

Improving Seaport Facilities to Develop Freight Transportation System in Bangladesh

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Abstract

Shipping is the most critical globalized trade of the world. Seaport plays a significant role on behalf of the maritime nation for dominating in world trade. Bangladesh is the least developed countries (LDCs) of the world who process the sea area naturally. Cheap labour, available land and excellent maritime access are created good environment to attract the world trader. Moreover, natural disadvantages of sea access and partially or fully land-locked condition of neighbouring countries like India, Nepal, Bhutan, China and Myanmar created the opportunity to do maritime business with them. Facing this derived demand, need to develop seaport facilities and others for earning foreign exchange and minimizing the domestics growing demand. More handling of cargo at port means the more business of the nation. It will create the situation for increasing own flag vessel, shipping business and well structured transport system in the country. This is the economics of maritime transport by which nation can create another source of GDP (Gross Domestic Product). This paper aims to find out the ways how to develop Bangladeshi seaports and they can get economical benefits from maritime business through port transport. Moreover, this document features possible solutions and recommendations for developing the Bangladesh port industry and set out a timely and economical strategy to enable the industry to play a key role in the region.

Keywords: Maritime, LDC, China, Foreign Exchange, GDP, Business.

1. Introduction

Bangladesh is a least developed country but is an emerging maritime power in South Asia. It has huge potential because of recent industrialization of RMG (Readymade Garments), pharmaceutical and other products. Bangladesh has the advantages of a long coastline, with two natural seaports, well located and facing out into South East Asia. USAID (2009) stated that the world growth is driving by developing and transition economy for their basic resources of land and labour like Bangladesh. Moreover, the quantity of import and export is growing everyday and increasing the purchase capacity by national and foreign remittance income from inside and outside of the country respectively. Driven in particular, with (UNCTAD, 2008) over 80 per cent of world merchandise trade by volume being carried by sea, maritime transport remains the backbone supporting international trade and globalization and strong demand for maritime transport services is fuelled by growth in the world economy and international merchandise trade. WTO (2006) commented that over 90% of Bangladesh's internationally traded goods are carried by sea, efficient maritime transport services, as well as auxiliary services, such as port and cargo handling services, are essential for a cost-effective business environment. Its large population, availability of cheap labour, natural advantages, seaport facilities and modern communication facilities with the rest of the world created the opportunity to be a big contributor to world trade. Having competitive advantages and recent industrialization and doing international trade with other countries, it is becoming an attractive place for investing money for doing business.

Ports (Roy and Banerjee, 2010) are important links in the logistics chain, and thus port efficiency affects to a large extent a country's competitiveness. Port economics refers to the study of port development, which has a major role in connecting the freight and vessels. Meanwhile, major (Couper, 1986) technological changes since 1969 affected the port productivity internationally. These included changes in the numbers of workers employed in the port, management responses, social conditions and industrial relations. The World Bank-WB (2006) Group study identified ineffective and poorly managed infrastructure in ports as one of the main constraints in Bangladesh for developing business and reducing poverty. They concluded that at that time port facilities were inefficient, corrupt and failing to keep up with demand, raising shipping costs and reducing competitiveness. Transport (Wu and Lin, 2008) efficiency enhancement is one tactic that bring into play to improve the potential competitiveness of a port and would provide a genuine opportunity to lower transportation costs and improve environmental performance to help build a sustainable logistics distribution system.

In Bangladesh, the maritime (Khanam and Misir, 2008) dependency or sea access facilities demand factor is 30% and the port sector contributes 35-40% budgetary revenue through the earnings of export-import taxes, excise duties, VAT and others. Overall, the economy of Bangladesh is highly dependent on the transport systems and performance of the seaports. The proper and effective interconnection between seaport and users premises may decrease the transport cost as well as decreasing the value of commodity. Only the excellent

operation efficiency of port and heavy infrastructure facilities of port and intermodal systems may attract the world trader to do business.

Bangladesh is a member of the WB and striving to develop her transport system with its help. The WB (2008) Group's transport business strategy for 2008-2012 made the slogan for "Safe, Clean and Affordable transport for development". They believe that ports serve in a part but "To handle increasing volumes of cargoes, and of containerised cargoes in particular, the Bank Group's partner countries need to ensure the availability of well-functioning ports" (p-5). In addition, Bhattacharya and Hossain (2006) added that "despite trade volume increase, the country's largest seaport, Chittagong, suffers from insufficient space management, shortage of handling equipment and lack of through-transit facilities for containers. These bottlenecks cause serious delays and traffic congestion. It also noted, however, "The port authority has been taking various initiatives to improve the port's service which are considerate to be inadequate".

After this introduction, country profile is added in Section 2 for giving a short description of Bangladesh along with logistics assessment, existing and proposed port facilities. Section 3 describes the demand for and supply of port facilities in Bangladesh in relation to maritime transport supply and demand and its importance in a national and international context. Section 4 features the research objectives before the Literature Review where Section 5 reviewed the literature of port transport, logistics and seaport development where importance, competitiveness and performance of seaport discussed for understanding the port business and its related activities for developing the country. For a good research, methodology is playing a key role to bring the data for analysing, interpreting and taking a decision. In this research, qualitative and quantitative both methods are used for reaching a decision or making recommendations for seaport development in Bangladesh, which are structured in Section 6. Furthermore, Section 7 compiled the collected data of primary research from the participants and participants answer of selected questions. Here, the related answer quoted directly for getting real scenario of Bangladesh port transport. Compare and contrast between literature review and statements from interviewed are discussed in Section 8 as Analysis. These are the output of the research which helped to recommend for improving seaport facilities in Bangladesh in Section 10. Finally, a conclusion is drawn in Section 9 by reviewing all research activities from the beginning to the analysis. Overall, it will try to explore the main factors that are useful to create a successful port and enable it to meet the growing demand for maritime access in South-east Asia and to identify barriers to the development of international seaports in Bangladesh.

2. Context: Country Profile

This Section is focused on country overview, economy, transport systems and seaport facilities (Existing and Proposed) which will help to understand the position of Bangladesh as maritime nation. Bangladesh, officially known as The People's Republic of Bangladesh (BBS, 2009) lies in the north eastern part of South Asia between 20° 34' and 26° 38' north latitude and 88° 01' and 92° 41' east longitude. In size it is 1, 47,570 sq km, with territorial waters of 22.2 sq. Km. The country is bounded by India on the west, north and north-east, by Myanmar on the south-east and by the Bay of Bengal on the south. The development diamond (The WB, 2010a) is showing that country exceeded the low -income group level except gross primary enrolment. Overall, the WB indicator reflects a good and happy life-style of Bangladesh among the developing countries of the world. The WB assesses the economic ratio of Bangladesh where trade is lagging behind in low-income level but having a balance of capital and domestics savings.

2.1 The Transport System

WB (2010b) argued that efficient transport system is essential to facilitate economic growth of Bangladesh for achieving the first goal of MDGs –at least 7% percent to overcome the general poverty. By reducing the cost of transport and allocate resources among different modes of transport in a more balanced manner, Bangladesh can achieve growth. Fortunately, Bangladesh has all kinds of transport mode facilities for connecting the people and for freight transportation. The quality of the infrastructure is average but affected by seasonal factors like, flood, heavy rain and high temperature.

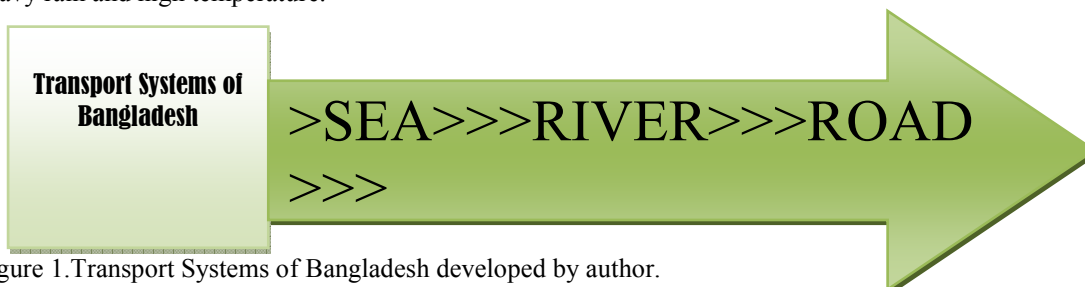


Figure 1. Transport Systems of Bangladesh developed by author.

