



FACTORS RELATED TO PROFESSIONAL DEVELOPMENT OF BANGLADESHI MARINERS

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ABSTRACT

Bangladesh is traditionally a maritime nation having a long tradition of producing sound and skilled maritime professionals. However, in recent times Bangladesh started falling behind her contemporaries in creating qualified seafarers for occupying global seafaring job opportunities. There is a need to identify the factors related to the development of maritime professionals. Exploratory factor analysis was applied to explore the factors which are important for the development of the maritime professionals in Bangladesh. Six factors were extracted through the factor analysis. The factor solution presents the challenges faced by Bangladeshi mariners. The government needs to actively address the identified issues. Bangladesh has a good opportunity to expand its share in the maritime labor market meeting international standards as talent is abundant in this highly populated country. The paper concludes by providing the suggestive measure to overcome the challenges faced by Bangladeshi maritime professionals.

Key words: Challenges, Bangladesh, Marine, Mariner, Professional Development

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1. INTRODUCTION

Bangladesh has traditionally been a maritime nation contributing to the residents' source of employment and livelihood. This has led to a long tradition of tailoring sound and skilled maritime professionals in the country (Kabir, 2014). But with the development of technology,

Bangladesh started falling behind her contemporaries in creating qualified seafarer for occupying global seafaring job opportunities (Saha, 2016).

Bangladesh's dependence and attachment to oceans, seas, and rivers are so impetuous that it seems that the world means water to them (Ziauddin, 2017). The country has a good opportunity to expand its share in the maritime labor market, meeting international standards as talent is abundant in this highly populated country. The country however faces a high rate of unemployment, which brings distress to the overall development in the nation. Rahman (2017) studied how Bangladesh being one of the littoral states of the Bay of Bengal region helped out to reduce costs and help meet technological requirements of developing nations.

The growing shortage of seafaring officers fueled by the rapid growth of the global fleet provides an excellent opportunity to ace in maritime manpower development (Hassan, 2006). However, the country lacks a strong presence in the maritime labor market. Seafarers trained in Bangladesh are relatively skilled, more hardworking, and have traditionally been recognized as good seamen (Kabir, 2014). ESCAP report highlight that good behavior, sincerity, trustworthiness, English-speaking ability, satisfaction with low wages, non-addiction to alcohol, and high moral courage as the strength and special qualities of Bangladeshi seafarers (ESCAP,2003). Bangladesh has the potential to substantially increase the number of seafarers employed internationally which can be achieved by providing an ideal learning environment with all the hard and soft facilities required for effective education and training (Kabir, 2014).Hence, there is a need for a research study exploring the factors responsible for the development of maritime professionals in Bangladesh and to draw the attention towards the challenges that needs to be curbed to develop maritime professionals worthy of being recruited on international ships.

2. LITERATURE REVIEW

2.1 Development of Maritime Professionals in Bangladesh

The global demand for maritime professionals has been originated from the demand for maritime transport influenced by government, financial sectors, and technology (Wagtmann and Poulsen, 2009). Employers look for skills like comprehensive knowledge, problem-solving skills, responsibility and accountability, leadership qualities, proficiency in English, physical fitness, and soft skills when recruiting seafarers (Kabir, 2014).

Gani (2016) stated that Bangladesh has an illustrious background in maritime activities worldwide. Bhuiyan (2015) mentioned that Bangladeshi seafarers are finding it difficult to procure jobs in foreign ships due to the use of false certifications. With radical technical innovation, ships are becoming more automated with the numbers of crews reducing. It is getting complicated to predict the combination of knowledge, understanding, and proficiency required to produce professionals for the functioning of ships for safe operations as claimed by IMO (Kabir, 2014). Short (1996) addressed the major concerns that the pool formed from seafarers from multiple countries come with their qualifications issued from their respective authorities with substantial standards resulting in a multicultural environment in the ship. Opportunity remains for all maritime nations where the MET institution's reputation is important and helps to attract the recruiter. Ahad (2009) asserted that in Europe and the UK there will rarely be any increase in seafarers. As per UNCTAD (2006 and 2012) report in their yearly edition of Review of Maritime Transport, in 2006, the number of Bangladeshi vessels was 1271 in 2012 indicating the requirement of maritime professionals, providing Bangladesh the opportunity to develop maritime professionals in their ship following government rules of recruiting national seafarer under the Bangladesh Flag Vessels (Protection) Ordinance, 1983 (DoS, 2016).

