

Possible Challenges by Fisheries Institute in Implementation of STCW-F

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ABSTRACT

The STCW-F stand for Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel 1995 (STCW-F 1995) is set to enter into force on 29 September 2012. The 1995 STCW-F Convention sets the certification and minimum training requirements for crews of seagoing fishing vessels of 24 meters in length and above. The overhaul of the STCW-F 1995 major amendment gives significant impact toward maritime fishing training provider in Malaysia. The maritime training in fishing is an important asset in training the young fisherman. The objective of this research is to explore the possible challenges faced by the Malaysian Fisheries Academy (APM) and also to identify the major challenges of the implementation of STCW-F using Factor Analysis. The analysis in this research is represented by individual/employees from “Akademi Perikanan Malaysia” by department. The scope of this research is suggested to focus especially at Chendering, Kuala Terengganu. The result explored and identify the Possible Challenges on the implementation of STCW-F

KEYWORDS: STCW-F 1995, Training Center and Training for Fisherman.

INTRODUCTION

The Standard of Training, Certification and Watchkeeping (STCW-F) convention was drafted in 7 July 1995 and enter into force on 29 September 2012 after the required 15 ratifications were reached on 29 September 2011 with ratification by the Republic of Palau[1].

The objective of the STCW-F Convention is to ensure fishing vessel personnel are fit for the job and qualified (as proven by medical examination and official certificate) in order to prevent threats for safety of life or vessel during operation on board. The STCW-F requires that personnel acquire minimum information, in particular concerns and have implemented jobs on board a vessel throughout a minutest period of time[2].

The convention is correspondingly to attain and preserve a level playing subject in the fisheries sector by adopting vocational education. This convention also caused an impact on the marine training provider all over the world including Malaysia.

The 1995 amendments to the STCW-F convention had given a significant impact towards the maritime training provider whether in positive or negative aspect. It is really costly when an amendment is made because of the way of training and also the equipment for training will be different. Therefore, it had increased the training operational cost of the training provider.

The research aims to know more about the possible challenges faced by the Malaysian Fisheries Academy (APM) adopting and implementing the training of fisherman under STCW-F. In Malaysia, there is only one fishing training academy which is located in Chendering, Kuala Terengganu, eastern coast of Peninsular Malaysia. The purpose of this research is to know what the impacts that they faced and the requirement to be a fisherman under STCW-F. Thus, to evaluate possible challenges to “Akademi Perikanan Malaysia” adopting and implementing the training of fisherman under STCW-F in fishing industry vital.

This research objective on the subject includes:

- Explore the possible challenges faced by the APM
- Identify the major challenges of the implementation of STCW-F

A BRIEF OVERVIEW ABOUT STCW-F

The STCW-F convention was accepted on 7 July 1995 at the international conference. It was held in London from 26 June to 7 July 1995 with the participation of 74 governments and amongst them 22 current European Union Member States[3].

Act used for anyone using fishing vessels is the 1978 IMO international convention on Standards of Training, Certification and Watchkeeping for seafarers (STCW convention). STCW convention is an international treaty that was agreed to discuss the efficiency of the sea and reduce accidents at sea.

STCW-F convention has its own objective which is to certify that fishing vessel personnel are theoretical acquire as an official certificate and appropriate to their work as well as training classes and health inspection was approved. It is intended for life safety of employees while on the ship and equipment used during fishing and reduces the threat of damage to marine life. These conventions require individuals to have a proper knowledge of certain things while fishing and have experience on a ship for a certain time[3].

The purpose of this convention is recognized to realize and preserve a level playing field in the fisheries sector. Staff efficiency of fishing vessels should be done in accordance with the convention set. For the vessels 24m and over and 750kW obliged to take the STCW-F including the officers involved, crew and radio operator [1]. Governments are encouraged to do exercises on the ship 24m and more as well as a mandatory basic safety training undertaken by each crew member.

