

# THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

## Impact of Training and Education on Shipping Staff in the Nigerian Maritime Industry

**Kingdom Bello**

Lecturer, Department of Logistics and Transport Technology,  
The Federal University of Technology, Akure, Nigeria

**Mogbojuri Oluwagbenga**

Lecturer, Department of Maritime Transport Studies,  
Maritime Academy of Nigeria, Oron, Akwa Ibom State, Nigeria

**Michael Amushitan**

Master's Student, Department of Project Management,  
The Federal University of Technology, Akure, Nigeria

### **Abstract:**

*Training and Education play a significant role in human capacity development in which maritime industry is not an exception. Despite this, knowledge gap still exists which mar port performance and productivity. This paper is set out to examine the impact of training and re-training in the Nigerian maritime sector. Simple random sampling technique was used in which three hundred questionnaires were distributed to respondents. It was revealed that strength of the association between off-shore staff training and education ( $r=-.423^*$ ,  $p<.000$ ) and shipping sector operational effectiveness is weak but significant. It was concluded that training and education bridge the knowledge gap which improve the competence of staff in terms of intellectual input (creativity and innovation) and directly influence the shipping sector with the aim of maximizing and improving the shipping sector operational effectiveness.*

**Keywords:** Training and education, on-shore staff, off-shore staff, maritime industry

### **1. Introduction**

Shipping or maritime sector is critical to the advancement of any nation accessible by water. It contributes significantly to the Gross Domestic Product of a nation (Mogbojuri, 2020). Nigeria accounts for more than 60% of all maritime transport in terms of quantity and value in West Africa and Central Africa (Emmanuel, 2018). Although, the shipping sector is dynamic in nature, services rendered form a vital component of international trade. Therefore, Manpower development becomes important in achieving port efficiency and productivity (Ndikom, 2015).

Training and education play a crucial role in any sector of the nation. Training involves learning new on-the-job skills required for a particular job. Effective training programs typically include a combination of instructor-based interventions and hands-on experience to help practice newly acquired skills and knowledge, but training enhances employee thinking and judgment while education focus on more theoretical knowledge. Its importance cannot be overemphasized in the shipping sector as it aids the shipping sector to achieve better results. It ensures that staffs are well equipped and ensure that staffs are socially integrated and productive in their roles (Simon and Ben 2015).

Many researchers such as Schmied, Borch, Roud, Berg, Fjørtoft, Selvik and Parsons, (2014) focuses on the need for competencies related to large-scale Search and Rescue operations (SAR operations) amongst the shipping companies, vessels and governments involved. A SAR operation is the activity related to finding and rescuing people in distress. El Ashmawy (2015) draw attention to raise awareness of shipping professionals in the shipping industry to human element issues focusing simultaneously on the pros and cons of the issue. The study also tries to justify why almost all accidents are only attributed to the "human element". It aims at highlighting the proper perspective for understanding how far "the human element" contributes value across maritime industry. Goran, Milosavić and Bošnjak (2016) provide an insight into the human resources management in companies involved in logistics in shipping transport i.e., delivery and transport of goods. Taking into account their differences, it can be concluded that companies in the maritime industry have different human resource management systems, which affects the company's business. The research methodology is based on the collection of data through questionnaires and databases created from them. The study included a total of 31 companies. According to the collected data, statistical analysis will be conducted which will be based on correlation and descriptive statistics. The analysis of the theoretical basis has not confirmed the existence of similar studies that take into account the observation of human resources management on ships. Therefore, it can be concluded that the research will be of interest for the field of business logistics as well as the whole scientific and professional community. Recommendations related to the current and future human resource management in maritime companies will be given in the conclusion. None has

considered the impact of training and education of shipping staff to bridge the knowledge gap which improve the intellectual input (creativity and innovation) that enhance shipping sector operational effectiveness.

## 2. Literature Review

### 2.1. *The Shipping Sectors*

The shipping industry is much more than the deep-sea merchant fleet. It includes port and terminal operations, shipbuilding and repair, naval architecture and marine engineering, seaman training, tug and barge operations, pilotage, forwarding, chartering, government programs and shipping, intermodal services, maritime law, passenger and excursion services, vessel classification, marine insurance, communications, recreational boating and yacht, and much more (El Ashmawy, 2015). According to Dervojeda, (2012) shipping industries include all enterprises engaged in the business of designing, constructing, manufacturing, acquiring, operating, supplying, repairing and/or maintaining vessels, or component parts thereof: of managing and/or operating shipping lines, and customs brokerage services, shipyards, dry docks, marine railways, marine repair shops, shipping and freight forwarding services and similar enterprises. There are different categories of maritime professionals such as port managers, maritime officers, engineers, economists, lawyers, shipbrokers, charterers, and naval architects (El Ashmawy, 2015)