Alamgir (2001) commented that sustainable development cannot be achieved without a skilled workforce. Here, Maritime Education and Technology (MET) comes in action providing necessary teaching, research, and resources for sustainable development. However, lack of synergy between public and private institutes, lack of policies, absence of a central controlling body, and shortage of qualified trainers are some threats to MET in Bangladesh. Shemon et al. (2019) studied and analyzed the shipping industry in Bangladesh and found employees as one of the most powerful resource for companies operating in this industry to enhance their competitive advantage in an ever changing business environment. To avoid miss happenings a high attention must be paid while recruiting personnel to maintain quality and safety of maritime operations. Thus, entire skill development program should be such that where holistic system approaches of management is followed.

According to Shemon (2005), Bangladesh can offer the best in quality, productive, and cheap labor with its young workforce. However, the productivity of Bangladesh is the lowest among its contemporaries, skilled manpower required for shipbuilding and allied industries are falling short. Concerned authorities need to make timely jumps on opportunities and generate adequate demand in the domestic and international markets with improved engineering skills.

2.2 Challenges Faced in The Development of Maritime Professionals in Bangladesh

Barsan (2003) revealed a concerning lack of interest in the maritime profession due to change in the environment of the maritime industry, possibly due to the flag of convenience –FOC and low cost of Asian seafarer along with pressure by IMO.

The seafaring jobs are global; hence it is necessary to apply the internationally recognized standards including STCW, MLC that are guided by respective agency or direction from IMO (Hassan, 2006; Kabir, 2014; Saha, 2016). In Bangladesh, only Marine Academy has the quality that matches international standards whereas private MET institutions have more of a business approach instead of quality development of maritime education (Saha, 2016). It is reported that the Maritime Administration of Bangladesh has approved only 20 private marine academies up until now (Hassan, 2006). Hussain et. al. (2019) studied the maritime activities in Bangladesh and highlighted its future importance along with current maritime issues and challenges. A coordinated approach including all stakeholders is required in the country to promote use of resources in an optimum way.

According to Rabbi and Rahman (2017), lack of safety and first aid for labors, inhumane conditions for workers and workers being stripped off their human rights are issues common in Bangladesh. To retain the top position in ship-breaking, Bangladesh needs to upgrade the policies, infrastructure for waste management, and work on the health issues of workers. Rahman (2017) acknowledged that the ship-breaking industry plays a significant role in the economy of Bangladesh, the country alongside India and Pakistan contributing 70-80 percent in the ship- breaking business. However due to lack of establishment of any separate guidelines or code of conduct for ship-breaking, often there are accidents, loss of valuable lives, and serious violation of labor rights.

Iqbal et al. (2010) recommends utilizing the country's labor-intensive approach to solve maritime industry issues and encourage innovation in the sector. The government should reform its policies and collaborate with private bodies to attract professionals and reduce staff turnover. The government should establish some shipyards along the river Karnaphuli or at the Chittagong port area to attract more international companies. Zakaria et al. (2010) found that Bangladesh has an upper hand in terms of capable, low-cost labor but is weakened by inefficient management leading to low shipbuilding productivity. There is a need to focus on employment expansion and higher revenue earnings.

Hassan et al. (2017) analyzed the scenario of the Foreign Direct Investment (FDI) in Bangladesh Shipbuilding industry offers an opportunity for foreign associations and investment. However, the relative competitiveness of Bangladesh as a low-cost production center in South Asia has yet to attract any FDI, unskilled labor being one such issue. Hossain and Zakaria (2017) reported that the growth of the shipbuilding industry is affected by competition, environmental regulations, globalization, and political and financial stability. It is forecasted that over the next decade, the maritime sector would go through changes in global demographics, population growth rates, long –term economic growth in developing markets.

According to Hussain (2017), due to lack of coordination, implementation, and enforcement of management strategies by government bodies, many opportunities in marine resources development remained untapped. The study recommends cross-sectional coordination between academics, public and private institutions.