TRAINING AND AWARENESS

Fishermen like unaware of the risks inherent in their jobs. Apart from a lot of evidence to suggest that job is at risk scientific studies also show fishermen are more likely to suffer injuries in the ocean compared to jobs in other sectors. In a Canadian study, "hierarchy of anxiety" among offshore fishermen indicated that their biggest concern is focused on the lack of fish stocks and the potential loss of work and others just to mention fear of injury in the workplace at the bottom[4].

Accidents involving fishermen are more likely to occur if they work longer. They have three times the risk of causing a fatal accident. Tugged dangerous and may be inclined to risk will be given to the more experienced fisherman. By the younger crew members tend to receive training from a more experienced fisherman from them without the training institutions. They think that way can reduce the number of accidents at sea when the teachings of those who have experienced, and they build the vessel and working conditions on board without following the prescribed following standards.

Fishing training for an employee in vessel safety and their responsibilities at sea has three parts such as part A, B and C. For the part A of this course aims to provide the necessary skills and knowledge available to board a fishing vessel and understand the procedure, preventing security and accidents at sea and social responsibility such as teamwork, proper communication and others[5].

When a trainees complete the course, they will learn the steps needed when and what actions to take during an emergency. The certificate has been provided and the course has been permitted by the organization. Trainees who successfully complete the program, the administration may issue a certificate proving that they have finished a course based on chapter III regulation 1 of the STCW-F convention: Basic training for all fishing vessel personnel. This certificate must be endorsed by the Principal and the Director of Marine Department[6].

METHODOLOGY

The research methodology is a collective term for the structured process of conducting research. This chapter will describe the methodology used to collect the primary data and other related information with the research. It also discusses on how the research design and what are the instruments used in conducting the study.

This study was run by questionnaire. Concluded a multi-stage random sampling, one Fisheries Academy was selected namely APM, Chendering, Kuala Terengganu. The time occupied 15-20 for every respondents. The selected 45 respondents contained by the management level, non-management level and Trainers as well. five-Likert scale selection are given for the respondents, for each question in questionnaires. Whereby, one represents strongly disagree, two represents disagree, three represents moderate, four represents agree and five represent strongly agree. To attain the objective of the research, descriptive statistics such as frequency, percentage and mean were used in order to define the general data of the research. The data gathered was treated and analyzed using Statistical Package for the Social Sciences (SPSS) version 21.

Respondents' Demographic Data

The outcomes displayed that furthermost of the training center staffs are Malays, and that prevalence of men in the training center was still high. Respondent's highest age group is 20-29 years old and above. This shows that training center accepted by the younger generation. The percentage result verified for experience presented that the commonality of the respondents interrogated could be considered to be less experience as shown in Table 1.

Table 1: Demographic data

Items	Frequency	Percentage (%)
Age	20-29 years	31
	30-39 years	6
	40-49 years	2
	50-60 years	6
Involved/worked at training center	1 years and less	33
	2-4 years	15
	5-7 years	2
	8-10 years	6
	More than 11 years	3
Position	Management level	19
	Non-management level	26

Reliability Analysis (Cronbach Alpha)

Table 2: Reliability analysis

Cronbach's Alpha	0.678
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The Reliability Analysis (Cronbach Alpha) is to prove that the variables in the questionnaires are reliable element. The value of Cronbach's alpha of 0.70 or higher is considered as good where value between $0.6 \leq \alpha < 0.7$ is considered as moderate, and the items studied in each element are correlated to another [7]. In this analysis, the value of Cronbach's alpha is 0.678 (Table 2) which considered as moderate and signifying that the items have moderately internal consistency. Consequently, particular items are reliable to be used throughout this research [15].

Analysis of Variance (ANOVA)

The ANOVA is used in this research to determine the probability that differences in means across several groups are due solely to sampling error [9]. These elements can be considered as responsive and sensitive towards the perception of implementation of STCW-F variability [10, 15]. Several variables that have been pick to compare with the position of the Fisheries Academy staff, it is shown the relationship between the position of academy staff and the variables. Selected variables is 1, 6, 19 and 21 due to this variable has significant to trainer for STCW-F courses.

