

# Quality standards systems: status, compliance and adherence in maritime institutions in the Philippines

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This survey research aimed to determine the status of and compliance to and adherence to the quality standards system by the maritime schools in the Philippines. Frequency, mean and standard deviations were the descriptive statistics used and t-test, analysis of variance, stepwise multiple regression analysis and *Pearson's r* were the inferential statistics used. The participants' perceived the status of the quality standards system among maritime schools as 'strong'. The participants' perceived the compliance with and adherence to the quality standards system among the maritime schools as "very high". Location of school, enrolment size, faculty size, size of support staff, accreditation, position in school, work experience and educational preparation are significant predictors of the status, compliance with and adherence to the quality standards system in maritime schools. No significant relationships existed between the participants' perception of the compliance and adherence to quality standards system among maritime schools and personal-related factors.

## 1 INTRODUCTION

The maritime schools in the country today are faced with a challenge of quality and excellence in maritime education. The graduates of these institutions are expected to be globally competent and qualified to operate modern and fully automated international ships. This challenge comes from ship owners and countries whose vessels are of foreign registry.

In response to the challenge, members of the International Maritime Organization (IMO) came up with sets of policies, procedures, and guidelines as provided in the International Convention of Training and Watchkeeping for Seafarers of 1978 and 1995 (STCW '78; '95) for all member countries, including the Philippines.

Maritime schools are challenged to introduce the concept of assessing competence rather than evaluation of theoretical knowledge through written examinations. Training and assessment of seafarers under the Convention must be structured in written programs, including such methods such as media delivery, procedures, and course materials necessary to achieve the required standards of competence. There are defined procedures for training and assessment of competence, certification, and endorsement which are continually monitored through a quality system to ensure achievement of defined objectives, including those concerning the qualifications and experience of instructors and assessors.

Another challenge comes from the government and the maritime industry. At present, there are 299 manning agents licensed by the Department of Labor and Employment. The number of maritime schools has increased tremendously. From the initial number of 41, maritime institutions mushroomed to 111, accounting for an increase of 170.73%. It must be noted that, in 1994 alone, these schools graduated 43,918 deck and engine cadets (Aldense, 1995). However, are these graduates globally competent?

Section 35 of CHED Memorandum #51 dated 1997 (Article 13 (Quality Standards System), provides that "Every maritime school shall develop and implement a quality standard system in accordance with the provisions of the policies, standards, and guidelines." Section 36 of the same Memorandum informs that "Recognizing that Filipino seafarers shall be globally competitive, in compliance with the 1995 amendments to STCW '78 and other international laws and conventions, the school facilities, equipment and teaching competencies shall be upgraded to meet the quality standards."

Owing to the fact that the country's economy depends heavily on seafarers and the quality of seafarers depends on the quality of graduates that the maritime schools produce, the only way of ensuring the quality of graduates in maritime schools is to fully implement the quality standards system.

This study attempted to investigate the status of and compliance with and adherence to the quality

standards system among the maritime schools in the Philippines. According to Robbins (2001), perception is a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment. This study was anchored on the Gestalt Approach, called the Law of Pragnanz, which holds that an individual tends to perceive the simplest and the most stable figure of all possible alternatives (Shiffman, 1990, in McConnell and Phillipchalk, 1992). This study focused on the perception of the participants of the status of the quality standards system, and compliance with and adherence to quality standards system in maritime schools in the Philippines.

## 2 THE PROBLEM

This study aimed to determine the status of and compliance with and adherence to the quality standards system by the maritime schools in the Philippines. Specifically, this study sought answers to the following questions:

1. What is the status of quality standards system among the maritime schools in the Philippines as assessed by the participants? How do the responses of the sub samples differ?

2. What is the level of the participants' assessment of compliance with and adherence to the quality standards system by the maritime schools? How do the responses of the sub samples differ?

3. Are there significant differences on the status, compliance and adherence to quality standards system among the maritime schools when categorized according to personal related factors and school related factors?

4. Which among the personal and school related factors would be significant predictors of the status, compliance and adherence to QSS among the maritime schools in the Philippines?

5. Are there significant relationships between the status and compliance and adherence of QSS among maritime schools in the Philippines.