The majority of the MET related respondents found the standards of private maritime academies to be below the desired level of infrastructure and training facilities. There is a need for adequate and updated MET infrastructure and instructors with a credible assessment and certification process, proof of quality production (Kabir, 2014). Bangladesh Inland Water Transport Authority and the Port Authorities of Bangladesh run two Deck and Engineering Personnel Training Centre which conducts internship and in-service courses. The Chittagong Port Authority and The Mongla Port Authority have also been providing professional courses and on the job training to all categories of port officials and users (Ziauddin, 2017). Marine academy and Marine Fisheries Academy are developing quality offices for Navigation and Engineering department for seagoing vessels. The country is still far off from its global competitors in terms of updates infrastructure ports and offices (Saha, 2016). Alamgir & Chowdhury (2019) studied the potentials of Bangladesh's maritime education (ME) in contributing to the national economic growth (NEG). Due to inadequate ME, Bangladesh lacks in every marine activity except for fishing to some extent. Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU) being the only specialized university.

Ziauddin (2017) remarked that most of the policymakers in Bangladesh still ignore maritime necessities. The Government's approval for new Marine Academies to be established has yet to begin. Government MET institutions don't have an external evaluation by classification societies (Kabir, 2014). Visa restriction for Bangladeshi seafarers is another issue where the government is failing to take immediate action. Lack of government initiatives to form a standard curriculum for training academies loses opportunities for job and training facilities for men (Saha, 2016). Hassan (2006) suggests that the domestic push of surplus seafaring officer calls for proactive diplomacy by the Bangladesh government.

Gunbeyaz et al. (2019) studied the current status of ship recycling yards in Bangladesh and identified the need for the enhancement and development of training for workers. With help of data collected and analyzed, gaps were identified in the current training of employees in this sector with those of international requirements. To improve this sector, it requires legislators, associations, and the responsible persons of facilities needs to understand the importance of proper training needs.

Islam et al. (2019) studied the major issues behind the unemployment of Bangladeshi seafarer and found causes behind it. With the data collected and analyzed, it was found that the reasons for country's seafarers' unemployment are shortage of national flag vessel, bad reputation of Bangladeshi seafarers in the global market, low standard of Maritime Education and Training.

Public and private institutions fail to synergize their capabilities to work towards the development of maritime professionals. Kabir (2014) stated that breakdowns in communications cause many accidents at sea. Adequate knowledge of the English language is

required to enable the officers to use charts and to communicate with other ships and coast stations consisting of a multilingual crew. Saha, (2016) revealed that all METs of Bangladesh are conducting the course in English that helps in facing the challenge of communication onboard and attracting recruiters.

The literature appears to be weak and the concept has not been carried forward by the researchers despite its importance in the economy of Bangladesh. Hence, it is important to understand it; to know the factors necessary for the development of maritime professionals. Therefore, this study's main purpose is to identify the factors through factor analysis which are essentially required for the professional development of the Bangladeshi mariners. The factors have emerged in terms of challenges; Thus this study aims further to provide suggestive measures to overcome those challenges.

3. METHODOLOGY ADOPTED

The prime objective of the study is the exploration of the factors essential for the development of maritime professionals in Bangladesh as the country is bestowed with abundant water resources. Marine industry is crucial for the country's economic development. Further, study would suggested the ways to overcome the impediments to the employment of Bangladeshi mariners.

The literature review highlighted that a smaller number of studies have been done on the concept of maritime professional development in Bangladesh. Hence, to know more about the concept an exploratory study was undertaken (Green, Tull & Albaum, 2014. p. 97). Exploratory factor analysis was employed to identify the factors related to the development of Maritime Professionals in Bangladesh.

3.1 Instrument Development

Eighteen item statements were developed for the questionnaire. Questionnaire was developed based on the variables extracted from the review of literature and researcher's rich industry experience. A five-point Likert scale was used to measure all item statements. The scale point is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree. Likert scale is uncomplicated and time-saving in comparison to other attitudinal scales like the Thurstone scale (Beri, 2008). The nominal scale was used to measure demographic details of the people including age, gender, and education. In the Nominal scale, "the number serves as labels to identify person, objects or events" (Beri, 2008).

3.2 Sampling Procedures

Judgmental sampling or purposive sampling i.e., selecting cases judged to represent the population focused on reckoning the errors of judgment in the selection to compensate for one another (Judd et al., 1991) has been used to select the sample.