Table 3: ANOVA one way

		Sum of Squares	Mean Square	F	Sig.
1. Already know thoroughly about the STCW-F.	Between groups	5.323	5.323	6.542	0.014
	Within groups	34.988	0.814		
	Total	40.311			
16. Acknowledges that STCW-F is for fishing boats that have a length of 15/24 meters and above.	Between groups	9.354	9.354	20.267	0.000
	Within groups	19.846	0.462		
	Total	29.200			
19. Acknowledges that there are differences in the course of fishing boats that go to the coast and the sea.	Between groups	2.359	2.359	4.012	0.052
	Within groups	25.285	0.588		
	Total	27.644			
21. Acknowledges that there are differences certification/course skippers, officers, engineer, radio operator and watchkeeper.	Between groups	0.844	0.844	2.127	0.152
	Within groups	17.067	0.397		
	Total	17.911			

Variable number 1 shown sig- p value = 0.014 (Table 3) based on the hypothesis $H_0: \mu_1 = \mu_2$ and H_a : At least one mean is different. Since $\alpha = 0.05$ and sig- p value $< \alpha$, H_0 rejected. There is a significant difference of the knowledge on STCW-F between Fisheries Academy staff. This convention (15 articles and 4 chapters) for fishing vessel personnel that have 24 meters in length [11]. There are different thought between the positions of staff about the

STCW-F shown that before implementing this convention standardize the knowledge about STCW-F among the staff are needed to make the STCW-F is one of their courses.

Variable number 6 shown sig- p value = 0.00 (Table 3) based on the hypothesis $H_0: \mu_1 = \mu_2$ and H_a : At least one mean is different. Since $\alpha = 0.05$ and sig- p value $< \alpha$, H_0 rejected. There is a significant difference of the knowledge on length of fishing boat for STCW-F between Fisheries Academy staff. The amended convention stipulates the necessary training and certification criteria for skipper and watch keepers on fishing vessels with the dimension beyond 24 meters for engineers on vessels yielding more than 750kW and for crew responsible for radio communications. Besides that, this convention also addresses the elementary (pre-sea) safety training for all personnel on fishing vessels. In short, the premise of this convention is on competency-based training [12, 13, 15].

Variable number 19 shown sig- p value = 0.52 (Table 3) based on the hypothesis $H_0: \mu_1 = \mu_2$ and H_a : At least one mean is different. Since $\alpha = 0.05$ and sig- p value $> \alpha$, H_0 rejected. There is a significant difference of the knowledge on fishing boat courses for STCW-F between Fisheries Academy staff. Due to this variable test result, there is the difference knowledge among Fisheries Academy staff in the course of STCW-F.

Variable number 21 shown sig- p value = 0.152 (Table 3) based on the hypothesis $H_0: \mu_1 = \mu_2$ and H_a : At least one mean is different. Since $\alpha = 0.05$ and sig- p value $> \alpha$, so do not reject H_0 . There is no significant difference of the knowledge on differences certification/course skippers, officers, engineer, radio operator and the watchkeeper between Fisheries Academy staff. This variable result shown that Fisheries Academy staff has aware that there are different courses for STCW-F.

Factor Analysis

The dataset is suitable for Exploratory Factor Analysis (EFA) after consideration resolving the issue and rerun the analysis. Firstly, the patterned relationship amongst the variables has been checked in correlation matrix (Table 4). Variables that have a large number of low correlation coefficient ($r < \pm 0.30$) should be removed due to indicate low patterned relationships. The correlation matrix (Table 4) does not have an issue of multicollinearity and there seem to be patterned relationships amongst the variables [8, 14, 15].