The shipping industry in broadest terms, includes all enterprises engaged in the business of designing, constructing, manufacturing, acquiring, operating, supplying, repairing, and/ or maintaining vessels, or component parts thereof: manning and/or operating shipping lines, stevedoring and customs brokerage services, shipyards, dry-docks, shipping and freight forwarding services and similar enterprises (El Ashmawy, 2015). Shipping is certainly the most international of the entire world's enormous industries; it is devoted to moving goods or passengers by water. Shipping is a peculiar, highly competitive business and services industry. It remains today what it has been for centuries; the most important, the safest, the cheapest and the most environmentally friendly way of moving goods over long distances. It has been a crucial link by which commercial relationships have been established. Also, shipping provides a safe, healthy, and secure work environment "so that people want to work in shipping, where they can enjoy rewarding careers and achieve their full potential" (El Ashmawy, 2015).

### 2.2. *Elements of Human Resources in the Shipping Industry*

The human resources elements in the shipping industry include:

#### 2.2.1. Science, Engineering and Technology

Marine science engineering and technology are about future durable use of the seas. Design of ships, boats and other offshore structures is one key field of activity. Qualified marine engineers excogitate propulsion and control systems for ships, oil platforms, underwater and offshore vehicles and much more such as dynamic positioning "DP". Other professions include naval architects who specialize in the design, construction, conversion, repair, surveying and decommissioning of ships, boats and offshore structures. Offshore engineers design and produce fixed and floating offshore oil production installations (EU NAVFOR, 2015).

#### 2.2.2. Maritime Business

The shipping business employment field includes marine insurers, shipbrokers, accountants, bankers, vessel financiers and charterers, ship managers and port managers.

#### 2.2.3. Sea going and Ports

The ports sector includes ports, harbours, container terminals, stevedoring companies and specialist labor supply organizations. Harbor masters, marine pilots, and operators of vessel traffic services are employed to ensure the safe navigation of ships in harbor waters. Port operators are engrossed in ensuring that freight is moved efficiently from a ship moored at the quayside directly to its intended location. Engineers are employed to ensure that plants, vehicles, boats and infrastructure are well maintained and repaired. Mechanical, electrical and civil engineers work in ports on a wide range of specialist equipment and structures (EU NAVFOR, 2015).

#### 2.2.4. Seafarer Team

Desk officer is responsible for controlling navigation, communications, safety and security using the latest technological systems. Engineering officer is responsible for operating and maintaining all the mechanical and electrical equipment throughout the ship at sea.

### 2.3. *Accenture Model*

Accenture is developed as a new model that addresses a wide range of factors contributing to shareholder value creation. These factors include human, organizational and relational capital as well as monetary and physical resources already addressed by traditional accounting (Berntzen and Olsen 2009). The human capital part of Accenture's model follows the cause-effect chain. Accenture tries to show that sound, strategically aligned, human resource management processes produce desirable human capital capabilities, which, in turn, produce high levels of customer satisfaction and retention plus high levels of quality and productivity; these, in turn, produce desirable financial results (Berntzen and Olsen 2009). Accenture applied this model initially to 19 global companies. As it applies the model to more and more

organizations, it hopes to improve its predictability. One practical application of the model might be to help a company having problem with performance declines and low levels of efficiency. Accenture could analyze the relationship among a variety of factors affecting performance and optimization. These factors might include recruitment, competency management, learning/training, and workforce proficiency (Berntozen and Olsen 2009). It would then be able to advise the company regarding the most promising methods of boosting customer satisfaction in a manner that also appears likely to boost performance.

#### 2.4. Rationale for Training and Education in the Shipping Sector

Training and education are very important in shipping sector to enhance effectiveness and productivity. Key element for innovative total quality management approach for improving shipping sector performance include continuous learning, at the individual and organizational levels, and fostering high employee involvement. Simon and Ben (2015) opined that organizations have many different reasons for implementing training, education, and development programs. Among the most common purposes are the following:

- Integrating and acclimating new employees: "Orientation programs" are designed to shorten the time it takes for newly hired personnel to become socially integrated and productive in their roles.
- Preparing employees to tackle increasingly difficult tasks: Supportive programs employees' advancement within the company, for example, by understanding more for a new position, detailed technological expertise or managerial abilities are necessary.
- Increasing overall efficiency and performance: Programs that concentrate on employee performance in their current employment and can involve the following: New technologies and working methods are being introduced.
- Adherence to legal and ethical standards: Training designed to ensure that staff operate within legal bounds and that their actions adhere to the ethical standards anticipated by management and stakeholders.
- Keeping the workers informed: Organizations undertake information sessions to keep employees up to date on business and workplace developments because business reality is constantly changing.
- Health and safety programs: These are programs that focus on the well-being of employees by teaching them how to stay healthy and avoid potential workplace injuries.
- Changes in attitude: Programs concerned with workers' attitudes and beliefs regarding organizational initiatives and other employees or stakeholders, in contrast to programs that focus on how to do a task, are concerned with employees' feelings and beliefs toward other employees or stakeholders.
- Improving problem-solving and decision-making abilities: Organizations must ensure that their employees know how to analyze a situation, pick amongst various initiatives, and overcome challenging, unanticipated difficulties as the corporate world becomes increasingly complex. The advantages of education, training, and development are well documented, and studies show that such investments have a significant positive impact on an organization's bottom-line results, competitiveness, employee performance, job satisfaction, and commitment.

### 3. Methodology

The population of the study comprises of offshore and onshore staff of the shipping companies in Nigeria. This includes the staff of the private sea terminal operators, seafarers and the dock workers as presently managed by Nigerian Maritime and Safety Agency (NIMASA). This research adopts simple random sampling technique in which three hundred questionnaires were distributed to respondents in Lagos. Figure 1 show the map of Lagos state showing Lagos Port complex.

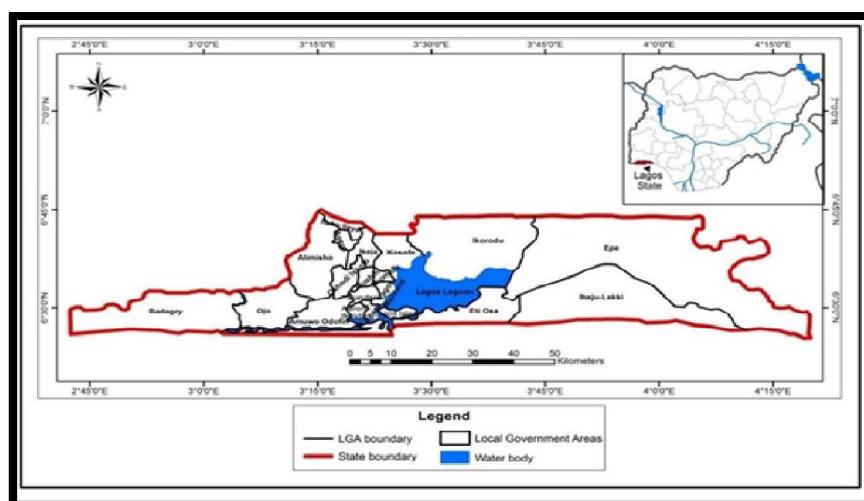


Figure 1: Lagos State Showing Lagos Port Complex  
Source: Lagos Metropolitan Area Transport Authority (LAMATA), 2015

#### 4. Result

The result of the analysis of data collected for this research is presented below.

	SD	D	A	SA
The staff are made to move from one job to another within the work setting over a defined period of time	0.0%	0.0%	30.1%	69.9%
In the port staff are placed under the direct guidance of a supervisor	0.0%	10.0%	69.9%	20.1%
The marine staff are taught complex functions and responsibilities	10.0%	0.0%	59.9%	30.1%
The staff are avail the opportunity to make decision by deliberately exposing them to challenging jobs and problem-solving situation.	0.0%	20.1%	29.8%	50.2%
The training programmes for the maritime staff helps the staff and shipping training provider to gain insights into the relationship between theory and practice	0.0%	0.0%	60.2%	39.8%
The port management often brings together group of people who pool and discuss ideas to stimulate intellectual input of the staff in the port	0.0%	19.8%	40.1%	40.1%
The staff are sponsored to programmes where group of people meet and work together in order to share and develop ideas	0.0%	0.0%	40.1%	30.1%
The staff are sent to attend non work environment in which conditions and equipment are virtually identical to what will be encountered on the job	0.0%	10.0%	49.8%	40.1%
The port management and maritime services providers sponsored employee to programmes where trainer presents a short paper and asks for the reactions of the trainees	0.0%	10.0%	70.2%	19.8%
The trainer helped the staff to see how the training can be applied on the job.	0.0%	10.0%	39.8%	50.2%
The port management and maritime services providers constantly adopts latest automation technology and computerization in their operation	0.0%	10.0%	49.8%	40.1%
Staff are constantly train on the use of latest automation processes	0.0%	20.1%	50.2%	29.8%
Newly recruit staff are train on the handling internet technologies	0.0%	20.1%	30.1%	49.8%
All staff used internet technologies in most of their operations	10.0%	20.1%	20.1%	49.8%
Workers skill on internet technology usage and application is constantly review by the organization	0.0%	20.1%	30.1%	49.8%