The data was collected from the professionals working in the maritime industry of Bangladesh. The study was conducted in the sea area of Chittagong, Dhaka, Khulna, Barisal where maritime professionals and policymakers have significant presence and maritime-related institutions were situated. Bangladesh being a seafaring nation with a history of producing maritime professionals, the maritime industry plays a vital role in contributing to the economy of Bangladesh (Alamgir, 2001; Hassan, 2006; Ziauddin, 2017).

3.3 Validity and Reliability

Content validity of the scale was achieved by the expert evaluation of the research instrument (Malhotra & Dash, 2011. p. 280). Construct validity was attained through the exploratory factor analysis. Convergent validity, discriminant validity was confirmed through the rotated component matrix. Reliability was inspected through Cronbach Alpha coefficients value.

4. DATA ANALYSIS

An exploratory factor analysis was undertaken to achieve the study's prime objective. Variables under study are examined to obtain the highlighted factor (Chawla & Sondhi, 2011). It is useful to reduce a large number of variables into fewer manageable factors (Ibid). The rotated component matrix is as under:

Table 1 Rotated Component Matrix

	Factors					
	1	2	3	4	5	6
Q7	.812	.035	.025	.077	.007	.104
Q8	.637	.104	-.039	.415	-.040	.080
Q9	-.025	.156	.566	-.355	-.069	.191
Q10	-.049	.165	-.301	-.024	.629	.140
Q11	.321	-.154	.268	.407	.346	.034
Q12	.294	.063	-.021	.722	-.262	.031
Q13	.767	.004	-.052	.098	.011	.166
Q14	.163	.718	.010	.077	-.129	.179
Q15	.066	.089	.720	.295	.031	-.010
Q16	.162	.658	.126	-.160	.237	-.188
Q17	.439	.004	.151	.053	.614	-.206
Q18	-.057	.095	.715	-.043	.041	.185
Q19	.124	.099	.102	.110	.130	.758
Q20	-.278	.535	.427	-.060	-.117	.079
Q21	.038	-.014	.011	.699	.332	.093
Q22	-.442	-.047	.188	.147	.596	.083
Q23	.142	.062	.184	-.012	-.066	.808
Q24	-.067	.778	.083	.063	.093	.116

4.1 Factor Development

The First factor comprises Q7, Q8, and Q13 with factor loadings 0.812, 0.637, and 0.767 respectively. Q7 represented that good quality of marine education is accessible in Bangladesh. Q8 states that maritime institutions of Bangladesh are capable of producing good and trained Seafarers complementing world standards. Q13 focuses on the deteriorating reputation of Bangladeshi mariners in the global market due to fraudulent certificates. All the statements are associated with maritime education in Bangladesh. Hence, the factor is named as 'Marine Education'.

The Second factor comprises Q14, Q16, and Q20 with factor loadings 0.718, 0.658, and 0.535 respectively. Q14 states that community conflicts like superior complexity among Bangladeshi mariners is a factor of developing maritime professionals in Bangladesh. Q16 states that the concealment of Bangladeshi mariners from various foreign ports hurts the image of Bangladeshi mariners & discourages overseas employers to recruit Bangladeshi mariners. Q20 indicate that publicity and information of the Department of Shipping and Maritime institutions of Bangladesh is enough to attract students to take up education and understand the future of a sea job as a good profession. The third statement is not in line with the earlier two

statements, hence the factor is comprised of only Q14 & Q16. Both statements indicate that they face behavioral issues while employed abroad. Hence, the factor is named as ‘Behavioral Issues’.

The Third factor comprises three questions Q9, Q15 & Q18, with factor loadings 0.566, 0.720, and 0.715 respectively. Q9 tells about the accessibility of well-trained maritime teachers. Q15 is about managing the issue of competency of sectorial maritime due to the absence of sectorial marine controlling offices. Q18 expressed that an obstacle for the growth of maritime professional development in Bangladesh is the management problem as a whole. Thus, this factor has been named as ‘Competency’.