2.2 Bangladesh Seaports- Existing and Proposed

Chittagong (CPA,2010) is the principal port of Bangladesh, handling about 92% of import-export trade of Bangladesh. It is situated on the right bank of the tidal river Karnafully at a distance of about 9 nautical miles from the shore line of the Bay of Bengal. In addition, Mongla (Amin 2009) seaport is second port of Bangladesh. It is situated on the south-western part of the country at the confluences of Pusher River and Mongla Nulla approximately 71 nautical miles upstream of the Bay of Bengal. The port directorate was changed in several times and finally named as Mongla Port Authority since 8 March, 1987. Mongla is an important seaport that has accomplished the activities like import and export of various goods inside and outside of Bangladesh. Mention that Mongla (The Independent,2009) Port Authority signed a memorandum of understanding worth around Tk. 21,000 core (\$ 3 billion) with a Singaporean company named Associates Pte Ltd's to develop the second largest seaport of the country. Power plant, water treatment plant, industrial park, dredging system, container terminals and other infrastructure will be set up over 20 years for serving the nation also playing a vital role in importing and exporting goods to various countries, including India, Nepal, China and Bhutan.



. Proposed deep seaport at Sonadia in Chittagong (Bangladesh2 day,2009)

The government (Bangladesh2 day,2009) has plans to build the country's first deep seaport at Sonadia Island near Moheshkhali of Chittagong. Pacific Consultant International – a Japanese firm conducted the feasibility study of deep seaport in 2006 and Bangladesh is going to establish such port that would revolutionise Bangladesh's trade through sea routes with the South Asian region. In addition, it would help transport of goods to India's seven south-eastern states, Kolkata port and Haldia port, Nepal, Myanmar as well as to Kunmin province of China. Moreover, at present, there is an ICD at capital city Dhaka and one inland container terminal at Pangaon nearby owned by CPA and connected with the port by railway and river respectively. The National Board of Revenue also permitted private off-dock and hinterland facilities to the EPZ's also shipper premises all over the country.

3. Context: Demand and Supply in Port Transport

The geographical location of Bangladesh can be treated as attractive to international traders as it is located beside the Bay of Bengal. The bay comprising the two ports Chittagong and Mongla covers a great portion of the boundary area of Bangladesh. With the expansion of market economy, movement of various products locally and internationally and others, it is increasing day-by-day demanding a proper transportation system. Seaport development and avail the opportunities are the main source to reach the destination.

3.1 Demands for Port Services

The Bangladesh (Rahman,2007) economy is rapidly getting integrated with the rest of the worlds and export-import trade has been increasing by 20-25 percent in recent years. Seaport development means the strong connection of intermodal system. Intermodal system may be developed by creating infrastructure in all over the country. River container port nearby capital Dhaka is the derived demand of Bangladesh. Deep seaport will connect with this for making shipping access from the capital economically and timely. Bangladesh's (The Financial Express,2010) port logistics business, especially in container handling, has been chalking up at the rate of 12 percent where Chittagong port handled 1.26 million TEUs in 2010 financial year. Recent industrialization and promotion of specialized industry like RMG, pharmaceutical, agricultural product etc increased the demand for port services. As per CPA (2010), in 2005, Chittagong handled 0.78 million TEUs but in 2010 it is 1.26 million approximately 62 % increase within 5 years . This statistics showed that the demand for port transport is increasing the day by day.

To provide (Sau, 1999) attention in the regional demand, the Port of Haldia is a major seaport and industrial city in West Bengal, India and Calcutta port which played an important role in the economic development declined in importance relative to other major ports of India which is mainly attributed in the existing literature to some supply constantly like deficiency in draft, declining port productivity, high detention time of ships visiting the port and frequent labour unrest. Dahal (2006) added that administrative hassles and time consuming handling of customs incurred heavy freight cost for Nepal for taking the seaport facilities from the Indian port. Even this problem is also for domestic's cargo of seven sisters due to the far distance and geographical advantages. As a result, the Chittagong port became very important in this region. Azad (2008)

expected to export the port service and allow other countries like Nepal, Bhutan and India for using the Bangladeshi port facilities on payment of services charges. In a study, De et al (2006) found that Nepal and Bhutan faces substantial trade cost and they have shown keenness to use two seaport of Bangladesh.

Finally, Gwilliam (1993) expressed that “By its nature shipping has always been an international business” (p-2). Investors are very alert about shipping services through seaports and wanted easy shipments and clearing of their cargo. As Bangladesh is an import based country having few nationally owned vessels, ship-owner requires sound and reliable shipping facilities for sending their vessel to Bangladeshi ports. Now-a-days, mega seaport influenced to establish industrial park nearby. Connectively, foreign investment will come rapidly to develop industry. China and Myanmar are highly interested to use Bangladeshi seaport for their convenient and closest access to the seaport.

3.2 Supply of Port Facilities in Bangladesh

Against the demand forecasted, at present, there are two seaports for minimizing the national demand. No transit facilities or regional shipping trade via Bangladeshi seaport. However, ICD facilities are available outside the port protected area and these are responsible for empty container storage, selected import commodity discharge and export stuffing. In addition, All ICDs are located in Chittagong except the Chittagong port ICD in capital city of Dhaka. Actually, Chittagong port is performing fully where Mongla port is operating partially. As ICD's are located near port area, all containers are easily transfer from the vessel quay or port yard to ICD yard and direct loading of export laden and empty containers from the ICD.

Preliminary, the planned deep seaport and Chittagong port will face heavy competition with the regional ports of India. Furthermore, Myanmar (People's Daily, 2007) is another competitor of Bangladesh in maritime trade. Myanmar is planning to build a deep-sea port in Kyaukphyu, western coastal Rakhine state, to facilitate maritime trade with neighbouring countries. Moreover, competition may be extended to the regional hub of Sri Lanka, Singapore and Malaysia. BIWTA (The Daily Star, 2010) has built container terminals at Pangaon and Khanpur and will develop a similar facility at Chittagong port. A part of the port containers will move through BIWTA container terminals and a big part by railway. Using the Mongla port, one water transit route between India and Bangladesh is Karimongj-Bhairab Bazar-Narayanganj-Mongla-Kolkata and the other is Gwahati-Patgaon-Narayanganj-Aricha-Mongla-Kolkata. Following (The Economic Times, 2010) its publicized stance of agreeing to allow India, Nepal and Bhutan to use its two sea ports, Bangladesh plans to persuade China to use Chittagong port as a commercial outlet for its southern Yunnan province. However, as per estimates (The Daily Star, 2010) of the port authorities, at present, Bangladesh makes use of only 60% and 25% of the total capacity of Chittagong port and Mongla port respectively and by this existing facilities she can sell remaining 40% and 75% of the port service easily to neighbours.

4. Research Objectives

This section will try to find out the aims and objectives of the research for developing a network chain for integrating the Bangladesh transport systems especially on port transport. Stated that Bangladesh can improve developing international standard seaports in which she can control or handle cargo efficiently and economically. As seaport is the centre of maritime activities and shipping business are running within the seaport area, country need to create such port facilities and business environment for attracting the world shipping companies to invest in Bangladesh. In addition, infrastructure of the country and liberal shipping policy also helps to do business in international environment. The PPP (Moriarty, 2009) initiative for the development of Bangladesh reflects the fact that infrastructure is one of the leading constraints on Bangladesh's growth today. Overall, intermodal and multimodal systems, from the deep seaport to general seaport facilities - rail, road and river connections, are not structured properly for managing the transport chain even where these facilities are available. To develop the intermodal infrastructure and support the multimodal systems of the country there is also a need to develop the seaport handling facilities. Staying with the international port and shipping trend, now-a-days, ports and terminals are trying to improve port efficiency that means quick handlings of cargo and container and decreasing the turn-around time of the vessel. In addition, lower cargo handling cost for easy calculation for choosing or avoiding the port, in line with integrates port service with other components of the global distribution networks added by Khanam and Misir (2008).

