

Examining the Condition of Controlling and Inspecting State Vessels (in Terms of Technical and Security Factors) Traveling to Bushehr Ports and Providing Suitable Solutions

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Abstract

The aim of the study is to examine the technical and security conditions of state vessels traveling to Bushehr ports. This research is filled out through a 22-item questionnaire by 40 security and controlling officers of Bushehr vessels. The results of Kolmogorov-Smirnov test suggest that the data are normal and T-test has been used for questionnaire analysis. The findings indicate that failure in technical and security certificates, failure of qualification certificate, failure of machinery and electrical appliances, structural safety defects, failure of telecommunication equipment, failure of security in under 500 tons motor boats and traditional and metal vessels [1]. As well, above 500 tons vessels traveling to Bushehr waters (state vessels) have suitable conditions.

Keywords

Technical and Security Condition, State Vessels, Ports of Bushehr

1. Introduction

Control and inspection unit of vessels is responsible of inspecting internal and external vessels in its country's ports in order to adapt vessels with international obligations adopted by instructions and regulations (IMO,

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2013). One reason in forming vessels' control and inspection unit is that some state vessels don't observe global standards which consequently result in endangering the lives of seafarers and the environment [2]. Examining the control and inspection condition of some international ports, DNV company showed that most defects identified by vessels' control and inspection officers are located in fire equipment (19%), ISM regulations (15%), rescue equipment (13%) and vessels' machinery (13%), respectively (DNV, 2012). The information of vessels' control and inspection officers are suitable for traders and shipping lines because they can identify weak-security vessels and reject to make a contract with them (IMO, 2012). International Maritime Organization (IMO) gives right to their all member countries to inspect technical and security test to all vessels entering their ports in order to ensure maritime safety and to protect maritime environment. The countries have merchant marine inspecting their vessels to ensure that they follow the international conventions, avoid repeated inspections and keep their stand and condition in their shipping industry. Controlling and inspecting vessels are one of the effective ways for identifying non-standard vessels (Ports & Maritime Organization, 2006). Regarding to increased maritime accidents in Bushehr ports as one of main oil exporting ports and the need of Qatar for building materials to implementing its sport projects, it is necessary that the accidents of this port are to be decreased. One of the methods to do so is increasing the condition of vessels' control and inspection [1].

2. Research's Background

Chaldavi (2012) examined the defects and solutions of increasing the security of non-convention vessels traveling to Imam Khomeini port. Training, monitoring, sovereignty and supporting in decreasing reported defects by control and inspection unit have higher importance, and to decreasing the accidents originated from structural defects, supporting, monitoring and training, and to decreasing the human accidents, training, sovereignty and monitoring have higher importance, respectively. Hashemi (2013) questioned some accidents in Iran maritime and state vessels in recent years such as accident of Iranian ship off the Chinese coasts and Kosha 1 and the quality of control and inspection centers, hence it is necessary to reinforcing and enhancing control and inspection centers. Based on his research, control and inspection officers of vessels are not consistent with standard national and international obligations and regulations such as apprenticeship, specialized courses and work independence [3].

Liu (2013) said that his goal about writing the article titled "Examining the obligations of vessels' control and inspection in Southern China waters" is enhancing vessels' control and inspection system in line with enhancing maritime environment of the region. The researcher defined three stages for this purpose: The first stage: definition of international obligations related to vessels' control and inspection; the second stage: the experiences of China's ports about preventing polluted vessels in China waters; the third stage: The experiences of European Union in control and inspecting of vessels.

Kujala & Hannien (2014) designed a relation and model based on the number and kind of defects and traffic amount of a region. The imported information of the model includes vessel's age, kind, vessel's flag, accident and its location reported by VTS.

Fan *et al.* (2014) stated that flag selection and vessels' inspection center are the two important factor that are selected based on maritime policy. Estimation of foreign effective factors on flag selection and the amount of inspection of vessels' control center are effective in determining suitable policy for improving maritime security [4].

Cariou & Wolff (2015) stated that the vessels that are not consistent with international regulations are the aim of vessels' control and inspection centers. Although inspecting of vessels is costly, some inspections cannot show some defects. Therefore, the researchers of the research trying to find a pattern for identifying defects and kind of vessels [5].

3. Research Methodology

3.1. The Research's Hypothesis

Regarding to increased accidents in Bushehr ports, the following hypothesis is made:

- There is a significant relation between suitable implementation and correspondent with international standards of vessels' control and inspection in Bushehr ports, and improving and enhancing state vessels' technical and security factors [6].