The Fourth factor comprises Q11, Q12, and Q21 with factor loadings 0.407, 0.722, and 0.699 respectively. Q11 presents the deficiency of Bangladeshi flagged ships. Q12 is related to concerns about VISA issues faced by Bangladeshi mariners. Q21 describes the government’s attempts with assistance from specialized maritime personnel to develop the Bangladeshi maritime sector. These statements are considering the issues which are required to be adequately and accurately attended by the government. Hence, the factor is named as ‘Role of Government’.

The Fifth factor comprises Q10, Q17, and Q22 with factor loadings 0.629, 0.614, and 0.596 respectively. Q10 specifies that the application of international standard MET is a daunting task for the development of maritime professionals in Bangladesh. Q17 signifies that overindulgence in religious duties by Bangladeshi mariners is disliked by the seniors. Q22 explains that the present standard in Bangladesh maritime sector is capable of attracting international Ship-owner or Ship Management companies to recruit Seafarer from Bangladesh. The statements highlight the significance of international standards and professionalism of mariners for their professional development. Hence, the factor is named as ‘International Standards’.

The Sixth factor comprises Q19 and Q23 with factor loadings 0.758 and 0.808 respectively. Q19 states that the Department of Shipping, Bangladesh is monitoring the maritime institutions for preserving the quality of education and quantity of students to maintain the supply-demand of Seafarers. Q23 states that checking &controlling cells in various airports & seaports have the potential to stop fake certification of Bangladeshi Mariners. Both the statements are focusing on the concept of quality; hence the factor has been named as ‘Quality Check’. Conditions of Exploratory Factor Analysis (Refer Chawla and Sondhi, p. 561):

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.672
Bartlett's Test of Sphericity	Approx. Chi-Square	523.133
	Df	153
	Sig.	.000

- Requires Metric Data: All the data was collected on a 5-point Likert scale (Interval scale).
- Standardization: All the statements were measured utilizing the same scale; hence standardization was maintained in collecting responses.
- Sample Size ought to be more than four to five times of the statements. The sample size in the study was satisfactory in this relation, as 18 statements were utilized and the sample size was 143 The basic concept behind the application of factor analysis is that the initial set of variables ought to be highly correlated. The test is carried out

by using Bartlett’s test of sphericity, which considers the determinant of the correlation matrix. The test converts it into a chi-square statistic with degrees of freedom equal to $[k(k-1)/2]$, where K is a number of variables on which factor analysis is applied. The significant level in the above table shows the p-value as 0.000 that fulfills this condition.

- KMO statistics should lie between 0 to 1 and it should be greater than 0.5. KMO value is above 0.672 which reflects sample size adequacy.

4.2 Content Validity of the Questionnaire

Through the extraction of variables from the literature, the research instrument was developed, then drafted and corrected twice based on the discussion with subject experts (Green, Tull&Albaum, 2014; p. 250). Thus, establishing the content validity of the questionnaire (Malhotra & Dash, 2011).

4.3 Construct Validity of the Questionnaire

Construct validity has three components - convergent validity, discriminant validity & nomological validity. (Malhotra and Dash, 2011; p. 280), defines convergent validity as “a measure of construct validity that measures the extent to which the scale correlates positively with other measures of the same construct”. They defined discriminant validity as “a type of construct validity that assesses the extent to which the scale does not correlate with other constructs from which it is supposed to differ”. The strength of factor loadings within one construct proves convergent validity but it shows the items weakness with respect to other constructs. This weakness proves the discriminant validity for all the factors. Nomological validity predicts the similarity of the scale with theoretical ways (Malhotra & Dash, 2011; p. 280).

4.4 Reliability Analysis

Table 3 Reliability Statistics

Cronbach's Alpha	N of Items
0.673	18

For the questionnaire, Cronbach alpha value was calculated in SPSS, achieving an adequate level of alpha value presented in the data analysis section. Cronbach’s alpha is used to indicate internal consistency or homogeneity of a scale, i.e. similar behavior of the items on the test (Tappen, 2010). The value of Cronbach alpha near to 1 as it lies between 0 to 1 shows good reliability and scale consistency (Gliem & Gliem, 2003). Thus, it can be said that scale is reliable and have greater internal consistency.

