ISSN 0378-7532

MANAGEMENT DEVELOPMENT

VOLUME 33 APRIL-JUNE, 2022 NUMBER 2

A Quarterly Journal of
Bangladesh Institute of Management

BANGLADESH INSTITUTE OF MANAGEMENT

4, SOBHANBAG, MIRPUR ROAD, DHAKA-1207, BANGLADESH

The Bangladesh Institute of Management (BIM), established in 1961, has been entrusted with the responsibility of developing human resource and improving managerial skills and techniques at various levels of management. BIM imparts management training, provides consultancy services and undertakes research and publication in the related fields of socio-economic and management development.

BOARD OF GOVERNORS

Chairman:

Secretary	Ministry of Industries, Government of the People's Republic of Bangladesh

Members:

Director General	Bangladesh Institute of Management
Dean	Faculty of Mechanical Engineering, Bangladesh University of Engineering and technology
Additional/ Join Secretary*	Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh
Chairman	Bangladesh Chemical Industries Corporation
Chairman	Bangladesh Jute Mills Corporation
Chairman	Bangladesh Power Development Board
Chairman	Bangladesh Steel and Engineering Corporation
Chairman	Bangladesh Sugar and Food Industries Corporation
Chairman	Bangladesh Textile Mills Corporation
President	Federation of Bangladesh Chamber of Commerce and Industries
President	Metropolitan Chamber of Commerce and Industries
President	Bangladesh Employer's Association

Member Secretary:

Faculty Member	Bangladesh Institute of Management

- Nominated by the Finance Secretary
- Nominated by the Director General, BIM

MANAGEMENT DEVELOPMENT

A Quarterly Journal of Bangladesh Institute of Management

ISSN 0378-7532

VOLUME 33 APRIL – JUNE, 2022 NUMBER 2

Printed in June 2022

SUBSCRIPTION RATE
For
MANAGEMENT DEVELOPMENT

FOREIGN : US $ 50.00 or UK £ 40.00 per year
(US $ 25.00 extra if air mail delivery required)

INLAND : General Tk. 600.00 per year
Tk. 200.00 per issue

20% agents' discount, air freight extra and surface mail paid by the Institute. Payments to be made to the Director General of the Institute through bank drafts or postal/ pay orders.

SENIOR EDITOR
Bangladesh Institute of Management
4, Sobhanbag, Mirpur Road, Dhaka-1207, Bangladesh
Web: www.bim.org.bd e-mail: bim@bim.org.bd

CALL FOR PAPER

You are cordially invited to contribute articles for publication in the "Management Development", a quarterly publication of the Bangladesh Institute of Management (BIM)

In the 29th year of its publication, "Management Development" has always solicited articles on contemporary issues in the field of socio-economic, business management, human resource development etc. while articles that are based on empirical studies are preferred, articles on innovative and creative approaches to business, socio-economics, management, human resource development are always welcome. Please, find the **author's guidelines** for paper submitting manuscript/paper at the end of this Journal.

It is our firm conviction that your article will not only enrich our journal but will be of immense value in the advancement of management knowledge and practice in Bangladesh.

SEND YOUR ARTICLE TO

SENIOR EDITOR

MANAGEMENT DEVELOPMENT

Bangladesh Institute of Management
4, Sobhanbag, Mirpur Road,
Dhaka-1207, Bangladesh
Fax: +880-2-8114304
Email: bim@bim.org.bd

MANAGEMENT DEVELOPMENT

CONTENTS

VOLUME 33 APRIL – JUNE, 2022 NUMBER 2

Printed in June 2022

"RELATIONSHIP AMONG ECONOMIC GROWTH, ENERGY SUPPLY AND CO2 EMISSION OF BANGLADESH: AN ECONOMETRIC STUDY"