More significantly, the development of container port is essential. As (Roy and Banerjee, 2010) most of the import and export mixed cargo passes through container ports, improving the efficiency of a nation's container port is a challenging yet critical task. In addition, energy (Oil, coal etc) is the crucial factor for growing the industry and specialized port and berths are required to mitigate the problem. Overall, good port infrastructure is required to serve the nation.

The basic aims of the research are as follows:-

- To identify the major problems like turnaround time, congestion, yard space, cargo handling equipment, efficiency and others of Bangladeshi port or barriers to increase the port efficiency.

- Ascertain the needed requirements for improving seaport facilities to set a world standard because shipping is the international business. Need to analysis the basic requirements of international shipping companies and terminal operators for doing shipping business in Bangladesh.
- To establish a model of supply chain management lead by maritime transport operators combining with other modes of transport.
- To determine the marketing and pricing strategy of seaport in two parts nationally and internationally for playing a role in GDP.
- Identify the possibilities of port privatization in Bangladesh especially for second largest seaport Mongla also identify whether the factors such as social, economical, political will hamper the seaport development of Bangladesh.

5. Literature Review

The (Chia et al., 2003) primary concern for a literature of maritime transport regime is to create an altogether more efficient maritime transport system as part of the trend towards a freer economy structure as a whole. This literature review divided into six parts for understanding the economics, maritime economics and port economics regarding port financial matter along with the relationship between international trade and economic development which are featured in first part. Furthermore, second part is discussed the logistics activities at port in relation to the global supply chain management, management of transportation where infrastructure and intermodal systems helps port to increase the efficiency by changing the commodities frequently to/from port area that means to transport goods where trade cannot take place-the logistics chain. In addition, seaborne trade in third part reviewed the present basic scenario of international business and shipping trade. In fourth part, the literature tried to find out the connections between ports and development like ancillary industries, employment opportunities and others, overall, Port as the centre of logistics. Furthermore, in fifth part the literature reviewed the needful develop-investment, dynamic management, lack of regulation, privatization of port where port effectiveness, competitiveness, performance are highlighted for understanding the role of seaport in international context. Finally, a brief literature added about the role of Bangladeshi seaports and transport system for trade facilitation and what strategies Bangladesh should take for developing her port facilities considering the derived demand of trade.

5.1 International Trade and Economic Growth

Shipping plays a vital and significant role in national economy. The very beginning of modern economics described about the literature of living standards that is interested on trade and development. Clark et al. (2001) found the lack of initial consensus among researchers on the relationship between trade and growth has been mirrored by differences in the actual trade strategies of developing countries. Remarkably, globalization and liberalization of trade also brought the competition for sustaining on the international trade in all context developed or developing country. Basic needs of any place is mitigating by importing from other place in a cheap rate along with quality product. This is happening because of easy access to the seaport for transporting the cargo at low cost. This economics of commodity transportation or minimizing the sea transport cost or together created the environment for doing international business. Globalization (King, 1997) is a break with the past, challenging accepted modes of thought and their translation into business practice which reflect the reach of processes that are increasingly influencing our lives broadly intended to imply a shift in the basic assumptions that have underpinned international business and trade on the basis of comparative advantages. It is describes as a holistic approaches to international business strategy for supplying against the demand at a cheap rate in the competitive market.

Shipping is an international business where foreign exchange performed as the leading variables for importing and exporting commodity. In a study, Lane (2001) expressed that home and foreign price levels are sticky, a movement in the nominal exchange rate shifts the real exchange rate and delinks home and foreign consumption growth where home and foreign output rises since the domestic demand expansion raises demand for imports at the fixed relative price of imports in terms of domestic currency. Foreign exchange rates which helps to make decisions in domestics development but before going for developing need to analyse the supply and demand for assessing the strength of the country.

However, Mcconville (1999:p 15) defined “Maritime Economics is a discipline or field of study connected with the manner in which existing material and human resources are used in the industry and how they changed and develop over time. Maritime Economics theory consists of a body of concepts and principles which assists in the explanation of the industry’s progress”. Drewry (1996) shipping consultants featured that shipping finance is a high risk but low return business. Therefore, economics of shipping is very hard and complex by its nature. In here, Mcconville (1999) argued that there is no country in an international economy who is self sufficient in the commodities that its population needs and expects. He functioned that the maritime transport as a bridge between producers and consumers for minimizing the gap of needs and expects. Gallegos

(2010) stated that structural changes in international trade and the evolution of maritime transport have a direct impact on port growth and expansion. Globalization, or the expansion of markets and hence of the economic prospects of societies, is taking place not only because of the supra-national nature of markets, but also because of the flow of foreign investment and the strategies of multinational enterprises.

5.2 The Logistics Chain

Logistics is defined by Branch (1998) as the time –related positioning of resources for ensuring the materials, people, operational capacity and information are in the right place at the right time in the right quantity and quality and at the right cost. Fragmented in 1960, logistics is fully integrated in 2000 where transportation is the main wings of physical distribution reviewed by Bardi et al. (2006) in their study of transportation. However, this part is designed for featuring the role of port in supply chain on the context of logistics. Quinet and Vickerman (2004) expressed that transport has a key role in economic activity which contributes to a share of national output. Also added that it is a derived demand and growth of the economy as a whole; it is necessary to understand the nature and the intensity of this link and improvements themselves can determine the rate of growth of the economy. Moreover, transport is like any factor of production, which can be substituted for others, dependent on technology and on relative factor prices.

Transportation (Bowersox et al., 2007) is the operational area and primary responsibility of logistics across the supply chain that geographically moves and positions inventory which traditionally received considerable managerial attention. In a study of transport economics, Hensher and Brewer (2001: p-3) expressed that “Risks and opportunities, challenges and rewards pressure the economic world of transport and logistics management”. Pallis (2002: p-1) stated, “In fact, the maritime transport system has been a highly institutionalized and politicised economic sector. Precisely because of its strategic economic significance, national governments are performing as market (de)regulators, as well as maritime infrastructure investors and owners”. Pedersen (2001) explains that during the 1990 transport and communication appear slowly to be on their way into the mainstream again, but now transformed into a much broader concept of logistics, which has become an increasingly important element in the organisation and restructuring of the globalizing economy. From being an external factor, transport has become an integrated part of the production and distribution system.

The most primitive industrial processes are maintained through a good supply chain for placing the raw materials and shipped the finished product in factory and vehicle respectively. The relationship (King, 1997) between the supplier of raw materials and the consumer of finished products involves a complex network of linkage, both within and between individual companies by a system of supply chain which linked together by the feed-forward flow of materials and the feed-back of information. Stopford (2009) believes that shipping is concerned with international trade; it inevitably operates within a complicated pattern of agreements between shipping companies, understandings with shippers and the policies of government.

5.3 Shipping Trade and International Business

Recent (Kwak et al 2005) environmental changes over the world and rapid advancement of ocean technology are shifting the perception of maritime industry. In addition, economic depression what relocated the economy from developed to developing also diverted the course of marine trade towards developing country like China or other Asian country. The development of port and shipping sector is lagging behind in Bangladesh. Due to financial crisis and inability to improve the shipping policy, the country is depends on the foreign shipping company. for due to its Legislative (Drewry, 2000) control of shipping has effectively shifted from national level to international level also moving from rules devised and implemented by individual national administrations with a few international agreements, to a complex and growing set of global requirements. In (Francois and Wooton, 2000) the maritime world, the oceans are populated with shipping conferences which meet regularly to set rates, analyze market conditions, and assess other developments like fuel prices and port charges for constructing the market structure and business environment.

The seaborne trade is highly depends on the world GDP growth which is indicating a tough time of world development. However, this economic downturn highly affected by developed countries that can control or overcome the crisis. UNCTAD (2009) reported that in 2008, major loading areas were located in developing country - 60.6 % and Developed country-33.6 % and transition economics -5.9%. Asia dominated the export area approx 40 percent and role of China is remarkable for keeping the GDP growth continuously. The demand for sea transport is complex and variable because it is a measure of the comparative advantages enjoyed by one country over the other. Most probably maritime industry is the only industry where investment is very high but return is very low and time factor investment comparing with any others.

