidelines No. 1/2015.
(4) Amendment of Regulation in the Book of License Relating to Vessel Detector (MTU/VTU/ALC) that is installed on board a Local Fishing Vessel (Licensing Circular No. 4 of the year 2018).

### Pangkor Island Fishemen Association (PIFA)

PIFA has the data regarding the number of fishermen registered under the association and the list of fisherman villages. The officer on duty has been contacted to request the related data up until year 2018. From the data given by PIFA, the researchers were able to identify the exact location of the target respondents.

## V. RESULT

In this study, there were five different responses from the Likert Scale starting from Strongly Not Agree, Not Agree, Neutral, Agree and Strongly Agree. The mean of these responses was calculated by using the Statistical Package for the Social Sciences (SPSS) software Version 25.0. There were 18 statements in the questionnaire and the mean of each of the statement was calculated. In order to determine the level of compliance, the statements in the questionnaire were arranged into several regulatory groups namely Safety, Licensing, Fishing Gear, Vessel Detector, Oil Tank Capacity and the other two statements were not given any grouping and considered as Others (Statement 1 and Statement 17) because they were not similar to other statements. The outcome of each group is as per Table II:

**Table. 2 Data Set of Section B for Mean, Average Mean and Standard Deviation**

| Rules & Regulations | Variable Statement | Mean Value | Average Mean Value | Standard Deviation |
|---|---|---|---|---|
| Others | 1. I comply with all the rules and regulations as specified in Paragraph 1 and 2. | 3.50 | 3.50 | 1.214 |
| Others | 17. The punishment to the offences committed is reasonable. | 3.38 | 3.38 | 1.379 |
| Safety | 6. My vessel is equipped with life safety equipment and firefighting equipment. | 3.53 | 3.39 | 0.982 |
| Safety | 18. By not following the rules and regulations listed at paragraphs 1 and 2, fishermen's safety will be at stake. | 3.25 | | 1.536 |
| Licensing | 3. The application process and license registration are difficult and troublesome. | 4.22 | 4.20 | 1.29 |
| Licensing | 4. I present the vessel for inspection by Fisheries Department before applying for license. | 3.93 | | 1.177 |
| Licensing | 5. The license renewal period needs to be extended. | 4.42 | | 1.197 |
| Licensing | 7. I display my license number plate all the time. | 4.23 | | 1.212 |
| Fishing Gear | 8. I use foreign and unregistered fishing gear. | 2.27 | 2.90 | 1.582 |
| Fishing Gear | 9. I use registered foreign fishing gear. | 3.32 | | 1.631 |
| Fishing Gear | 10. The use of foreign fishing gear is more economical. | 2.57 | | 1.407 |
| Fishing Gear | 11. The use of foreign fishing gear is more productive in fishing revenues | 3.43 | | 1.466 |
| Vessel Detector | 12. I use foreign and unregistered vessel detector. (E.g.: MTU/VLC/ ALC from Vietnam) | 2.12 | 2.17 | 1.379 |
| Vessel Detector | 13. I use registered foreign vessel detector. | 2.22 | | 1.563 |
| Vessel Detector | 14. The used of foreign vessel detector is more economical. | 2.12 | | 1.403 |
| Vessel Detector | 15. The used of foreign vessel detector is easy to use. | 2.20 | | 1.424 |
| Oil Tank Capacity | 2. I comply with the oil tank capacity according to the size of vessel. | 4.07 | 3.47 | 1.148 |
| Oil Tank Capacity | 16. The policy of oil tank capacity according to the size of vessel is complicating the fishermen. | 2.87 | | 1.512 |

Based on Table II, the mean for Statement 1, "I comply with all the rules and regulations as specified in Paragraph 1 and 2" is 3.50.

Based on the mean, it can be concluded that the respondents agreed that the fishermen complied with all the rules and regulations as specified. Additionally, the respondents who did not agree made the decision because they were not satisfied with their license being frozen by the authorities. On the other hand, the mean for the Statement 17, "The punishment to the offences committed is reasonable" was 3.38. Based on the mean, it can be concluded that the respondents agreed that the punishment to the offences committed was reasonable. The respondents that did not agree made such decision because they were not satisfied with the authority that was perceived to be unfair towards fishermen operating traditional boats.

As for the Safety element, the average mean was 3.39, as the indicator that the respondents agreed to the statements. Most of the fishermen did not have fire fighting equipment. Most fishermen only have life jackets in their boats. However, the respondents agreed that by not following the rules and regulations, their own safety will be at stake. For the licensing element, the average mean was 4.20. The mean was considered as strongly agree. The application process was troublesome for some fishermen. Some of the fishermen still did not get any license after several years of application. The respondents also agreed that the license renewal period needed to be extended as the current period of 3 years is considered as too short. This was because the fishermen needed to go to the local Department of Fisheries in Seri Manjung, which is the administrative centre of the Manjung District to renew their licenses. Some of the fishermen faced difficulties to go out from Pangkor Island.