3.2. Operational Terms

- Vessels' control and inspection officer: An expert and qualified person who perform technical and security inspection licensed by Ports & Maritime Organization and it is exclusively responsible about the organization (Ports and Maritime Organization, 2006).
- Vessels' control and inspection with Iran's flag: vessels' control and inspection with Iran's flag in internal ports or other locations of the world's water by the organization's inspectors to ensuring about corresponding the condition of a vessel with related national and international obligations [7].

3.3. The Research's Statistical Population and Sample

In this research, the security experts of Bushehr ports, the control and inspection experts and officers of Bushehr ports make the statistical population of the research (50 people). Regarding to the statistical population of the research (50 people), it is considered as the research's sample.

3.4. Validity and Reliability of the Questionnaire

Cronbach's Alpha test is used to determine the reliability of the research. The result of this test is described in **Tables 1-4**.

In this research, 50 questionnaires was delivered to the research's sample that 40 cases were returned to the researcher. Therefore, data analysis was done based on this 40 questionnaires [8].

3.5. Data analysis Method

The inferential method is used in this research because statistical indices are analyzed in it and its significant statistical difference is cleared. Therefore, it is determined that the research's findings are valid, not accidental (Khaki, 2004). The inferential statistical tests are dependent on normality/abnormality of data. Regarding that the normality/abnormality of data are discussed in chapter 4, the normality of data is determined through T-test, and abnormality of data through Chi-square test. SPSS¹ (version 21) software is used to analyze collected data. For all hypotheses of the research significant level is 0.05. Therefore, the confidence level of all hypotheses results is 95% [9].

4. Results

4.1. Descriptive Statistics

Please see **Tables 1-4**.

Table 1. The results of Cronbach's Alpha test of vessels' control and inspection factors in Bushehr.

Cronbach's alpha	Number
0.79	40

Table 2. Work distribution of the respondents.

Security unit officer	Vessels' control and inspection expert	Watercraft's control and inspection expert
9	23	8

Table 3. Work experience of the respondents.

Under 5 years	Among 5 to 10 years	More than 10 years
17	15	8

Table 4. Education level of the respondents.

Under graduated	Bachelor	Master	PhD
7	15	7	1

¹Statistical package for the social sciences.

4.2. Inferential Statistics

Firstly, in this chapter, the results of Kolmogrov-Smirnov are stated to determine whether questionnaire data are normal/abnormal (Table 5).

Regarding to the results of the test, it was determined that the test's amount is between 2 and -2 and the amount of significant level is less than 0.05; therefore data are normal and the researcher must use parametric tests. Since the related data to the questionnaire is normal, the parametric tests (T test) are used in inferential tests [10].

4.3. Questionnaires' Analysis

4.3.1. The Defect of Watercraft's Technical and Security Licenses in under 500 Tons Motor Boats and Traditional Watercrafts

H₀: The defect of watercraft's technical and security licenses in under 500 tons motor boats and traditional watercrafts is not significant.

H₁: The defect of watercraft's technical and security licenses in under 500 tons motor boats and traditional watercrafts is significant.

The hypothesis test: As Table 6 shows, the significant level is less than 0.05 (0.001), so H₀ is rejected and

Table 5. The results of Kolmogrov-Smirnov test.

Question	Freedom degree	Kolmogrov-Smirnov	Significant level
1	39	0.845	0.000
2	39	0.712	0.000
3	39	0.679	0.001
4	39	0.605	0.000
5	39	-0.419	0.000
6	39	0.455	0.000
7	39	0.773	0.000
8	39	0.661	0.000
9	39	-0.690	0.000
10	39	0.550	0.000
11	39	0.711	0.000
12	39	0.846	0.000
13	39	0.846	0.000
14	39	0.612	0.000
15	39	0.952	0.000
16	39	0.514	0.002
17	39	0.711	0.000
18	39	0.811	0.000
19	39	0.943	0.032
20	39	-0.363	0.000
21	39	0.586	0.000
22	39	0.139	0.000

Table 6. The results of T-test about the defect of watercrafts technical and security licenses in under 500 tons motor boats and traditional watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.78	3.58	3.68	0.001	39	3.65

H_1 is confirmed, namely the defect of watercraft's technical and security licenses in under 500 tons motor boats and traditional watercrafts is significant.

4.3.2. The Defect of Qualification Licenses in under 500 Tons Motor Boats and Traditional Watercrafts

H_0 : The defect of qualification licenses in under 500 tons motor boats and traditional watercrafts is not significant.

H_1 : The defect of qualification licenses in under 500 tons motor boats and traditional watercrafts is significant.