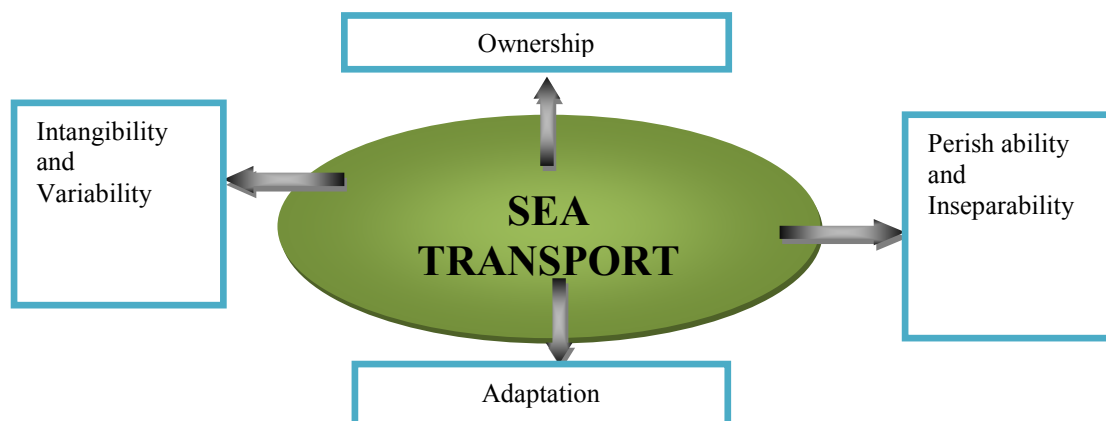


Figure 3 Characteristics of Sea Transport Services (Plomaritou,2008)

Sea transport service having a number of distinctive characteristics which differentiated them products and have implications in the manner in which they are marketed like intangibility (Plomaritou,2008) which cannot be assessed by using any of the physical senses) , perish ability (Cannot be stored, resized or relocate), ownership (Merely buying the right of service process, no ownership transfer) , inseparability (service is not separate able) , Variability (Always Unique and is never exactly repeated) and inability to own a service or adaptation. Francois and Wooton (2000) raised a question about tariff and its affect on trading in international trade and argued that with a competitive shipping industry, the beneficiaries of trade liberalization would be the consumers in the importing country and the exporting producers. With a less-than-perfectly-competitive shipping industry, the benefits of the more liberal trade regime are partially captured by the shipping firms. Drewry (1996) reflected on cycles in shipping and shipping finance that the importance of capital inflows to the shipping industry and their role in determining shipping supply and thereby earnings and asset values cannot be stressed too empathically. Obviously seaports, generally used by world trader and shipping companies shall remain crucially important links in successful supply chains. Hopefully, the demand of shipping trade will increase as it has the derived nature in servicing the world transport.

5.4 Port- The Centre of Logistics

Seaports (Alexandersson and Norstorm,1963) are point where the physical equipment for the transfer of goods from water to land transportation or vice versa and from large ocean-going ships to small coastal vessels or river barges is installed, where almost all economics activities directly connected with shipping are located, where heavy manufacturing industries dependent on cheap transportation of bulky or containerised raw materials or product tend to locate, where most ships are being built and repaired and where most sailors and seaman have their homes and families.

For global trade, intermodal system is developing and it is often the only options because factories and markets may not be next to ports. Here, port is the centre or coinciding point for making a plan or estimation of commodity to be delivered or received finally. Maritime transport is the main mode of transport system that coordinates other modes of transport especially for intermodal system and Seaport is the centre of all modes where all kinds of transport interconnected individually. For a strong communication system of a country and the success of supply chain management is highly depends on the infrastructure of the country and development of the transport systems also their frequent movement without any traffic disturbance. The operations strategy of the main transport provider plays a pivot role to bring the integrated systems by which the country may get comparative advantages to minimize the transport costs and decrease the valuable time on route. Intermodal (Bowersox et al., 2007) operators use multiple modes of transportation to take advantages of the inherent economics of each and thus provide integrated service at the lowest total cost. Here, time and cost are the main determinants to the customer but fully depends on the infrastructure condition of the ways where the cargo will move. In order to obtain a measure of transport costs in a specific mode in a uniform manner, available mode must be considered for minimizing the transport time. This cost and time along with the easy access of available mode will show for using the best option to load the cargo at port as per buyers demand. In general, the value (Tavasszy,1997) of time will vary among different goods because of differences between good in terms of their physical characteristics and logistical circumstances of the shipper and consignee.

5.5 Infrastructure and Port Development

In almost (Chopra and Meindl, 2007) all countries of the world government is taking the full responsibility or playing a significant role in building and managing the infrastructure for making effective network design

supporting the transport sector. Now-a-days, indirect investment of government, FDI, Public Private Partnership, BOT, etc are remarkable for developing the infrastructure as seen economic development of the country with the help of international donor like WB, ADB etc. A useful counterfactual to consider in evaluating optimal port governance mechanisms is private ownership of port facilities. In Bangladesh, the major two ports are comprehensive and operated by government. Recent changes to privatization, diverting the personal operations of selected quay or terminals to private competitive operators are remarkable trends on port development initiated by government. In a study of port investment, Goss (1968) argued that there is wider spread agreement that port facilities in many countries need improvement, partly to serve increased volumes of trade and partly because it appears that substantial economics in the cost of sea transport can only be achieved by improvements in seaports. The turnaround times of vessel or container stock at yards are the two main performance indicator of a seaport. Shipping business is highly expensive which will see the profit by maximum utilization. In addition, Branch (1998) reviewed the development of a country's infrastructure and particularly its port are accord a high priority in terms of investment and high technology. Port (CPA,2010) is a place where international shipping either originates, terminates or transits and thereby of necessity making it highly dynamic subject to keep pace with increasing commercial and economic activities. In spite of constraints in men and material and financial limitations the port authority has concentrated all its attention to the development of the port and better management so as make it the nerve centre of the economic progress.

Port (Clark et al, 2001) efficiency which is an important determinant of handling cost varies widely from country to country and, specially, from region to region. It is well know that some Asian countries (Singapore, Hong Kong) have the most efficient ports in the world, while some of the most inefficient are located in Africa (Ethiopia, Nigeria, Malawi) or South America (Colombia, Venezuela, Ecuador). Countries with inefficient seaports have higher handling costs and good infrastructure have lower seaport costs. It is reasonable to think that the determinants of port efficiency will not only consist of infrastructure variables, but also of management and/or policy variables. Overall level of infrastructure that assumed to be positively correlated with a country's level of seaport infrastructure because the better the infrastructure the higher the probability of an efficient port; that is, a positive coefficient for this variable. Therefore, any strategy aimed at integrating a country into the trading system has to take transport costs seriously. Seaport efficiency, though, is not just a matter of physical infrastructure. Moreover, Clark et al. (2001) research results suggested that some level of regulation increases port efficiency, but excessive regulation can be damaging. Effectively, performance objectives in operations (Slack and Lewis, 2008; Reid and Sanders, 2002) are as follows:-

- a) **COST.** Cost is the main elements of business. Less cost or minimize the access expenditure will help to increase the profit margin as well as decrease the misuses of the company resources. Logistical (Bowersox et al., 2007) systems should be designed to utilize transportation that minimizes the total transport cost.
- b) **QUALITY.** Quality as a competitive priority (Reid and Sanders, 2002) mainly focused on product and service quality. There will be no sacrifice in quality of the service.
- c) **TIME.** Time is the best priority for speed and on time replacement of the vessel. The port performance is measured by the speed of handling of cargo and vessels.
- d) **FLEXIBILITY.** Due to the pattern and style change of trade, environment change rapidly, including customer needs and expectation, the ability of the organisation to accommodate these changes can be a winning strategy.
- e) **DEPENDABILITY.** Organisation (Slack and Lewis, 2008) needs to achieve higher confidence in the operations for reaching to the final destination or result timely.

However, Palmer (2011) identified one point at which a cargo moves from sea to land or land to sea and that is port which attracted geographers, economic historians and sociologist. Recent technical changes in container and bulk handling, port development is essential for staying with the trade clock and reducing the turn round time of the vessel is the main target of authority because shipping is the low return business where investment is very high.