Table 4: Correlation matrix

Correlation	2. The training center has enough instructors for training STCW-F.	3. The training center has experienced trainers for training STCW-F.	4. The training center still has no budget to implement the training STCW-F.	5. The number of training centers for fishermen still lacking in Malaysia.
2. The training center has enough instructors for training STCW-F.	1.000	0.752	0.457	0.070
3. The training center has experienced trainers for training STCW-F.	0.752	1.000	0.735	0.178
4. The training center still has no budget to implement the training STCW-F.	0.457	0.735	1.000	0.130
5. The number of training centers for fishermen still lacking in Malaysia.	0.070	0.178	0.130	1.000

Secondly, the KMO and Bartlett's test (Table 5) significance level of $p < 0.05$ to confirm that the variables has patterned relationships due to the sig. value is 0.00 (Table 5).

Table 5: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.670
Bartlett's Test of Sphericity	Approx. Chi-Square	470.592
	Sig.	0.000

Total variance is use for (Table 6) to define the number of significant factors. The only significance is only to obtain and rotated are useful for clarification. The factors are set in the downward order based on the most explained variance. The removal sums of squared loadings are matching to the initial eigenvalues excluding factors that factor that have eigenvalues less than 1 are not shown. Table 6 shown the eigenvalues and variance preceding to rotation. The rotation sums of squared loadings shown the eigenvalues and variance after rotation. Rotated eigenvalues and scree plot (Figure 1) used to define the number significant factors. The red line on the slope indicates that this analysis have 5 factors [8, 14, 15].

Table 6: Total variance

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.551	32.654	32.654
2	2.96	17.413	50.067
3	1.87	11	61.066
4	1.364	8.023	69.09
5	1.087	6.396	75.486