For the element of Fishing Gear, the average mean was 2.90. The mean was considered as neutral, which is neither agree nor disagree. Most of the respondents did not use foreign fishing gear. Only a few fishermen used fishing gears such as nets from Thailand and Japan. This was because the foreign fishing nets were claimed to be more durable than the local one.

Based on Table II, the average mean for the Vessel Detector element was 2.17. The mean was considered as neutral. Most of the fishermen did not use any vessel detector as the fishermen only operated traditional boats, which did not require any vessel detector. Lastly, the average mean for the element of Oil Tank Capacity was 3.47. The mean was considered as agree. Most of the fishermen complied with the oil tank capacity set by the authorities. However, there were also a few of them that used their own money to buy the unsubsidised fuel as they did not get any subsidy for the oil. This happened because the fishermen failed to get their license renewed.

## VI. REASONS OF NON COMPLIANCE

In Part C of the questionnaire, reasons of non-compliance were listed. The respondents were requested to choose the reasons that they considered as suitable from those listed in the questionnaire. In order to ensure that the respondents are free to express their opinion, more than one reasons can be chosen from the list. Additionally, they were also encouraged to suggest other reasons for the non-compliance. The reasons of non-compliance especially those involving the open-ended

answers from respondents were analysed using the qualitative content analysis in order to achieve the second research objective. Fig. 1 shows the reasons of non-compliance toward the regulations involved.
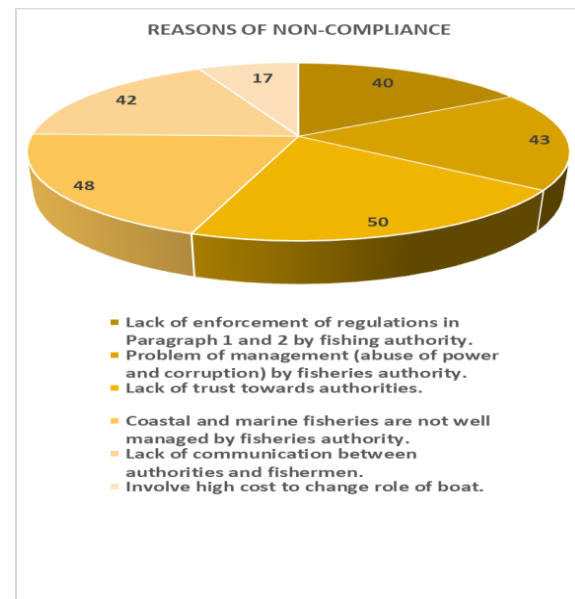


**Fig. 1 Reasons of Non Compliance**

As shown in Fig. 1, it can be summarised that the main reason of non-compliance was lack of trust towards authorities with the frequency of 50 respondents. This is followed by coastal and marine fisheries are not well managed by the authority (48 respondents); problem of management by fisheries authority (43); lack of enforcement (42); and lack of communication between authorities and fishermen (40 respondents). On the other hand, high cost to change the role of boat had the least support from respondents with a frequency of only 17 respondents and should not be considered as one of main reasons for the non-compliance. Other feedback received includes the authorities need to extend the license renewal period from three to five years as the fishermen have to go out of Pangkor Island to renew the license. Going out of Pangkor Island was considered as troublesome to some of the fishermen because it will incur travelling cost and they will not be able to go out to sea on that particular day. Furthermore, the authorities should increase the oil tank capacity as the current capacity is not enough. Lastly, the authorities should conduct regular meetings to enable the fishermen to have a proper avenue to discuss and channel their complaints and voice their opinions that could enable them to improve their working environment.

## VII. CONCLUSION

In retrospect, the level of compliance of fishing vessel operations was determined by a five-point Likert scale, whilst qualitative statements were grouped into several topics using qualitative content analysis. The reasons for the fishermen's non-compliance were also identified by using closed-ended and open-ended questions. The outcome of this study can be categorised into several levels of compliance.

The level of compliance for oil tank capacity was generally complied; whilst the level of compliance for vessel detector was categorised as neutral. Similarly, the level of compliance for fishing gear was neutral. On the contrary, the level of compliance for licensing was strongly complied and the level of compliance for safety was complied. As for the reasons of non-compliance, the most frequent reason chosen by respondents was lack of trust towards the authorities. The other four reasons given are also considered as significant since they received the support of 40 or more respondents from a total of 60.

As for the recommendations for future research, suitable rules and regulations specifically for traditional boats need to be established. This is because the listed rules and regulations were too general such as the use of vessel detector. Most of the traditional boats did not use any vessel detector as the vessel detector was designed for larger fishing vessels. Next, the research should be conducted in area outside of Perak for more accurate data that can be generalised and implemented in Malaysia.

## ACKNOWLEDGMENT

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