***Mashiur Rahman*[1]**

ABSTRACT

The energy sector development plans in Bangladesh are aligned with economic growth to ensure middle-income country status by 2031 and high-income country status by 2041. Natural gas remains the dominant source of energy supply for the last couple of decades and in the coming days, the share of coal and LNG will increase with an insignificant share of renewable energy. Because of this increasing trend of fossil fuel consumption, CO2 emission will also increase in the future. However, Bangladesh, in Nationally Determined Contributions (NDCs) 2021, has committed 15% of CO2 emissions reduction from the BAU scenario. In this situation, this paper attempts to investigate the causal relationship among the three variables: energy supply, CO2 emissions and economic growth in Bangladesh over the period 1990-2018 applying econometric analysis. These three-time series are found non-stationary based on Augmented Dickey-Fuller (ADF) test, and integrated of order one (l(1)) as the first difference of these time series are stationary. The Granger causality test revealed bidirectional Granger causality between (i) energy supply and CO2 emissions and (ii) energy supply and GDP. Also, there is unidirectional causality between GDP and CO2 emissions. In Johansen cointegration test, it is revealed that there is no cointegrating equation among these three variables, which implies there is no long-term relationship among CO2 emissions, GDP and Energy supply in Bangladesh. Based on these relationships, it is evident that economic growth in Bangladesh can be achievable by reducing CO2 emissions if the share of fossil fuels is reduced.

Keywords: *Energy Supply, economic growth, CO2 emission, N*on-stationary, *Granger Causality test, Cointegration.*

[1] ==

INTRODUCTION

A number of countries have committed ambitious targets to achieve net zero-emission by the second half of this century to combat climate change and actions towards a low carbon future, to keep global temperature rise well below 2^0C and even further to 1.5^0C above pre-industrial levels. The annual global CO2 emissions from the combustion of fossil fuels expect to rise from 34 Gigaton (GT) in 2020 to 36 Gigaton in 2030, and if emissions continue on this trajectory, this will lead to a temperature rise of around 2.7°C by 2100[2]. The Asia Pacific region emits 49% of global CO2 emission in 2019 and coal, the dominant source of energy supply in Asia pacific, contributes to 34% of global CO2 emission[3]. So, without energy sector transformation in the Asia Pacific region, the global CO2 emission reduction targets will not be achievable. The prominent discussions are what are the pathways of cost-effective technological options available for energy sector transformation, and what will be the economic impact of this energy sector transformation in the Asia Pacific region.

Over the past decade Bangladesh remains one of the fastest growing economies in the world with an average GDP growth rate of 6.83% with exceptional 3.5% GDP growth in 2020 due to the Covid-19 pandemic[4]. Aligned with this economic growth, the energy supply also increased with a computational average growth rate (CAGR) of around 4.21% during the last decade, and fossil fuel dominancy remains fixed throughout the decade. This fossil fuel dependency for energy supply will increase in the recent future due to high investment in coal power development. Despite multiple initiatives from government and development partners on clean energy technology dissemination, the share of renewable energy technology remains insignificance (0.3%) in the energy mix. To increase the share of renewable energy, additional investment in clean energy development should not jeopardize the overall economic growth in the long run. So, energy sector transformation towards clean energy requires an adequate study on energy demand and supply assessment, the cost-effective pathways for energy transition and the economic impact of this transformation.

CO2 Emission Scenario of Bangladesh:

Bangladesh is responsible for 0.27% of global CO2 emission and 0.54% of CO2 emission from the Asia Pacific region[5]. In 2018, the country emitted 82 Million Ton (MT) CO2 including 39MT from Electricity and Heat production, 18MT from Industry, 12MT from Transport, 9MT from Residential, and 4MT from the Agriculture sector (IEA 2018 data). The emission will increase in the future due to increasing fossil fuel dependence for