The hypothesis test: As Table 7 shows, the significant level is less than 0.05 (0.001), so H_0 is rejected and H_1 is confirmed, namely the defect of qualification licenses in under 500 tons motor boats and traditional watercrafts is significant.

4.3.3. Failure of Machinery and Electrical Appliances in under 500 Tons Motor Boats and Traditional Watercrafts

H_0 : The failure of machinery and electrical appliances in under 500 tons motor boats and traditional watercrafts is not significant.

H_1 : The failure of machinery and electrical appliances in under 500 tons motor boats and traditional watercrafts is significant.

The hypothesis test: As Table 8 shows, the significant level is less than 0.05 (0.00), so H_0 is rejected and H_1 is confirmed, namely the failure of machinery and electrical appliances in under 500 tons motor boats and traditional watercrafts is significant.

4.3.4. Structural Safety Defects in under 500 Tons Motor Boats and Traditional Watercrafts

H_0 : The structural safety defects in under 500 tons motor boats and traditional watercrafts is not significant.

H_1 : The structural safety defects in under 500 tons motor boats and traditional watercrafts is significant.

The hypothesis test: As Table 9 shows, the significant level is less than 0.05 (0.00), so H_0 is rejected and H_1 is confirmed, namely the structural safety defects in under 500 tons motor boats and traditional watercrafts is significant [11].

4.3.5. The Defect of Load Line in under 500 Tons Motor Boats and Traditional Watercrafts

H_0 : The defect of load line in under 500 tons motor boats and traditional watercrafts is not significant.

H_1 : The defect of load line in under 500 tons motor boats and traditional watercrafts is significant.

Table 7. The results of T-test about the defect of qualification licenses in under 500 tons motor boats and traditional watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.45	3.25	3.30	0.000	39	3.35

Table 8. The results of T-test about the failure of machinery and electrical appliances in under 500 tons motor boats and traditional watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.06	2.98	3.04	0.000	39	3.02

Table 9. The results of T-test about structural safety defects in under 500 tons motor boats and traditional watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.48	3.28	3.36	0.000	39	3.35

The hypothesis test: As **Table 10** shows, the significant level is less than 0.05 (0.001), so H_0 is rejected and H_1 is confirmed, namely defect of load line in under 500 tons motor boats and traditional watercrafts is significant.

4.3.6. The Defect of Security Equipment and Cases in under 500 Tons Motor Boats and Traditional Watercrafts

H_0 : The defect of security equipment and cases in under 500 tons motor boats and traditional watercrafts is not significant.

H_1 : The defect of security equipment and cases in under 500 tons motor boats and traditional watercrafts is significant.

The hypothesis test: As **Table 11** shows, the significant level is less than 0.05 (0.00), so H_0 is rejected and H_1 is confirmed, namely defect of security equipment and cases in under 500 tons motor boats and traditional watercrafts is significant.

4.3.7. The Failure of Telecommunication Equipment in under 500 Tons Motor Boats and Traditional Watercrafts

H_0 : The failure of telecommunication equipment in under 500 tons motor boats and traditional watercrafts is not significant.

H_1 : The failure of telecommunication equipment in under 500 tons motor boats and traditional watercrafts is significant.

The hypothesis test: As **Table 12** shows, the significant level is less than 0.05 (0.000), so H_0 is rejected and H_1 is confirmed, namely the failure of telecommunication equipment in under 500 tons motor boats and traditional watercrafts is significant [13].

4.3.8. The Defect of Technical and Security Licenses in under 500 Tons Metal Motor Boats and Watercrafts

H_0 : The defect of technical and security licenses in under 500 tons metal motor boats and watercrafts is not significant.

H_1 : The defect of technical and security licenses in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As **Table 13** shows, the significant level is less than 0.05 (0.000), so H_0 is rejected and H_1 is confirmed, namely the defect of technical and security licenses in under 500 tons metal motor boats and watercrafts is significant.

Table 10. The results of T-test about the defect of load line in under 500 tons motor boats and traditional watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.56	3.40	3.43	0.001	39	3.46

Table 11. The results of T-test about defect of security equipment and cases in under 500 tons motor boats and traditional watercrafts [12].

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.86	3.60	3.73	0.000	39	3.69

Table 12. The results of T-test about the failure of telecommunication equipment in under 500 tons motor boats and traditional watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.50	3.44	3.47	0.000	39	3.45

4.3.9. The Defect of Qualification Licenses in under 500 Tons Metal Motor Boats and Watercrafts

H₀: The defect of qualification licenses in under 500 tons metal motor boats and watercrafts is not significant.