4.5 Profile of the Study Respondents

All the Respondents were males there was no female participant in the survey. This indicates a lack of female employees in the maritime industry. It implies that the maritime industry is traditionally a man’s trade. It provides no point of view of female maritime employees and their development in the maritime industry. It shows gender disparity existing in Bangladeshi maritime industry

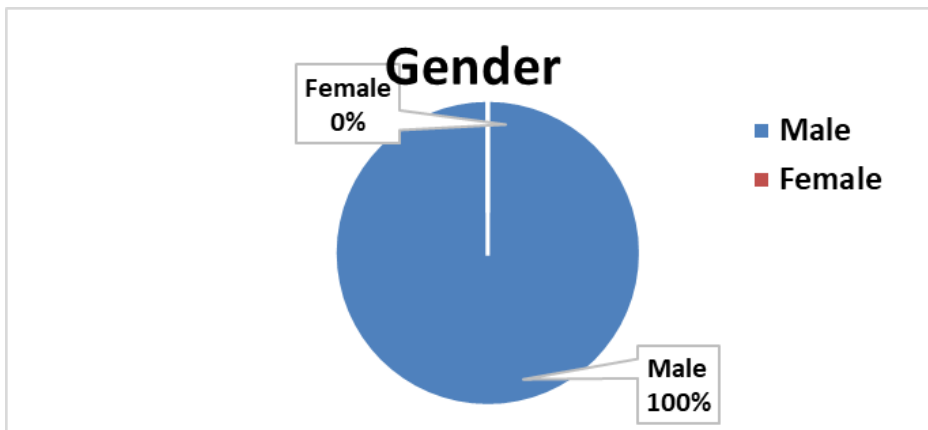


Figure 1 Gender of the study respondents

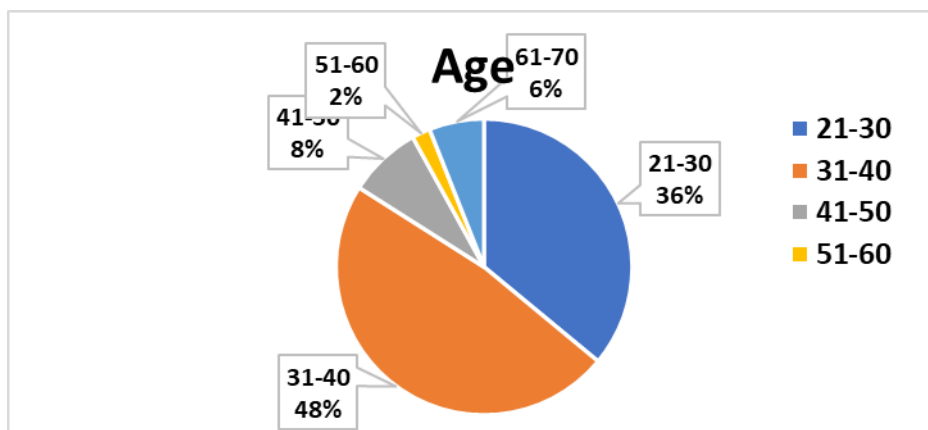


Figure 2 Age of the study respondents

The majority of the participants responding were lying between the ages of 31-40 is 48%. Though the respondents belonged to different age groups. As there are greater number of middle-aged men participating in the study, they had more experience and mature point of view on the policies and regulations in regards to maritime work. Secondly, a good number of people are young and able to do the rigors of seafaring, this could be the reason for more criticism towards maritime institutions, where many have freshly graduated from.

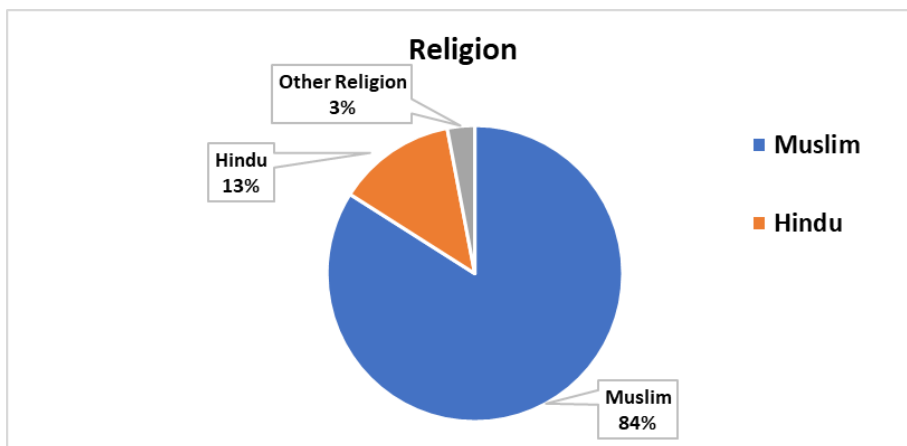


Figure 3 Religion of the study respondents

Majority of the participants, 84% were Muslims mirroring the country’s religious composition following which were Hindus at about 13%. Remaining 3% of the respondents