[2] IEA, 2021, Net Zero by 2050 A Roadmap for the Global Energy Sector, page-36
[3] IEA database 2019
[4] ADB, 2021, Country Partnership Strategy, Bangladesh, 2021-2025
[5] IEA CO2 emission statistics 2019

energy supply in electricity generation and industry sector and by 2030 the projected total GHG emission at BAU would be 409 MTC02e[6]. In Nationally Determined Contributions (NDCs), Bangladesh targeted GHG emission reduction of 27.56 MTC02e (6.73%) unconditionally and 62 MTC02e (15.12%) conditionally by 2030. Energy sector is the prime target of CO2 emission reduction followed by agriculture and livestock and urban waste management activities. The mitigation measures proposed in NDC are the implementation of (i) Energy Efficiency and Conservation (EE&C) plans, (ii) Solar Home System (SHS) programs, (iii) multiple options of renewable energy, (iv) dissemination of Improved Cook Stoves (ICS), (v) Brick kiln efficiency improvement, (vi) Waste to energy, (vii) Combine Cycle Power Plant (CCPP), (viii) supercritical technology in coal power plants, and (ix) wind and (x) grid-tied utility scale solar plants. The energy sector activities targeting CO2 emission reduction may impact the economic growth and energy supply in the country. So, it is important to understand the causal relationship among CO2 emission, energy supply and GDP of the country.

Bangladesh's power and energy sector development plan is targeted to secure future energy supply to maintain the robust economic growth that is aspiring to become an upper middle-income country by 2031 and high-income country status by 2041. The country's economic performance is impressive with Gross Domestic Product (GDP) growth averaging 7.6% during FY2016-2019[7]. In 2020 economic growth was 3.5% in the Covid-19 pandemic situation. The country's economy is moving towards modern industry and service sectors from its previous dominant agriculture sector. During FY2016-2019, the average growth rate in industry and service sectors were 11.5% and 6.5% respectively whereas agricultural sector grew at an average rate of 3.5%[8]. The 8th Five Year Plan projected 8.51% GDP growth by 2025 tackling the Covid-19 situation, with an average of 7.53% GDP growth during FY2020-2025. To meet this economic growth, the energy supply needs to be adequate in different sectors. In 2019, total energy supply was 1,808,505 Tera Joule (TJ), and energy consumption was 1,392,509TJ[9]. The computed annual growth rate of energy supply and consumption is around 4.2% and 4.4% respectively for the period of 2010 to 2019. The energy supply sources are natural gas, biofuel and waste, oil, coal and hydro with limited solar and wind capacity. Excluding the traditional supply of biofuel, the energy supply is dominated by natural gas, which is depleting in indigenous sources, followed by oil products and coal with an insignificant share of hydro, solar and wind sources. The table below shows the source-wise share and growth of energy supply.

[6] Nationally Determined Contributions (NDCs) 2021 Bangladesh (Update), August 2021, Page-4
[7] ADB Country Partnership Strategy Bangladesh, 2021-2025
[8] ADB Country Partnership Strategy Bangladesh, 2021-2025
[9] IEA Energy Supply statistics 2019

Table-1: Energy Supply

	Natural Gas (TJ)	Biofuel and Waste (TJ)	Oil(TJ)	Coal (TJ)	Hydro (TJ)	Wind and Solar (TJ)	Energy Supply (TJ)
2019	1,068,016	331,716	238,913	165,740	2,767	1,353	1,808,505
%	72.32%	18.34%	16.18%	11.22%	0.19%	0.09%	100.00%
CAGR	4.87%	-0.80%	4.70%	19.27%	-0.05%	15.15%	4.21%

Source: IEA energy supply data for Bangladesh

The energy-consuming sectors are Industry, residential, transportation, commercial, and agriculture sector. The energy consumption and consumption growth rate in different sectors are as below:

Table-2: Energy Consumption

	Residential (TJ)	Industry (TJ)	Transport (TJ)	Non energy (TJ)	Commercial (TJ)	Agriculture (TJ)	Non specified (TJ)	Energy Consumption (TJ)
2019	609,224	460,582	169,454	61,908	34,876	52,027	4,438	1,392,509
%	43.75%	33.08%	12.17%	4.45%	2.50%	3.74%	0.32%	100.00%
CAGR	2.46%	8.73%	4.99%	-1.05%	7.19%	3.28%	13.97%	4.43%