5.6 Seaport Development in Bangladesh

The development of Bangladeshi port or developing countries are highly depends on the finance of international donor or loan from international Bank. This literature review will help how Bangladesh can invest locally or international for their port development and infrastructure projects for making easy access to the sea port for using cheap maritime facilities in import and export business. Port (Ghosh and De, 2001) is the subsystems of total transport network and meeting place of other modes gateway for the entrance from land to water for crossing the border for representing the country in front of the world trader. In Bangladesh, port is the golden gate of the country because of its importance of serving the nation silently. The people of Bangladesh believed that country moves with the port especially for running the import export trade.

The maritime dependency factor of Bangladesh is about 30 % where 89% of international trade is handled by the prime port Chittagong as the principal gateway of international trade and commerce (Khanam

and Misir,2008). Unfortunately, this port is unable to provide prompt and efficient port operations comparing with private sector port operation in other countries of the world. Roy and Banerjee (2008) identified two great impediments to the development of Bangladesh for trade facilitation and these are poor transport facilities and infrastructure. Inadequate development of multimodal systems, Congestion and inefficiency at major port Chittagong, limited role of private participation in transport etc are the main reasons to develop a good transportation system. Razzaque (1997) added that poor port and related facilities are major factors hindering the development of a logistics system in the country.

Prospectus of Bangladeshi seaport is highly described by the noble prize winner Professor Mohammad Yunus (2006) as “Mega-port at Chittagong is the key to making Bangladesh the cross-road of the region” and WTO (2006) reported that “Despite rapid growth of overall trade volume in recent years, and cargo preferences available to Bangladesh flag vessels, a shortage of vessels in the national fleet has prevented them from meeting their allocated share in sea-borne trade” Along with the national vessel shortage Bhattacharya and Hossain (2006) found that lack of adequate infrastructure of ports (Both Land and Sea) which imposed heavy business costs and long lead times of processing. However, the current infrastructure of the country is so far from conducive to an effective business environment. In addition, rules and regulations are not appropriate for doing international trade. Timely notification of relevant and required amendments to existing laws has hardly been done to facilitate trade. In addition, a little scope of private sector participation in the policy formulations by way of providing suggestions through mutual discussions. State forwardly, inefficiency of the government bureaucracy has always been a major bottleneck for the country’s international trade.

However, they praised the initiative of government for facilitating the trade like customs administration modernization, development of the prime seaports, establishments of new infrastructures and simplification of documentation etc. A (Chodhury,2008) key effect of economic globalization is the continuing increase in maritime trade and traffic. Private participation in port sector is just starting and Bangladesh needs to provide credible assurances to investors that their efforts will not be thwarted by bureaucratic process, lack of adequate resolve in implementing declared policies or regulatory stranglehold. Quick, effective implementation of port reforms could help to mitigate a major constraint for the export-led growth which Bangladesh wants to pursue. Denoting Chittagong port as first generation port of the world, Begum (2006 :p-5) believed that “ There is no doubt that Chittagong port acts as the life line to sustenance and development of trade, commerce, transport and industry of Bangladesh”. She added that sustainable development of the country could be achieved by improving the transport sector including seaport facilities where seaport will be performed as per economic strategy of the nation and will act as trade facilitator. Overall, port leads the economic development of a country. Port operates as institutions for promoting industrialization, expansion of trade and commerce, sustaining stability in price levels, settlement of payments for imports and exports. Adam Smith, often regarded as the father of modern economics, saw shipping as one of the stepping stones to economic growth. A country can’t run without links to the outside world, can never, Adam Smith argued, achieving high levels of efficiency by shipping that means the special role of a port. The physical or quality performance of a port helps to contribute on the national development. The basic aim of economic planning is to bring about rapid economic development through the development of Agriculture, power, transport, communication, cottage industry and all other sectors of the country context Bangladesh.

To summarize, from the above literature review regarding port in connection to the intermodal systems, hinterland, and infrastructure of transport systems along with port own infrastructure of terminals, equipments and quays Bangladesh will find the ways to set up a strategies for developing the port services to play an important role in GDP directly and social services indirectly. On the other hand, discussion about economics and others will help to understand the financial outcomes from the port transport by improving the port facilities. Last but not least, overall, development of the Bangladesh maritime industry as an important sector of national economy. Generally, seaports (Wortelboer and Kolkman, 2010) compete with each other for cargo and turnover but cooperation between them has potential social and economic benefits and can possibly contribute to the national policy goals ruled by the national government for public interest. This kind of cooperation offers possibilities for counteracting the undesirable side effects of competition also increase the opportunities for the parties involved to improve efficiency. Finally, this literature review will help to compare and contrast the general peoples thinking about port economics and its application for improving seaport facilities in Bangladesh as derived demand of the nation to catalyst the national trade and offering transport service to the neighbours for earning foreign exchange.

6. Research Methodology

6.1 Research Orientation

Research (Kumar, 2008) is an intensive and purposeful search for knowledge in a scientific way as an academic activity for related information on a specific topic. Saunders et al. (2009) featured two kinds of business and management research, which are as follows:-

- i) Basic Research for expanding knowledge of processes of business and management which brought the results in universal principles relating to the process and its relationship to outcomes..
- ii) Applied Research for improving the basic understanding of particular business or management problem which results in solution to problem.

Bell (2009) found that many researchers in areas such as education, business, social science and health are directly connected with the practical outcomes of the research for knowing the facts and understand in order to act and improve comparatively. Maritime research is an infant stage and literature, resources and other references are not plentiful for exploring in detailed or for getting fruitful outcomes but the author tried to find some recommendations from the available sources. Before going to the research methodology, we need to know about the business research and maritime research because of business research activities in maritime affairs especially dealing with the core elements of maritime management like maritime transportation and seaport development.

Business (Cooper and Schindler, 2008) research is a process of planning, acquiring, analysing and disseminating relevant data, information and insights to decision makers in ways that mobilize the organisation to take appropriate actions that, in turn, maximize performance. In general, business research (Wisegeeck, 2010) refers to any type of researching done when starting or running any kind of business for starting any type of business requires research into the target customer and the competition to create a business plan. Research in maritime policy and management is, to a large extent, concerned with solving problems in the maritime industry and, at the same time, advancing knowledge that is industry specific. In order for it to have a greater contribution and, at the same time, achieve greater recognition outside industry boundaries, there is definitely potential for research outcomes to inform theory outside the maritime realm. Overall, maritime research especially in seaport development is the development of business research where port is the centre of business. Recent trend of moving cargo from one part to another commercially and using the available resources, created the opportunity for developing this trade and feel to do more research in maritime development for the interest of world trade.

Bryman and Bell (2003: p.54) added that “it is certainly true that exponents of the case study design often favour qualitative methods, such as participants observation and unstructured interviewing, because these methods are viewed as particularly helpful in the generation of an intensive detailed examination of a case. Generally, the basic or any other types of research are conducted by collecting the data from two broad sources primary and secondary. Patton (2002) stated that qualitative methods facilitate the real study and raised the issues, which are focused in depth and detailed. Comparing the qualitative and quantitative research methodology, Patton (2002 : p.5) argued that “ Generally, useful and credible qualitative research findings through observation , interviewing and content analysis requires discipline, knowledge, training, practice, creativity and hard work” . He added that approaching field work without being constrained by predetermined categories of analysis contributes to the depth, openness and detail of qualitative inquiry. Secondary sources (Roberts, 2004) are written by authors who interpret others works including abstracts, indexes, encyclopaedia , reviews and textbook which are useful because these are combined knowledge from many primary sources also provided a quick way to obtain an overview of a specific topic.

6.2 Methodology

The research methodology defines what the activity of research is, how to proceed, how to measure progress, and what constitutes success (Perez, 2008). This research is followed both the primary and secondary research methodology and combined by the qualitative method's of primary research and literature review method's of secondary research where data extracted from the primary and secondary both sources. Primary data was collected through the questionnaire and also through the literature review, which also identified relevant secondary sources. In terms of research methods, qualitative research analysis of focus group sessions and unstructured group interviews were employed (Dinwoodie, 2000:p-60) . The primary research methodology which applied in this research is basically for qualitative data analysis. In a positivist study, it is likely that the purpose of collecting qualitative data is to ensure that all key variables have been identified (Collis and Hussey, 2009). According to Roberts (2004:p.111), “the qualitative research is really an umbrella term that refers to several research genres that share certain characteristics”. Moreover , he added that the qualitative approach is based on the philosophical orientation which focuses the people's experience from their perspective on related subject arena.