*Table 1: Off-Shore Shipping Staff Training and Education (OFNST)*

*Source: Field Survey, 2019*

The result in Table 1 shows that in terms of off-shore shipping staff training and education the majority of the respondents strongly agreed that the staffs are made to move from one job to another within the work setting over a defined period of time (69.9%). Likewise, they agreed that in the port staffs are placed under the direct guidance of a supervisor (69.9%). Meanwhile they agreed that the marine staffs are taught complex functions and responsibilities (59.9%). Furthermore, this category of shipping service providers and seaport users agreed strongly that the staff are avail the opportunity to make decision by deliberately exposing them to challenging jobs and problem-solving situation (50.2%). This category of shipping sector human resources in the Lagos Apapa port complex agreed that the training programmes for the maritime staff helps the staff and shipping training provider to gain insights into the relationship between theory and practice (60.2%). Also, Majority of participants in the study agreed that the port management often brings together group of people who pool and discuss ideas to stimulate intellectual input of the staff in the port (40.1%). This same category of respondents agreed that the staff are sponsored to programmes where group of people meet and work together in order to share and develop ideas (40.1%). Also, this group agree that the staff are send to attend non work environment in which conditions and equipment are virtually identical to what will be encountered on the job (49.8%). The majority of shipping service providers and seaport users also agree that the port management and maritime services providers sponsored employee to programmes where trainer presents a short paper and asks for the reactions of the trainees (70.2%). This category of shipping service providers and seaport users strongly agreed that the trainer helped the staff to see how the training can be applied on the job (50.2%). Furthermore, majority of the participants agreed that the port management and maritime services providers constantly adopts latest automation technology and computerization in their operation (49.8%). This same group of respondents agreed that staffs are constantly train on the use of latest automation processes (50.2%). Also, majority of the respondents strongly agreed that newly recruit staff are

train on the handling internet technologies (49.8%). In addition, the same category of respondents strongly agreed that all staff used internet technologies in most of their operations (49.8%). Finally, the same category of participants strongly agreed that workers skill on internet technology usage and application is constantly review by the organization (49.8%).

	SD	D	A	SA
The staff are made to move from one job to another within the work setting over a defined period of time	0.0%	10.0%	39.8%	50.2%
In the port staff are placed under the direct guidance of a supervisor	0.0%	0.0%	39.8%	60.2%
The marine staff are taught complex functions and responsibilities	0.0%	30.1%	39.8%	30.1%
The staff are avail the opportunity to make decision by deliberately exposing them to challenging jobs and problem-solving situation.	0.0%	30.1%	30.1%	39.8%
The training programmes for the maritime staff helps the staff and shipping training provider to gain insights into the relationship between theory and practice	0.0%	29.8%	20.1%	50.2%
The port management often brings together group of people who pool and discuss ideas to stimulate intellectual input of the staff in the port	0.0%	20.1%	9.7%	70.2%
The staff are sponsored to programmes where group of people meet and work together in order to share and develop ideas	0.0%	20.1%	29.8%	50.2%
The staff are sent to attend non work environment in which conditions and equipment are virtually identical to what will be encountered on the job	0.0%	20.1%	10.0%	69.9%
The port management and maritime services providers sponsored employee to programmes where trainer presents a short paper and asks for the reactions of the trainees	0.0%	10.0%	20.1%	69.9%
The trainer helped the staff to see how the training can be applied on the job.	0.0%	0.0%	30.1%	69.9%
The port management and maritime services providers constantly adopts latest automation technology and computerization in their operation	0.0%	39.8%	40.1%	20.1%
Staff are constantly train on the use of latest automation processes	30.1%	0.0%	10.0%	59.9%
Newly recruit staff are train on the handling internet technologies	0.0%	0.0%	90.0%	10.0%
All staff used internet technologies in most of their operations	10.0%	0.0%	79.9%	10.0%
Workers skill on internet technology usage and application is constantly review by the organization	0.0%	60.2%	10.0%	29.8%