belonged to other religions. This indicates a more homogeneous population in the industry and can act as a block in intercultural exposure 56% of the respondents had a graduate degree, with 40% having a master's degree. Only 4% of the respondents had M. Phil. or Ph.D. degree. Perhaps this indicates a graduate degree as enough to proceed with a professional maritime career.

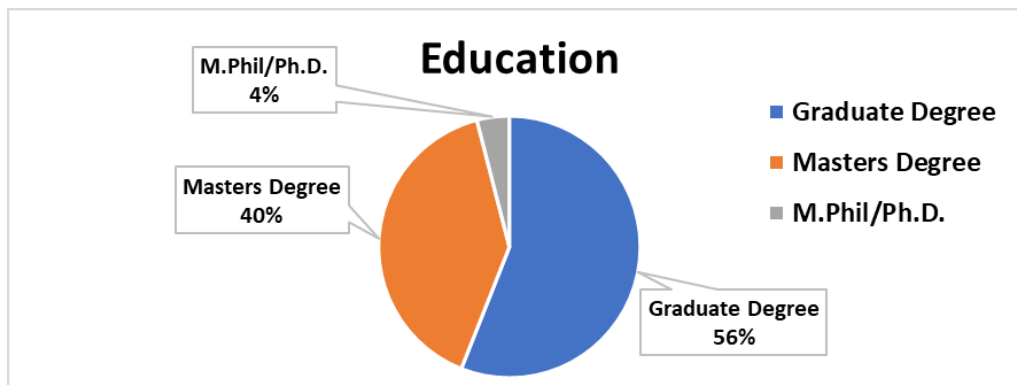


Figure 4 Education of the study respondents

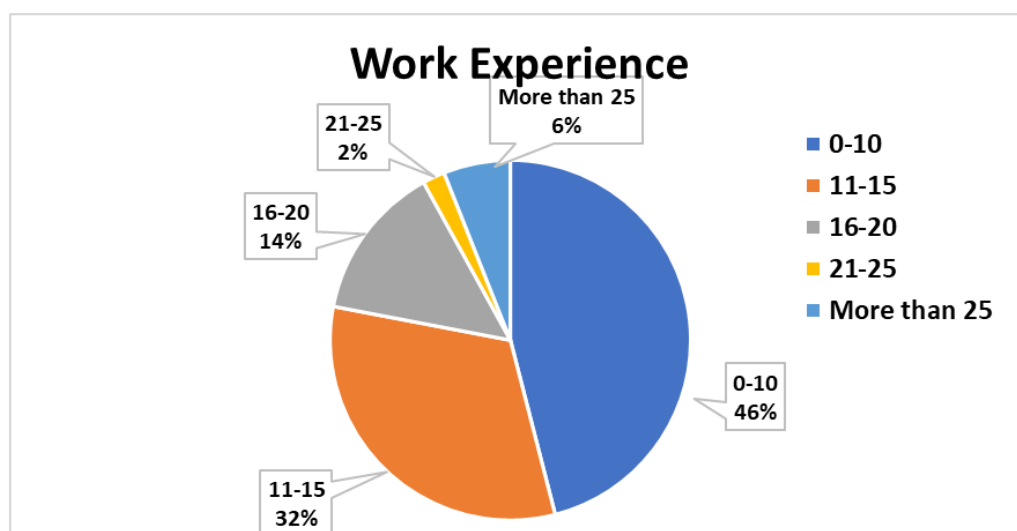


Figure 5 Work Experience of the study respondents

46% of the respondents had work experience between 0-10 years, making up the majority. 32% of the respondents had 11-15 years of experience. This indicates towards the presence of young workforce in the maritime industry with potential to develop and build up their skills. 14% of the respondents had 16-20 years of experience. Only 2% of the respondents had work experience of 21-25 years. However, 6% of the respondents have experience over 25 years, presenting that the respondents have adequate and sound knowledge about the industry.