Here, qualitative data were collected for getting the real time thought of peoples who are involved in Bangladesh port transport industry. A wide range of scholar and operations oriented persons are participated in this research. Primary research was conducted by interviewing “expert” in the subject matter over telephone. For this purpose, targeted the shipping expert, importer, exporter, port authority and government employee (Trade and shipping related) of Bangladesh and other countries like India, Nepal for telephonic interview. Physical interview is conducted with maritime professionals at London, UK. In this project, research is conducted as following diagrams:-

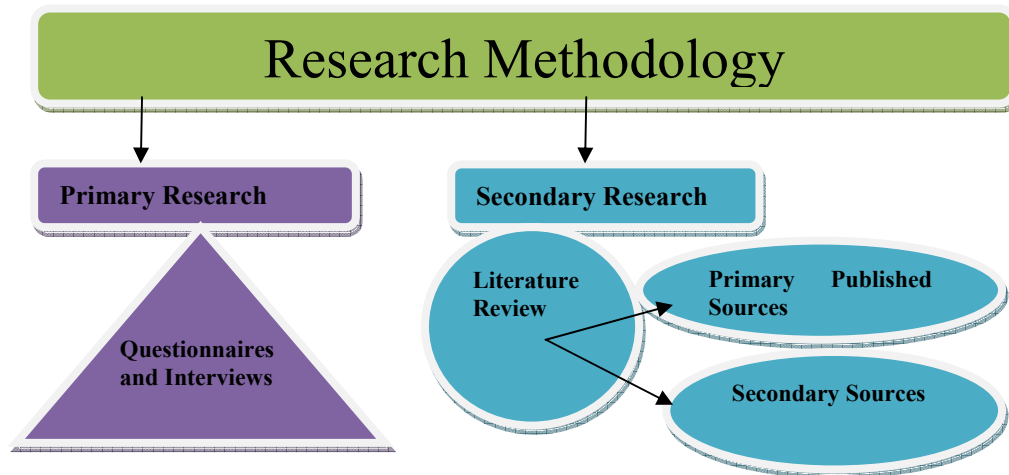


Figure 4. Diagram showing the Research Methodology used for this paper.

6.3 Data Collection

Data (Bell, 2009) collected by means of questionnaires, interviews or any other method mean very little until they are analysed and evaluated through compiling and connecting with the main topic of the research. Gathering large amount of information but not meaningful for this research should avoided because of the interest of making or getting good output from the data. Good data (Saunders et al,2009) has a number of characteristics which are collected and interpreted systematically, compiled accurately and having clear purpose: to find things out. This paper set on a case of port development and preliminary gathered the data from literature review based on research aims, objectives and statement of the problems. After that, the qualitative data were collected by questionnaire to the participants.

6.4 Data Compilation

There are two kinds of data collected for this case study. Firstly, as described earlier, we examined the published primary sources, as also relevant secondary sources and compiled the valuable information on port development finally. What are the views of great researchers regarding port development and its role in national economy? What mechanism Bangladesh should take for the port development? How it is interconnected with the economics? Overall, related literature is reviewed for compiling the data of port for getting the important measures to take initiative for sustainable development of Bangladesh port transport. Secondly, qualitative data by research questionnaire was collected from the participants and compiled to identify factors for increasing the efficiency of Bangladeshi ports.

6.5 Research Questions

This research is conducted by the participation of interested people who are related with the Bangladesh port transport directly and indirectly. There are five research questions which are selected finally. The results of the literature review influenced the choice of the questions asked.

Port users are playing a key role for choosing the mode of transport also port in their convenient ways like time and cost. Identifying the factors, which help to make a port successful, this research set the first question:-

01. What are the main factors which make a port successful from the point of view of port users?

Having the natural advantages of seacoast, available cargo for shipment also regional and international demand, why not Bangladesh is able to establish one international seaport? Investigating the barriers or reasons prompted the second question:-

02. What are the barriers to the development of an international seaport in Bangladesh?

Again, the natural advantage and location of Bangladesh is so attractive to serve her neighbours states by providing the maritime logistics facilities. The recent growing demand of these states created the opportunity to do business where domestic's service is facing the high cost due to the poor infrastructure and other facilities or national policy. Responding to these demand how Bangladesh will arrange the facilities, was the subject of the third question:-

03. How will Bangladesh meet the growing demand for maritime access (national, regional, international)?

Privatization is the current process for reducing the costs and funding the port transport infrastructure. Depending on foreign investors for infrastructure may not be in the national interest. National policy and strategic long term plan favours privatization but fearing for the creation of monopoly it is also a risk. What is

the thinking of peoples regarding port privatization and its risk in Bangladesh set the fourth question.

04. Are there any risks to the national interests of Bangladesh from port privatization?

An idea can change the style and bring the solution. For more relevant information and others set the last question:-

05. Is there anything else you would like to add on port development in Bangladesh?

6.6 Ethical Issue

Ethics and integrity of working are very important to complete the research without any interruption and overcome any obstacle faced by the researcher. Now-a-days, the ethical issues are big concern because of its importance for doing real works without any piracy or stolen others activity. Regarding ethical issue and its present situation, Jankowicz (2005 : p.62) stated that “The development of formally stated ethical guidelines for the conduct of project work is relatively neglected and, until 1998 or thereabouts, ethical guideline for research work was somewhat overlooked”. Most (Kumar, 2005) professions have established an overall code of ethics for conducting research in respective fields. Before undertaking taking the interview, in every case positive consent to participate was obtained from interviewees. They were assured that they and their country would not be identified by name in the research which used X, Y, Z instead of the original name and country.

6.7 Limitation

This project had faced exclusive limitation of data collection. The stakeholder of ports in Bangladesh did not disclose their views regarding national plan and transportation policy. Mention that shipping (Hawkins and Gray, 2000: p.49) publication and trade journals cover a wide range of subjects but they too document very little research work.

7. Results of Primary Research

The qualitative method of Primary research had used for this research to find out the thoughts of port users, stakeholders and others about port development in Bangladesh. Questionnaires were sent to 60 persons in the Bangladesh, UK, Singapore, USA, Japan and Australia where targeted the GOB employee, associations leaders, consultants and others who are engaged with the Bangladesh or foreign maritime sector. Getting the advantages of internet e-mailing system, questionnaires were sent through University of Greenwich student mail account. Finally, 50 persons are selected for this research because of their deep connection with the Bangladesh port development and expertise in shipping. Physical Interview, telephonic interview also conducted for getting the quick respond from the participants. Of 22 replies received, 12 through e-mail, 8 by conducting telephonic interview and 2 interviews conducted at London in UK physically.

7.1 Port Success

Q.1. What are the main factors which make a port successful from the point of view of port users?

Ans. On reply, development of transshipment areas in an appropriate geographical area by the development of infrastructure and ensure competitive prices and easy access and well developed embarkation facility quoted highly. In addition, capacity of handling both inbound and outbound cargo to cope with current and projected increase in volume in handling cargo and containers by creating business friendly environment with enough flexibility and accessibility in the organised way. Argued for planned handling of all incoming ships moored at Chittagong port outer anchorage also for planned scheduling, control and implementation of vessel arrival and departure. However, co-ordination and sufficient functional equipment with space with proper management and maintenance team. Strong port management authority who will exercises own faults with a good management system.

Moreover, argued for reducing of corruption in the whole system. Port administration should out of corruption for smooth transaction of the port activity especially in shipment. If the port authority take more time for shipment it decrease the uses of this port for this reason it should be tried to reduce time for shipment. Use of appropriate IT based documents and orientation of exporters and importers on use of IT. Technology and skill enabled quality service in terms of speed and time, safety and security overall good Security System. Remarkably, modern Inspection, monitoring and control of the cargo in respect of quality and quantity and Pre-shipment Inspection system and disposal of unclaimed and un-cleared cargo after minimum waiting period by somebody but all argued and requested to brought political stability at port for quick service and clearance of cargo from the vessel and yard. Special care needs to be taken for vessel turnaround time and dwell time.

7.2 Barriers to Port Development

Q.2. What are the barriers to the development of an international seaport in Bangladesh?