Table 2: On-Shore Shipping Staff Training and Education (ONST)

Source: Field Survey, 2019

The result in Table 2 showed that in terms of onshore shipping staff training and education, most of the respondents strongly agreed that the staffs are made to move from one job to another within the work setting over a defined period of time (50.2%). Likewise, they strongly agreed that in the port staffs are placed under the direct guidance of a supervisor (60.2%). Meanwhile they agreed that the marine staffs are taught complex functions and responsibilities (39.8%). Furthermore, this category of shipping service providers and seaport users agreed strongly that the staff are avail the opportunity to make decision by deliberately exposing them to challenging jobs and problem-solving situation (39.8%). This category of shipping sector human resources in the Lagos Apapa port complex strongly agreed that the training programmes for the maritime staff helps the staff and shipping training provider to gain insights into the relationship between theory and practice (50.2%). Also, Majority of participants in the study strongly agreed that the port management often brings together group of people who pool and discuss ideas to stimulate intellectual input of the staff in the port (70.2%).

This same category of respondents strongly agreed that the staffs are sponsored to programmes where group of people meet and work together to share and develop ideas (50.2%). Also, this group strongly agree that the staff are sent to attend non work environment in which conditions and equipment are virtually identical to what will be encountered on the job (69.9%). Most shipping service providers and seaport users also strongly agree that the port management and maritime services providers sponsored employee to programmes where trainer presents a short paper and asks for the reactions of the trainees (69.9%). This category of shipping service providers and seaport users strongly agreed that the trainer helped the staff to see how the training can be applied on the job (69.9%). Furthermore, majority of the participants agreed that the port management and maritime services providers constantly adopts latest automation technology and computerization in their operation (40.1%). This same group of respondents strongly agreed that staffs

are constantly train on the use of latest automation processes (59.9%). Also, majority of the respondents strongly agreed that newly recruit staff are train on the handling internet technologies (90.0%). In addition, the same category of respondents strongly agreed that all staff used internet technologies in most of their operations (79.9%). Finally, the same category of participants disagreed that workers skill on internet technology usage and application is constantly review by the organization (60.2%).

In order to determine how effective is the level of training and education of staff engaged in off-shore and inshore operation in the Nigerian shipping sector, the study used correlation analysis as presented in Table 3:

		Off-shore staff Training and Education	On-shore staff Training and Education	Shipping_Staff_ Training_and_ Education	Shipping_Sector_ Operational_ Effectiveness
Off-shore staff Training and Education	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	329			
On-shore staff Training and Education	Pearson Correlation	.495**	1		
	Sig. (2-tailed)	.000			
	N	329	329		
Shipping_staff_tr aining_and_ education	Pearson Correlation	-.043	-.186**	1	
	Sig. (2-tailed)	.442	.001		
	N	329	329	329	
Shipping_sector_ operational_ effectiveness	Pearson Correlation	-.423**	-.564**	.382**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	329	329	329	329

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 3: Effect of Training and Education in Off-Shore and Onshore Staff

Dependent Variable: Shipping\_Sector\_Operational\_Effectiveness

Source: Field Survey, 2019

Table 3 revealed that strength of the association between off-shore staff training and education ( $r = -.423^{**}$ ,  $p < .000$ ) and shipping sector operational effectiveness is weak but significant. The implication of this result is that, offshore staff level of training and education is ineffective on shipping sector operational effectiveness in the Nigeria Maritime Sector. Also, strength of the association between onshore staff training and education ( $r = -.564^{**}$ ,  $p < .000$ ) and shipping sector operational effectiveness is moderate but significant. The implication of this result is that, onshore staff level of training and education is moderately effective on shipping sector operational effectiveness in the Nigeria Maritime Sector. Furthermore, the strength of the association between the entire shipping staff training and education ( $r = -.564^{**}$ ,  $p < .000$ ) and shipping sector operational effectiveness is weak but significant. The implication of this result is that there is a nexus between the shipping staff level of training and education and shipping sector operational effectiveness in the Nigeria Maritime Sector.

#### 4. Conclusion and Recommendations

The study concluded that training and education bridge the knowledge gap which improve the competence of staff in terms of intellectual input (creativity and innovation) and directly influence the shipping sector with the aim of maximizing the shipping sector operational effectiveness. It was recommended that both onshore and off staff should be trained and retrained to get acquainted with the new technology and other innovation in the Nigerian maritime industry. Also, human resource policy should be reviewed from time to time in order to enhance staff welfare, training and development programs.

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