H₁: The defect of qualification licenses in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As Table 14 shows, the significant level is less than 0.05 (0.000), so H₀ is rejected and H₁ is confirmed, namely the defect of qualification licenses in under 500 tons metal motor boats and watercrafts is significant.

4.3.10. The Failure of Machinery and Electrical Appliances in under 500 Tons Metal Motor Boats and Watercrafts

H₀: The failure of machinery and electrical appliances in under 500 tons metal motor boats and watercrafts is not significant.

H₁: The failure of machinery and electrical appliances in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As Table 15 shows, the significant level is less than 0.05 (0.30), so H₀ is rejected and H₁ is confirmed, namely the failure of machinery and electrical appliances in under 500 tons metal motor boats and watercrafts is significant.

4.3.11. The Defect of Load Line in under 500 Tons Metal Motor Boat and Watercrafts

H₀: The defect of load line in under 500 tons metal motor boats and watercrafts is not significant.

H₁: The defect of load line in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As Table 16 shows, the significant level is less than 0.05 (0.00), so H₀ is rejected and H₁ is confirmed, namely the defect of load line in under 500 tons metal motor boats and watercrafts is significant.

4.3.12. The Defect of Security Appliances and Cases in under 500 Tons Metal Motor Boats and Watercrafts

H₀: The defect of security appliances and cases in under 500 tons metal motor boats and watercrafts is not significant.

Table 13. The results of T-test about the defect of technical and security licenses in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.40	3.26	3.33	0.000	39	3.39

Table 14. The results of T-test about the defect of qualification licenses in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.66	3.49	3.58	0.000	39	3.57

Table 15. The results of T-test about the failure of machinery and electrical appliances in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.68	3.56	3.64	0.003	39	3.61

Table 16. The results of T-test about the defect of load line in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.96	3.84	3.80	0.000	39	3.86

H₁: The defect of security appliances and cases in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As **Table 17** shows, the significant level is less than 0.05 (0.00), so H_0 is rejected and H_1 is confirmed, namely the defect of security appliances and cases in under 500 tons metal motor boats and watercrafts is significant.

4.3.13. The Defect of Oil Pollution and Waste in under 500 Tons Metal Motor Boats and Watercrafts

H₀: The defect of oil pollution and waste in under 500 tons metal motor boats and watercrafts is not significant.

H₁: The defect of oil pollution and waste in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As **Table 18** shows, the significant level is less than 0.05 (0.00), so H_0 is rejected and H_1 is confirmed, namely the defect of oil pollution and waste in under 500 tons metal motor boats and watercrafts is significant.

4.3.14. The Defect of Telecommunication Equipment in under 500 Tons Metal Motor Boats and Watercrafts

H₀: The defect of telecommunication equipment in under 500 tons metal motor boats and watercrafts is not significant.

H₁: The defect of telecommunication equipment in under 500 tons metal motor boats and watercrafts is significant.

The hypothesis test: As **Table 19** shows, the significant level is less than 0.05 (0.023), so H_0 is rejected and H_1 is confirmed, namely the defect of telecommunication equipment in under 500 tons metal motor boats and watercrafts is significant.

4.3.15. The Defect in SOLAS Convention in over 500 Tons Vessels

H₀: The defect in SOLAS convention in under 500 tons vessels is not significant.

H₁: The defect in SOLAS convention in under 500 tons vessels is significant.

The hypothesis test: As **Table 20** shows, the significant level is less than 0.05 (0.066), so H_0 is confirmed and H_1 is rejected, namely the defect in SOLAS convention in over 500 tons is not significant.

Table 17. The results of T-test about the defect of security appliances and cases in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.92	3.63	3.76	0.000	39	3.79

Table 18. The results of T-test about the defect of oil pollution and waste in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.22	2.96	3.13	0.000	39	3.12

Table 19. The results of T-test about the defect of telecommunication equipment in under 500 tons metal motor boats and watercrafts.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.76	3.65	3.68	0.023	39	3.71

Table 20. The results of T-test about the defect of the defect in SOLAS convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.30	2.10	2.20	0.066	39	2.15

4.3.16. The Defect in MARPOL Convention in over 500 Tons Vessels

H₀: The defect in MARPOL convention in over 500 tons vessels is not significant.

H₁: The defect in MARPOL convention in over 500 tons vessels is significant.

The hypothesis test: As Table 21 shows, the significant level is less than 0.05 (0.053), so H₀ is confirmed and H₁ is rejected, namely the defect in MARPOL convention in over 500 tons is not significant.