Source: *IEA energy consumption data for Bangladesh*

Number of econometric analyses have been conducted using time series data to view the causal relationship among CO2 emission, economic growth and energy supply in different countries including Bangladesh. These studies applied the Vector Error Correction model (VECM) to assess the long-run relationship and Vector Auto Regressive (VAR) model for analyzing the short-run relationship. Some studies also employed the Auto Regressive Distributed Lag (ARDL) model for estimation and forecasting. In most studies, the relationship between CO2 emission and economic growth exhibits the Environmental Kuznets Curve (EKC) hypothesis which is an inverted U-shaped relationship between environmental degradation and income per capita. However, the inconsistency in applying the econometric models with divergent study findings motivates further studies using recent time series data. The objective of this study is to investigate the causal relationships among three variables: CO2 emission, GDP and Energy Supply in Bangladesh over the period 1990-2018 by applying econometric analysis.

The subsequent section of the study includes: (i) primary energy supply in Bangladesh, (ii) study objectives, (iii) methodology and data analysis, (iv) findings, and (v) conclusion.

Primary energy supply in Bangladesh:

Natural Gas and LNG:

Natural gas contributes 72% of the total energy supply in Bangladesh excluding biofuel and waste. The estimated natural gas reserve in 28 gas fields including Zakigonj-1 was around 28.29 trillion cubic feet (TCF) and as of December 2020, 18.24 TCF gas was produced, leaving only 10.05 TCF of recoverable gas[10]. Natural gas is mostly used in power generation (61%) followed by industry, fertilizer, domestic, CNG, commercial and tea sector.

By 2021, the aggregate indigenous gas extraction capacity is 2,672 MMscfd including 107 gas-producing wells in 27 gas fields. Bangladesh Gas Field Company Limited operates 41 wells with 735MMscfd (28%) capacity, Sylhet Gas Field Limited operates 10 wells with 133 MMscfd (5%) capacity, BAPEX operates 15 wells with 156 MMscfd (6%) capacity, and IOCs (CHEVRON and TULLOW) operates 41 wells with 1648 MMscfd (62%) capacity. The average calorific value of indigenous natural gas is 1040.57 BTU/cft with above 96% methane content. At present, imported LNG gasification capacity is 1,000 MMscfd, which implies the total gas production capacity is 3,672 MMscfd and a yearly gas supply capacity of 1,340.28 BCF. The highest indigenous natural gas production was 973.3 BCF in FY2015-2016. Since then, indigenous Gas production started decreasing and with the existing extraction capacity, and the current gas reserve will exhaust within the next ten years. In the FY 2020-21, indigenous gas production was 889 billion cubic feet (BCF) and R-LNG import was 216 BCF, which implies that the total gas supply was 1,105 BCF[11].

LNG Supply:

Bangladesh started LNG import in 2018. Two Floating Storage Regasification Units (FSRU) (Excelerate Energy Bangladesh Limited and Summit LNG) with 500MMCFD capacity each are installed at Moheshkhali and long-term LNG supply agreements with Qatargas and Oman Trading International (OTI) are in place for an yearly supply of 1.8 million ton and 1.0 million ton of LNG respectively. As of June 2021, around 6.75 million ton and 3.69 million ton of LNG was imported from Qatargas and OTI respectively. Also, 17 agreements are in place with different suppliers to purchase LNG from the spot market. As of June 2021, around 0.69 million ton of LNG was imported from the spot market.

The gap between gas demand and supply is increasing, PetroBangla projects sharp gas demand increment in power and industry sector in recent future. The below table demonstrates the gas demand and supply gap in FY 2020-2021:

[10] PETROBANGLA Annual Report 2020, Page-31
[11] PETROBANGLA MIS report July 2021, Page-6

Table 4: Energy demand-supply gap

FY2020-2021	Power	Fertilizer	Captive Power	Industry	Commercial and Tea	CNG	Domestics	Total
Gas Demand (BCF)	2,197	316	480	925	38	139	425	4,520
Gas Supply (BCF)	426	65	169	182	7	35	134	1,018
Gap (BCF)	1,771	251	311	743	31	104	291	3,502

Source: *PETROBANGLA Annual Report and MIS Report*

For gas Exploration and development, the whole country is divided into 23 onshore blocks and model production sharing contracts (PSCs) are developed to award blocks to IOCs for exploration through competitive bidding. At present, CHEVRON and TULLOW are the two IOCs engaged with PSC to operate gas from four gas fields.