Ans. On reply the below answers listed in the paper:

Any default strategic plan and anti-conducive management and an inefficient focal point in the maritime industry

also not to identify effective future growth of cargo. Insufficient draft and narrow channels are using for incoming and outgoing activities at Port. Also shortage of infrastructural facility and cargo handling equipment. Absence of modern automated container handling facility and for break bulk ships. Labour unrest and cognizance of labour unrest and elimination of root cause by payment of wages in commensuration with skills of handling modern equipments. Continued depressed economy. Lack of farsightedness of our political leaders is the main barriers for an international seaport. Government policy, restrictions and limitations of Port Authority in terms autonomy, Political unrest and different political view, politically biased unethical trade unionism. Red tape activities within various Government offices/autonomous bodies and related stake holders, non attachments of professionals and skilled workforce in port operation, automation of port operational activities, negative approach and undue advantage seeking mentality of port users.

Sea pirates activities at outer anchorage. Trade union problem in Bangladesh. CBA activities of multiple services provider and user forum. Lack of proper risk management that concerned port security issues. Multi stage service delivery process from the port. Poor port management and corruption in customs department. Service delay and response delay. Lack of proper risk management. Shortage of fund for developing infrastructure at port. Awareness of the benefit of port privatization. Lack of openness of the steps taken by any government to the people. Lack of knowledgeable person to show the bargaining power in favour of Bangladesh.

7.3 Derived Demand of Port Transport

Q.3. How will Bangladesh meet the growing demand for maritime access (national, regional, international)?

Ans. On reply the below answers listed in the paper:

Decision of appropriate plan for strategic location of deep seaport. By establishing deep sea port facility which will start to serve this region to meet the growing demand. Development of a free-business zone. In addition, need to take initiative for world-class port services and comparative price. Establishment of world class infrastructure in port areas. Planning of established neighbourhood development for building trust in this region. Introduction of Automated Container handling system to increase cargo handling speed. Feasibility study of extension, modernisation of port with human resources and equipments. Legislative control of workers involving in anti-establishment activities declaring the ports and its channel as KPI (Key Point Installation).

Introduce bay Crossing container vessels of smaller drafts with lesser number of containers up to the river port in Dhaka. Increase of inland river ports and land ports. To meet the growing global demand our Port facility and off-dock (Private inland Container Depots) have taken plan to increase the security level up to the international standard. A long term policy and strategy on port operation and facility. Skilled and professional manpower engagement in the port operation activities regardless of any political enforcement. Extension of Chittagong port and utilization her vacant space. Need to solve the political problem and trade union problem in port.

7.4 Port Privatization

Q.4. Are there any risks to the national interests of Bangladesh from port privatization?

Ans. Very interesting question for the participants and expressed their opinion as follows:-

- There is a little chances of risk to the national interests from a port privatization rather would increase productivity and competitiveness attitude. The privatization will create many scopes to utilize much more resources as of competitive market with competitive labour costs. However, there will be risk involved if the privatization system will not be free from any complicity like government bureaucrats.
- Privatization is better, some time it becomes bureaucratic also .especially this country.
- No, but privatisation process has to be rigidly controlled and industry Must not be handled by any politically involved vested interest. As far, I know the private companies are participating in the Berth Operation, so I don't think there are any risks to the national interest for doing so. But before that Govt. Must insure and keep in consideration regarding the national security I think there are no risks in privatization.
- I think there are no risks in privatization.
- . Yes, but I am not interested to write the answer

From the above comments, it is clear that port privatization is a great problem in Bangladesh. Mention that Chittagong port is the most profitable public organisation in Bangladesh where privatization of some port services is going on.

7.5 Miscellaneous

Q.5. Is there anything else you would like to add on port development in Bangladesh?

Ans.

Regarding port development in Bangladesh, some participants added that only political commitments could

ensure effective and efficient trade union and port employee also proper monitoring by anticorruption team. One participant expected that infrastructure development is going on in full swing and very soon the automation of Chittagong Port will be completed which we believe will help all the users to export and import goods and materials in a safe, fast and easy manner. Moreover, the private off docks are handling almost 99% export of our country and they are also ready to take the challenge to serve the international community to get the full advantage of our current sea Port of Chittagong.

However they argued for “Now we are using our one port (Chittagong) extensively. For meeting the growing demand we may use another port located in Mongla more. This two is used hardly though it possible to use and have the potential. Relevancy with the subject is very important in qualitative research. Moreover, this research is highly seeking the minimum maritime knowledge for replying the structured questions. Easterby-Smith et al. (2009) reflected on qualitative research and argued that it is a creative process which aims to understand the sense that respondents make of their world. This section was aimed to find out the real time thoughts of the participants regarding Bangladesh port transport and its connection for the development of shipping industry. In addition, participant’s reflection will help to compare or contrast with the literature review so that research can find out some recommendations for improving the seaport facilities in Bangladesh and indicate the economic benefits from port transport. The economics (Rinman and Linden, 1978:p.130) of port investment ought to be based on a short enough lifetimes of the installations to allow ongoing adaptation of facilities to meet the constant changes to which the modern transport industry is subject.

8. Analysis

This section is trying to analyse the five questions answer by academic experts view about port development. Thirty two years ago Rinman and Linden (1978) identified two lines of development communication and transportation. To supply industry with raw materials and to distribute manufactured goods all over the world. Efficient port operation is a national concern. During (Branch, 1991: p.91) the past century Customs cargo clearance has become a very complicated procedure. To provide a record of export and imports, and so enable the government to assess and thereby control the balance of trade. A port’s (Alderton, 1984: p 168) hinterland is as large and available as the road, rail, barge and air interchanges facilities allow. Indeed, global (Selkou and Roe, 2004: p-25) economic changes are heavily interrelated and shipping is one of the main driving forces which lie behind this complex arrangement and interaction that inevitably occurs.

The development (Notteboom and Rodrigue ,2005) of global supply chains increased the pressure on three major places : Maritime Haul, Port Operations and Inland Freight Distribution. Inland accessibility is playing a significant role in port competitiveness because cargo handling efficiency is depends on the availability of inland transport in both export and import. Resources (Boyce,2002: p.1) and infrastructures represent two elements that interact in complex ways to support and shape economic activity. Alderton (1984: p 188) resumed that “The ship operator wants a quick and efficient turn around for his ship and a good turnout for the cargo” Port labour is the most likely cause for his possible frustration. Cost (Haralambides and Veenstra,2002: p.799) recovery and the pricing of port services are complex and controversial issues, both technically and conceptually because they deal with the development and provision of infrastructure; economic development; public investment; fiscal policy and the role of the state in economic activity.

Notteboom and Rodrigue (2005) identified three major steps in port development process as per above figure : setting, expansion and specialization. They argued for regionalization of port for serving other countries in a region for better productivity of port services. Context Bangladesh: having huge potentiality for developing its port as per the model of Bird (1980) as well as regionalization added by Notteboom and Rodrigue (2005).Containerisation (Reveley and Tull,2002:142) in particular required coordination between port and city planning over transport links and a shift of focus from ports alone to the total transport chain linking producers and consumers. The Container (Notteboom,2005: p.173) and inter-modality concept in a metamorphosis, characterised by technological innovations and changes in the organisation and structure of the distribution system.

In the privatization (Reveley and Tull,2002:145) and deregulation wave that ensued, two main arguments were used to justify moves away from the central planning of ports. First, competition encourages ports to provide better and cheaper services. Second, port users have the maximum freedom to pick a port that matches their needs, which in theory leads to the efficient movements of ships, cargoes and passengers. Regarding port privatization, Dowd (1988) positioned that privatization is not such a good idea. He argued that “ A public body can make decisions that are much more long term than a private organisation. A private organisation is worried about next quarter’s results but a public agency would more willing (and able) to accept lean years to accomplish something in the long run”(p-225).Justifying the privatization of port Reveley and Tull (2002) argued that a mixture of economic, budgetary and ideological reasons has driven the privatization . Private port is deregulated by the new management where deregulation has been so significant that stevedoring companies and rail and truck operators as traditional modal operators have significantly restructured their

operations in order to become market focused third party service providers of a range of integrated functions. In a survey, it is found that basic aim of port privatization is to reduce the cost and improve the productivity and efficiency, thereby enhancing overall economic performance.