## 3 METHODOLOGY

The participants of the study were the 237 randomly selected employees of the 11 CHED-accredited maritime schools in the Philippines.

The participants of the study were classified according to personal factors—position in school, work experience, and educational preparation and school-related factors—enrolment size, faculty size, size of support staff, accreditation and location of school.

Table 1. Distribution of Participants

Category	f	%
A. Entire Group	237	100
B. Position in School		
Administrator	59	25.0
Faculty	118	50.0
Staff	60	25.0
C. Work Experience		
Shorter (5 years and less)	81	34.0
Longer (more than 5 years)	156	66.0
D. Educational Preparation		
Bachelor's Degree	172	72.5
Master's Degree	65	27.4
Doctoral Degree	1	0.1
E. Enrolment Size		
Smaller (1, 000 and less)	104	44.0
Larger (more than 1, 000)	133	56.0
F. Faculty Size		
Smaller (25 and less)	48	20.3
Larger (more than 25)	189	79.7
G. Size of Support Staff		
Smaller (25 and less)	104	44.0
Larger (more than 25)	133	56.0
H. Accreditation		
DNV	133	56.0
Other than DNV	104	44.0
I. Location		
Luzon	105	44.0
Visayas	82	35.0
Mindanao	50	21.0

### Statistical Tools

*Mean.* The mean was used to describe the status and compliance with and adherence to quality standards system by the maritime schools as assessed among the participants.

*Standard deviation.* This test was used to determine the homogeneity and heterogeneity of the participants in terms of the status of and compliance with and adherence to quality standards system among the maritime schools.

*t-test for independent samples.* This test was used to determine the significance of the differences among the variables with two-level categories.

*One-way Analysis of Variance (ANOVA).* This test was used to ascertain the significance of the differences among the variables with three or more levels of categories.

*Stepwise Multiple Regression Analysis.* This was used to determine which among the personal factors—position in school, working experience, educational preparation—and school-related factors—enrolment size, faculty size, size of support staff,

accreditation status—and location of school—are significant predictors of the status of and compliance with and adherence to quality standards system among maritime schools.

*Pearson's r.* This was used to determine the significance of the relationship between the status of and compliance with and adherence to quality standards system among maritime schools.

#### 4 FINDINGS

The participants' perceived the status of the quality standards system among the maritime schools as "strong". Significant differences existed in the participants perception when classified according to size of support staff, accreditation, work experience, position in school and location of school. No significant differences existed in the participants perception of the status of Quality Standards System when classified according to educational qualification, enrolment size and faculty size.

Table 2. Participants' Perception of the Status of the Quality Standards System in Maritime Schools

Category	M	Description	SD
A. Entire Group	5.63	Strong	1.15
B. Position in School			
Administrator	5.78	Strong	.79
Faculty	5.39	Strong	1.31
Staff	6.23	Very Strong	.85
C. Work Experience			
Shorter (5 years and less)	5.23	Strong	1.17
Longer (more than 5 years)	5.81	Very Strong	1.11
D. Educational Preparation			
Bachelor's Degree	5.68	Strong	1.15
Master's Degree	5.49	Strong	1.17
E. Enrolment Size			
Smaller (1, 000 and less)	5.57	Strong	.94
Larger (more than 1, 000)	5.66	Strong	1.23
F. Faculty Size			
Smaller (25 and less)	5.53	Strong	.98
Larger (more than 25)	5.67	Strong	1.15
G. Size of Support Staff			
Smaller (25 and less)	5.98	Very Strong	1.01
Larger (more than 25)	5.20	Strong	1.18
H. Accreditation			
DNV	6.12	Very Strong	.98
Other than DNV	5.23	Strong	1.13
I. Location			
Luzon	5.12	Strong	1.16
Visayas	5.95	Very Strong	1.19
Mindanao	5.86	Strong	.86

Generally, the participants perceived the compliance with and adherence to the quality standards system among the maritime schools as "very high". Significant differences existed in the participants' perception of the compliance with and adherence to Quality Standards System among the maritime schools when the participants were classified as to size of support staff, accreditation, work experience, position in school and location of school. No significant differences existed in the participants' perception of the compliance with and adherence to Quality Standards System among the maritime schools when classified as to educational qualification, school enrolment and faculty size.