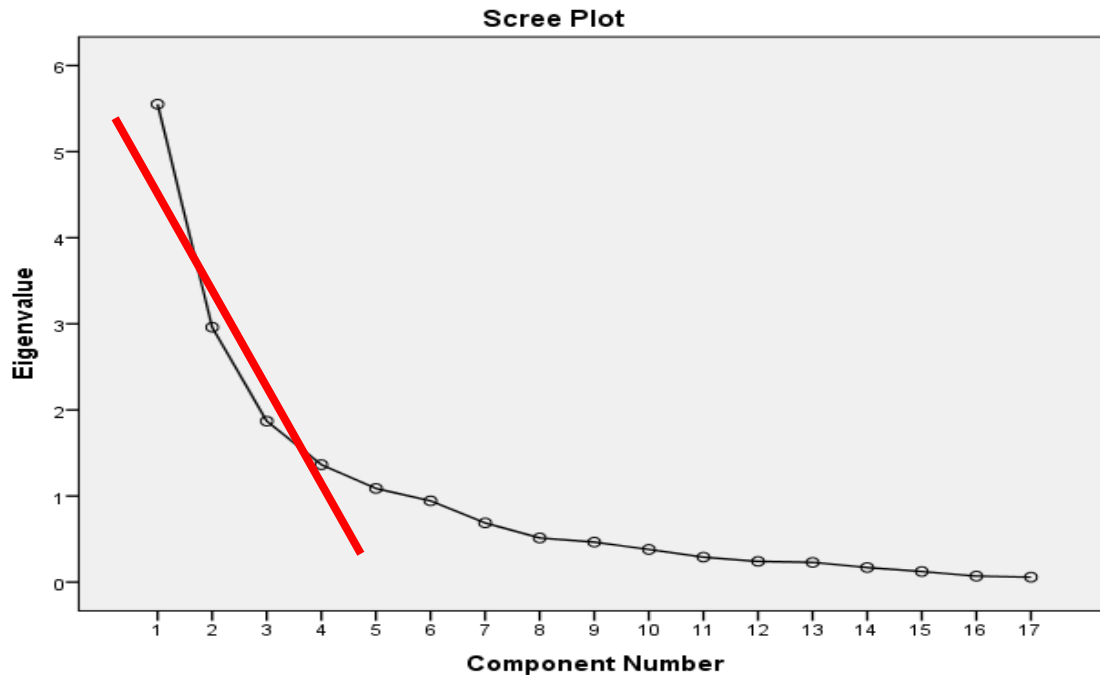


Figure 1: Scree plot

The factor matrix is shown the factor loadings preceding to rotation where the rotated factor matrix shows the rotated factor loadings (Table 7). The factor loadings show that the factors are impartially right with at least 6 variables per factors that above 0.32. The factors consist of many complex variables. To resolve the issue of non-significant loading item (e.g., training centeris ready to teach STCW-F), rerun the analysis without that item. Lower cutoff not be considered because exclude that item from this study is affordable. The factor divided into 5 components. The factors that have significant with the variables has been highlighted to indicate which factor significant with the variables (Table 7). All the factors will be discussed in the result.[8, 14, 15].

Table 7: Rotated factor matrix

	Component				
	1	2	3	4	5
22. Training center already has the module for each different type of fisherman assign to; example: module for skippers, officers, engineer, radio operator and watchkeeper.	0.879				
21. Acknowledges that there are differences certification/course skippers, officers, engineer, radio operator and watchkeeper.	0.765				
19. Acknowledges that there are differences in the course of fishing boats that go to the coast and the sea.	0.752				
18. Apart from basic training (BT)for employees of fishing boats, are you aware there are several other courses?	0.717				
16. Acknowledges that STCW-F is for fishing boats that have a length of 15/24 meters and above.	0.709				
20. There are differences of course aware of the boat's engine engineers to 750kW and above.	0.635				
13. Most fishermen do not care about safety while at sea or fishing.		0.860			
7. Educational background of fisherman that low will make it difficult for learning the exercise.		0.798			
10. The number of institutions makes it difficult for fishermen to attend training course.		0.775			
15. Training STCW-F should be done around port/pier fishing so fishermen do not have the training center		0.768			

11. The courses offered are unable to attract the fishermen to attend a training center.	0.531				
3. The training center has experienced trainers for training STCW-F.			0.895		
4. The training center still has no budget to implement the training STCW-F.			0.806		
2. The training center has enough instructors for training STCW-F.			0.695		
17. Does STCW-F has 4 chapters for the safety of personnel fishermen?				0.784	
5. The number of training centers for fishermen still lacking in Malaysia.				0.545	
8. Trainers less exposure to the STCW-F.					0.867

RESULTS AND DISCUSSION

The EFA shown that this analysis have 5 factors, including the significant variables. Component number 1(factor number 1), variables 22, 21, 19, 18, 16 and 20. The factor number 1 is grouping into readiness of training center about the STCW-F training module. Component number 2(factor number 2), variables 13, 7, 10, 15 and 11. The factor number 2 is grouped into fisherman needs and fisherman awareness. Component number 3(factor number 3), variables 3, 4 and 2. The factor number 3 is grouped into the number and experience trainers of training center. Component number 4(factor number 4), variables 17 and 5. The factor number 4 is grouped into lack of training centers number in Malaysia. Component number 5(factor number 5), variables 5. The factor number 5 is grouped into trainer less expose to the STCW-F course. In previous research of STCW-F in Malaysia by[11], it states that the courses which fishermen must take are based on the length of their boat and fishing class by simplifying the way of training for fishermen. The data collected from the fishermen training center itself and the result shown the factors that need to be concerned in order to implement STCW-F convention.

CONCLUSION

The possible challenges in implementing STCW-F has been explored and identify using EFA. 5 major factors have been identified as possible challenges that APM. Thus, it answered the objective which is to identify the major challenges of the implementation of STCW-F in Malaysia. These 5 factors need to be the first concern of government and authorities body before implementation of STCW-F. As the aim of this study is to identify the level of readiness of Fisheries Academy in implementing this convention, the main issue had been bold were facilities and trainer. Interestingly, this issue can simply be resolved by allowing 35 Marine Institute register with Marine Department to conduct program under the STCW-F convention. Universiti Kuala Lumpur-Malaysian Institute of Marine Engineering Technology among the institute ready to offer this program.

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