On the contrary, port privatization created political or commercial ambiguity where government lost control power. But significantly, Port (Branch, 1998:p.172) Privatization offers an injection of private capital into the business, a greater focus on automation and productivity and, above all, a market-led strategy. Branch (1998:p.172) argued that port privatization encourages all employees to develop a marketing focus to raise the profile of the port and attract more business through being more competitive and providing quality of service. Tongzong (2005:p 175) refereed that the success of the port of Singapore developed not only its unique geographical location but also the result of proactive government intervention and the effective implementation of appropriate seaport policies also strategies which created an environment that nurtures openness, efficiency and accountability in its port operations and services. This example indicated that Bangladesh might turn into same position.

Overall, lacking exposure to full commercial competitive pressures, publicly owned and operated ports may have reduced incentive to operate efficiently and are often subject to political interference. These public ports can absorb scarce funds from local governments and drag down local economies. On the other hand, efficiently operated public ports, such as the ports of Los Angeles and Long Beach, are often targeted by cities that want to siphon off surplus funds. The natural tendency of all nations, including the traditional maritime countries, is to look at shipping from their own national perspective and to see where they can gain an advantage. Connectively, Shipping (Boyce, 2002) has always been a “networked” industry, and its history therefore has much to offer in terms of insights into the structure, processes and dynamics of the organisational form. Branch (1998) argued that ship operations are highly depends on the maximum efficiency of port especially in ship turnaround time. He also stated that good road, rail and canal communication should be available for increasing the port productivity.

9. Conclusion

The purpose (Jansson and Shreerson, 1982) of a port is to make possible a smooth transfer of freight between sea and land transportation. The (Chia et al., 2003) forces of globalization, rapid advances in transport technology and recent developments in the shipping industry have affected port operations and their bargaining position relative to that of the shipping lines. The journey of this project was started with a motto of finding some ways to show the economics of port transport by improving seaport facilities in Bangladesh. The Principal (Jansson and Shreerson, 1982) factors of production of a ports are quays, port cranes, stevedoring labour and administrative staff, transit storage space and time of ships and land transport vehicles. In addition, there are port inputs that are to a large extent fixed and independent of throughput such as the approach channel, the harbour basin and access roads.

Firstly, it is the derived demand for Bangladesh because of her continuous development of trade (Import –export). Moreover, regional demand of India, Nepal and Bhutan for using Chittagong and Mongla river ports of Bangladesh for their growing demand of port transport which are not feasible by their own country or land-locked situation. In addition, China and Myanmar both are seeking seaport facilities from Bangladesh as they are locating in a suitable location in Bay of Bengal or geographical advantages for minimizing cost and some of their trading commodity especially for import. Transit, Transshipment or corridor any facilities are highly required in this region for development. The author of this project is believed that Bangladesh can take this available opportunity as trade for proving the port transport facilities, which will add the economic benefits or increase GDP. The GDP (Khanam and Misir, 2008) growth rate is around 6 to 7 % but container growth rate is about 14 %. Mcconville (1999) argued that Industrial economic development is the central factor in the volume of international seaborne trade, but the volume can also be influenced by technological development as well as political factors.

Maximum output of the research came from the literature review and result of primary research where reader will find how port is functioning and playing a role in transport system affect on the economy of a country. In addition, the research also find how peoples are thinking on the development of Bangladesh port transport system as she haven't any good position in world port industry even in Asia.. The main work done by analysing the literature review and the answers of research questions by the participants on the survey. This case study got more speed when the author visited two major ports of Bangladesh, Chittagong and Mongla and discussed project details with the employee, workers, port users and other stakeholders. It is important to note too that having geographical advantages with linking facilities with neighbouring countries, the country is lagging behind in facilitating port services due to shortage of planning, good policy, and qualified personnel in this sector. However, finally, this project counselled some recommendations to overcome for situation and further development for structuring international standard port transport system. Overall, this paper will help the reader to take reference for any research on port development especially for Bangladesh context South Asia including

southern part of China and Myanmar, The author believes that Bangladesh will develop her port transport system to cope with the demand of globalization to stay with world trade.

10. Recommendations

Based on the research conducted for showing the economics of port transport by improving seaport facilities in Bangladesh, the following recommendations are suggested. Mention that all recommendations are the result of this study, will not be affected to any person, any organisation, or any government for implementing their own strategies:-

01. **National Port Policy.** Strategies (Hawkins and Gray, 2000) can be grouped into three levels : Corporate (Top- within the organisation Master Strategies), business and functional. (Lower level). For Master level strategies need to formulate National Port Policy for domestic purpose and Foreign Port Policy for using Bangladeshi port by others or transit policy for neighbours.
02. **IT Development.** It (Drewry,1998) is impossible to operate the port efficiency without information Technology. Need to establish minimum three main technology applications which are as follows:-
 - a) Portintranet- Internal management of port that will be used by port officials only.
 - b) Portextranet- External management with all users including shipping agents, freight forwarders, off docks, C&F and others.
 - c) PortGOVnet- Strategic and financial management with Government and Customs.
03. **Port Privatization.** Putting the main management of port on the hand of concerned ministry or government need to privatize various services to national people. Considering the present condition of Mongla port, need to fully privatize to provide port services to the neighbouring countries.
04. **Port Pricing.** The right (Haralambides and Veenstra,2002: p.782) prices can lead a port to prosperity and growth : the wrong ones can guide it to extinction or to the proliferation of subsidies and inefficiency. Depends on the commodity handling quantity and forecast , need to revise the pricing of port service but must different for other countries and must higher than the domestic cargo.
05. **Political Stability.** The political (Branch ,1998:p.183) and economic focus of port should be considered. Political stability and sound economic growth are desirable features. The opinion of political leaders may be different but must not interfere on the port and her supply chain activities for keeping the national interest.
06. **Environmental Management.** Need to sustain on environmental damage caused by air and water pollution because environmental management of ports and port areas concerns high standards of environmental protection and the goal of sustainable development.
07. **Performance Monitoring.** Branch (1998:p.183) added that the efficiency which is so essential to the efficient turnaround of vessels and continuous access to the port. The continuous (Cullinane,2002 : p.826) monitoring of comparative measures of performance in all relevant forms will become pivotal to the successful management of port and terminal operations.
08. **Container Off dock in major cities.** Like Chittagong, NBR can provide license for off-dock or ICD in major cities for inspiring the businessperson to establish industry.
09. **Transit .** Bangladesh is a place of transit country. Alderton (1984: p 180) Ports may be serving a regional trade and traffic may be dislocated by decisions of neighbouring countries. It is the great time to give transit facilities by imposing reasonable standard international pricing.
10. **Riverine container port.** Need to improve the existing river ports and develop as spoke ports by connecting Chittagong and Mongla for container transportation by barge . Some riverine container port may be used by India and Myanmar.
11. **Commercial zone.** Alderton (2005) stated that port is the major economic multiplier for the nation's prosperity because it is not only a gateway for trade but also an attracting place for commercial infrastructure in the form of banks, agents, storage, depots , distribution canthers etc as well as industrial activities. Bangladesh can establish commercial zone by cantering her ports. Industrial Park. Free Trade zone and EPZ may establish by connecting port or near port.
12. **Human Resources.** In an informal discussion, one respondent suggested that professional background of port managers many of whom are former naval officer is not suited to the demands and needs of running a port. Therefore, need to recruit professional people, well-trained staff who are highly qualified in maritime management.
13. **Utilization the capital of Chittagong Port.** At present, CPA has huge liquidity that can utilize on port development (This information is collected from reliable source during physical visit of Chittagong port by author) . Relatively, it may use for the development of Mongla Port and road construction.
14. **Infrastructure Development.** This is highly recommended to the government by PPP methods especially urgent construction of four lanes road of Dhaka-Chittagong for easy connecting of capital city with the main port.
15. **Cooperation and coordination.** The development (Reveley and Tull,2002:142) and operation of ports

requires cooperation and coordination between a myriad of public and private agencies, including port authorities, road and rail authorities, local councils, shipping companies, stevedoring companies and shipping agents. Port authority should organise regular meeting with them for identifying any problems and their possible solutions.

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