4.3.17. The Defect in LOAD LINE-66 Convention in over 500 Tons Vessels

H₀: The defect in LOAD LINE-66 convention in over 500 tons vessels is not significant.

H₁: The defect in LOAD LINE-66 convention in over 500 tons vessels is significant.

The hypothesis test: As Table 22 shows, the significant level is less than 0.05 (0.061), so H₀ is confirmed and H₁ is rejected, namely the defect in LOAD LINE-66 convention in over 500 tons is not significant.

4.3.18. The Defect in ISM CODE in over 500 Tons Vessels

H₀: The defect in ISM CODE convention in over 500 tons vessels is not significant.

H₁: The defect in ISM CODE convention in over 500 tons vessels is significant.

The hypothesis test: As Table 23 shows, the significant level is less than 0.05 (0.075), so H₀ is confirmed and H₁ is rejected, namely the defect in ISM CODE convention in over 500 tons is not significant.

4.3.19. The Defect in ILO Convention in over 500 Tons Vessels

H₀: The defect in ILO convention in over 500 tons vessels is not significant.

H₁: The defect in ILO convention in over 500 tons vessels is significant.

The hypothesis test: As Table 24 shows, the significant level is less than 0.05 (0.063), so H₀ is confirmed and H₁ is rejected, namely the defect in ILO convention in over 500 tons is not significant.

4.3.20. The Defect in COLREG Convention in over 500 Tons Vessels

H₀: The defect in COLREG convention in over 500 tons vessels is not significant.

H₁: The defect in COLREG convention in over 500 tons vessels is significant.

The hypothesis test: As Table 25 shows, the significant level is less than 0.05 (0.051), so H₀ is confirmed and H₁ is rejected, namely the defect in COLREG convention in over 500 tons is not significant.

Table 21. The results of T-test about the defect of the defect in MARPOL convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
3.36	2.16	2.26	0.053	39	2.24

Table 22. The results of T-test about the defect of the defect in LOAD-LINE-66 convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.21	2.03	2.12	0.061	39	2.11

Table 23. The results of T-test about the defect of the defect in ISM CODE convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.20	2.05	2.12	0.075	39	2.10

Table 24. The results of T-test about the defect of the defect in ILO convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.50	2.30	2.40	0.063	39	2.41

Table 25. The results of T-test about the defect of the defect in COLREG convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.25	2.15	2.20	0.051	39	2.18

Table 26. The results of T-test about the defect of the defect in STCW convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.34	2.22	2.28	0.052	39	2.38

Table 27. The results of T-test about the defect of the defect in BCH & IBC convention in over 500 tons vessels.

95% significant level		Mean difference	Significant level	Freedom degree	t-amount
High degree	Low degree				
2.50	2.20	2.35	0.051	39	2.30

4.3.21. The Defect in STCW Convention in over 500 Tons Vessels

H₀: The defect in STCW convention in over 500 tons vessels is not significant.

H₁: The defect in STCW convention in over 500 tons vessels is significant.

The hypothesis test: As **Table 26** shows, the significant level is less than 0.05 (0.052), so H₀ is confirmed and H₁ is rejected, namely the defect in STCW convention in over 500 tons is not significant.

4.3.22. The Defect in BCH & IBC Conventions in over 500 Tons Vessels

H₀: The defect in BCH & IBC convention in over 500 tons vessels is not significant.

H₁: The defect in BCH & IBC convention in over 500 tons vessels is significant.

The hypothesis test: As **Table 27** shows, the significant level is less than 0.05 (0.51), so H₀ is confirmed and H₁ is rejected, namely the defect in BCH & IBC convention in over 500 tons is not significant.

5. Conclusions and Recommendations

The hypothesis among suitable implementation and along with international standards of vessels' control and inspection in Bushehr's ports and enhancing state vessels' technical and security features has significant relation. So the following suggestions can be made:

- 1) Increasing man power in vessels' control and inspection centers.
- 2) Establishing organizational chart for vessels' control and inspection unit.
- 3) Improving the condition of control and inspection equipment and their low quality.
- 4) Creating a suitable motivational system for vessels' control and inspection officers.
- 5) Mismatching the number of educational courses.
- 6) Legal problems of contract staffs.

It is recommended to other researchers:

- 1) To examine the performance condition of the vessels' control and inspection officers in Bushehr.
- 2) To examine the effective factors on the performance of the vessels' control and inspection officers in Bushehr.
- 3) To examine the risks and hazards the vessels' control and inspection officers faced with during inspecting vessels.
- 4) The given trainings to the vessels' control and inspection officers of Bushehr should be studied.

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