Table 3. Participants' Perception of the Compliance with and Adherence to Quality Standards System in Maritime Schools

Category	M	Description	SD
A. Entire Group	5.79	Very High	1.09
B. Position in School			
Administrator	5.93	Very High	.78
Faculty	5.56	High	1.25
Staff	6.34	Very High	.65
C. Work Experience			
Shorter (5 years and less)	5.55	High	.98
Longer (more than 5 years)	5.90	Very High	1.12
D. Educational Preparation			
Bachelor's Degree	5.76	Very High	1.13
Master's Degree	5.49	High	.91
E. Enrolment Size			
Smaller (1, 000 and less)	5.82	Very High	.86
Larger (more than 1, 000)	5.79	Very High	1.18
F. Faculty Size			
Smaller (25 and less)	5.80	Very High	.88
Larger (more than 25)	5.79	Very High	1.15
G. Size of Support Staff			
Smaller (25 and less)	6.05	Very High	.90
Larger (more than 25)	5.46	High	1.2
H. Accreditation			
DNV	6.12	Very High	.90
Other than DNV	5.51	High	1.15
I. Location			
Luzon	5.45	High	1.2
Visayas	5.95	Very High	1.16
Mindanao	5.96	Very High	.71

Location of school enrolment size, faculty size, size of support staff, accreditation, position in school, work experience and educational preparation are significant predictors of the status, compliance with and adherence to the Quality Standards System in maritime schools.

Table 4. Summary of the Stepwise Multiple Regression Analysis for the Participants' Perception of the Status of the Quality Standards System among the Maritime Schools

Variables	Multiple R	R <sup>2</sup>	R <sup>2</sup> Change	B	SEB	Beta	F	Sig. F
A. Location of school	.187	.035	.030	.288	.111	.187	6.715*	.010
B. School enrolment	.361	.130	.121	.1285	.287	.153	13.762*	.000
C. Faculty size	.362	.131	.117	.138	.358	.052	9.182*	.000
D. Size of support staff	.452	.204	.187	.1034	.252	.446	11.676*	.000
E. Accreditation status	4.54	.206	.180	.106	.278	.047	9.326*	.000
F. Position in school	.471	.222	.191	6.913	.122	.039	7.795*	.000
G. Work experience	.498	.248	.215	.379	.151	.171	7.350*	.000
H. Educational preparation	.502	.252	.214	.183	.209	.065	6.615*	.000

There is a significant relationship existed between the participants' perception of the status of the Quality Standards System among maritime schools and personal-related factors. A negative significant relationship existed between the participants' perception of the status of Quality Standards System among maritime schools and school-related factors. A positive significant relationship existed between the participants' perception of the compliance with and adherence to Quality Standards System among maritime schools and location of schools. A negative significant relationship existed between the participants' perception of the Quality Standards System in maritime schools and size of support staff and accreditation. No significant relationship existed between the participants' perception of the compliance with and adherence to Quality Standards System among maritime schools and personal-related factors.

Table 5. Relationship Between the Participant's Perception of the Status of, Compliance with, and Adherence to the Quality Standards System Among the Maritime Schools

Variable	Perception of Compliance With and Adherence to the QSS		
	Among <i>r</i>	Maritime	Schools <i>r</i> prob
Perception of the Status of the QSS Among the Maritime Schools	.631*		.000

\*  $P < .05$

## 5 CONCLUSIONS

The "strong" perception of the implementation of the quality standards system among the maritime schools by the participants seems to indicate that the maritime schools are serious in turning out quality and globally competitive graduates in order to meet the requirements of the shipping industry and maritime institutions in compliance with the provisions of the Commission on Higher Education Memo. No. 51, the ISO 9000: 2000, and the International Convention of Training and Watch keeping for Seafarers (STCW '78; as amended by STCW '95). In addition, the maritime schools seem to showcase quality standards as a rigid requirement for certification, and accreditation by the Det Norske Veritas (DNV) and other accreditation agencies.