4.6 Handling the Challenges

First challenge indicates that good quality maritime education is not available in the country and this needs to be rectified by applying international standards education to provide good quality education. Maritime Affairs Unit of MOFA could be converted into Ministry of Maritime Affairs, so that it will be easy to take integrated program on maritime affairs. Concerned ministry and agency can introduce attractive entry level compensation package for well-educated teachers, which leads to upgrade the education quality (Alamgir 2001). As it seems that education can give the competitive edge, Bangladesh government should conduct

undergraduate and post graduate program because well-trained and educated human resources acts as the driving force for the development of an economy. Behavioral issue is considered as another challenge which acts as hurdle in productivity and it creates conflict. Proper investigation and study should be done to understand the different cultural norms. There is a need for training and development. Another challenges identified is competency. There is a need to have competent trainers in Bangladesh's marine industry, which can provide updated international standards maritime education.

In past, shipbuilding industry of Bangladesh failed to keep speed with consistency because of lack of proper government. Government should come up with different and attractive policies. New and advanced technology should be emerged. Bangladeshi shipbuilding needs a support from government; therefore, they should come up with regulatory framework to support ship building and maritime industry. Quality is the prime requirement of shipbuilding industry. Quality in a shipyards generally maintain by quality control group of shipyard itself. Now-a-days quality is very demanding and everyone in the system must be dedicated. More number of future research is required to define quality in maritime industry

5. DISCUSSION AND CONCLUSION

Extending the existing literature, this study aimed to find the factors affecting the development of maritime professionals in Bangladesh and the challenges that need to be overcome. Item statements were developed through borrowings from the literature. Six factors identified through EFA are 'Marine Education', 'Behavioral Issues', 'Competency', 'Role of Government', 'International Standards', and 'Quality Check'. Future research should work towards the development of a generalized scale of the factors related with the development of maritime professionals. The development of maritime professionals is important for the country in order to grab employment opportunity, so that mariners feel satisfied and successful (Kabir, 2014). The second objective highlighted challenges which were identified through intense review of previous researches on maritime industry and profession that needs to be worked on such as inadequate human and technological resources in teaching and training, lacking infrastructure and training vessels, failing to produce professionals matching up to international standards, lacking government support, and facing unfavorable policies (Ziauddin, 2001; Hassan, 2006; Kabir, 2014; Saha, 2016).

It is recommended to follow the STCW, MLC-2006, and other conventions of IMO to supply the demand of recruiting or manning agency. MET institutions could be affiliated with Bangabandhu Sheikh Mujibur Rahman Maritime University. Department of Shipping should handle the certification of seafarers and monitor the quality and standard of all MET institutions by issuing category certificate as per norms. Further, stringent vigil is needed for cadet admission, infrastructure of the institution, training equipment availability and teaching procedures. Government should take immediate action to solve the seafarer's visa problems. Focus should be laid on producing good quality teachers and instructors in all MET institutions and arrange necessary training, workshop and offer scholarships. All MET institutions of Bangladesh should try to build relationships with foreign established MET institutions to get the standard curriculum, teaching technique, or exchange student for making the international standard of MET. The employees should be trained to handle the rapid adoption of automation jobs (Alamgir, 2001; Hassan, 2006; Kabir, 2014; Saha, 2016; Ziauddin, 2017).

The findings are useful for the researchers and government to understand that maritime professionals in Bangladesh have got higher competitive advantages concerning her seafaring officers in comparison to many other nations on a global scale (Hassan, 2006). Commitment to quality in MET will increase the desirability of Bangladeshi seafarers. It is necessary to ensure

that global standards are in place to train and certify seafarers to operate technologically advanced ships in a safe, secure and environmentally friendly manner, taking into account the technical developments, stricter safety awareness and social obligations in the maritime industry that require new shipboard competencies (Kabir, 2014). The government should take immediate action to solve the seafarer's visa problem (Hassan, 2006; Kabir, 2014; Saha, 2016).

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