In addition, the country's inclusion in the "White List" might have triggered the maritime schools' commitment to quality standards, so that, their graduates could be employed anywhere in the world-whether in shipping or other maritime institutions. Foremost is the desire of the country to maintain its position in the list as a supplier of manpower for the world's shipping industry and other maritime institutions. The need, therefore, for quality graduates is the name of the game for maritime institutions.

The maritime schools in this research appear to have observed full compliance with and adherence to the quality standards system. This explains that, the country being the major supplier of seafarers in the international arena, the importance of quality should not be missed. In other words the maritime schools have obliged themselves to totally commit to quality standards.

The participants' better perception of the status of the quality standards system among the maritime schools is influenced by factors such as position in school, size of support staff, location of school, work experience and accreditation. The better perception of the standards system among the participants from the staff, those employed in schools accredited by DNV, and those with a longer work experience seems to indicate that to the participants' mind, being employed in schools and schools accredited by DNV as well as their having longer stint in school might have provided them with a better view of the schools quality standards system. As it is, striving for quality is their way of life.

School enrolment, faculty size, educational qualifications are factors found not to significantly influence the participants' perception of the status of

the quality standards system among maritime schools. This explains that, regardless of whether one is employed in a school with smaller or longer enrolment, faculty size, and size of support staff or whether one is a bachelor's degree holder, a master's degree holder, or a doctorate degree holder, one's regard for the status of the quality standards in maritime schools remains the same.

The participants' perception of the compliance with and adherence to the quality standards system among the maritime schools could be influenced by factors such as enrolment size, size of support staff, work experience, position in school and location of school. As revealed in the study, those employed in schools with smaller faculty size, with smaller support staff, had longer work experience, and the administrators and staff showed better perception of compliance with and adherence to the quality standards system among the maritime schools. These seem to indicate that less complex organizations coupled with longer experience and a position with higher authority can readily command better compliance with and adherence to the quality standards system, among the maritime schools.

Position in school, work experience, educational qualifications, enrolment size, faculty size, accreditation, work experience, and location of school were factors found to predict the participants' perception of the status of the quality standards system among the maritime schools. This indicates that the quality standards policy of the maritime schools as installed in their respective organization could already be gauged by the type of school, the size of enrolment, the faculty composition, the accreditation status, and the educational background of its faculty.

Enrolment size and work experience were factors found to significantly predict the compliance with and adherence to the quality standards system among the maritime schools. In other words, the maritime schools' compliance with and adherence to the quality standards system could be gauged by the size of their enrolment and the length of work experience of their employees.

## 6 RECOMMENDATIONS

The Commission on Higher Education may either design its own manual or adopt a quality manual from one of the better maritime institutions in order to have a common quality assurance manual among maritime institutions, to ensure standard assessment by the agency (CHED) or the certifying body itself.

Standard monitoring or audit must be conducted periodically among the maritime institutions to continually improve the delivery of services to its clientele, especially the quality of graduates the maritime schools turn out every year.

Maritime schools are encouraged to: (1) review from time to time the different provisions in its manual to see its appropriateness brought about by technology changes; (2) consistently design a program how to satisfy and motivate its personnel (teaching and non-teaching) so that this personnel will unselfishly dedicate themselves to the welfare of their clientele and to a greater majority in the organization; (3) design a reward system to motivate its personnel who have committed themselves to the mission and vision of the school; (4) commit themselves to the upgrading/training of their teachers; (5) forge tie-up with other maritime institutions locally and internationally to share experiences and even resources (financial and human) to be able to meet the demands of the industry; (6) maximize participative management--involve all the members of the community especially on matters where the welfare of the personnel (teaching and non-teaching alike) is at stake; and (7) aim to continually improve service provided among its clientele especially the students and the end-users of their graduates, the shipping companies.

The different maritime institutions in the country, therefore, may utilize the data-gathering instruments used in this research as bases for ascertaining the status, compliance with and adherence to quality standards system in their operations.

To fully cooperate and involve themselves in future collaborative research in order for maritime schools to be more productive.

Conduct research on the total quality management of maritime schools to get a clearer and better picture of the performance of the graduates of the different maritime schools.

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