The offshore area covering more than 118,813 square kilometers in the Bay of Bengal is divided into 26 blocks in deep and shallow seas. Two blocks (SS-04 and SS-09) covering 14,300 sq-km in the sea were awarded to IOC through PSCs for gas exploration in 2014.

To enhance natural gas supply, the government has enhanced gas exploration activities, installation of wellhead compressors at Titas gas field, expansion of transmission and distribution network, installation of prepaid gas meters and others.

Natural gas consumption:

In the FY 2020-21, indigenous gas production was 889 billion cubic feet (BCF) and R-LNG import was 216 BCF, which implies that the total gas supply was 1,105 BCF[12] and total consumption was 1,017.53 BCF with system loss of 87.58 BCF. Natural gas is mostly used in power generation (58%) followed by industry (18%), domestic (13%), fertilizer (6.3%), CNG (3.4%), commercial and tea sector (0.7%).

Gas consumption in Power Plant:

The current capacity of gas-based power plant is 11,450MW (52% of total capacity) and in FY2020-21 electricity generation from these power plants was 48,403 GWh which is 60% of total electricity generation[13] and total gas consumption was 595BCF. Additional 16,080MW gas and a LNG based power plant will be added and a 2,118MW gas-based power plant will be retired from the electricity grid, implying the net 25,412MW of gas-

[12] PETROBANGLA MIS report July 2021, Page-6
[13] BPDB annual report FY 2020-21, Page-12,13

based generation by 2027[14], more than double the existing gas-based capacity. To fuel these gas-based power plants at optimal utilization requires more than 3,000BCF gas yearly against the current supply of 595BCF. The current natural gas demand and supply gap for power plants are around 1800BCF. If new gas fields are not discovered, LNG infrastructure is not developed and LNG price remains volatile in the international market, the expected economic benefit from these gas-based power plants is very gray.

Household consumption:

The 4.2 million domestic consumers nationwide consumed 132.7BCF gas in 2020-21. Of these domestic consumers, only about 0.35 million have come under prepaid metering coverage to date, while the rest needs these prepaid gas meters. Following the Government's target to install 2.0 million prepaid gas meters by December 2022, each of the gas distribution companies is making the move to buy and install prepaid gas meters for the remaining domestic customers

Gas Revenue:

Gas tariff for eight consumer categories includes charges for production, LNG, Gas Development fund, energy security fund, transmission, distribution and VAT. In FY2019-20, the six gas marketing companies sold 994.33BCF gas (both indigenous and imported LNG) and the aggregate price of this amount of gas was equivalent to $3.13 billion.

The category-wise gas revenue in FY 2019-20 is as below:

Category	Gas amount (BCF)	% of total Gas	Revenue collection ($ million)*
Power	455.90	45.85%	797.15
Fertilizer	54.55	5.49%	124.59
Industry	155.73	15.66%	537.47
Captive Power	151.55	15.24%	661.51
CNG	36.10	3.63%	416.34
Commercial	6.67	0.67%	41.66
Residential	132.69	13.34%	546.05
Tea	1.14	0.11%	4.05
Total	994.33	100.00%	3,128.82

*Calculated based on annual reports of gas distribution companies

[14] Progress report of electricity sector, Planning Division, BPDB, 12 May 2022

Petroleum Oil:

Petroleum oil consumption in FY 2020-2021 is around 62.99 million metric ton of which 92% is imported and 8% is from domestic sources[15]. The oil products are mainly diesel (73%) followed by furnace oil (8.87%), Jet A-1 (3.8%), petrol (6%), octane (4.8%) and others. Transport sector consumes 62% of total oil products followed by agriculture (15.5%), industry (7%), electricity generation (10%), domestic (1.5%) and others. The current oil storage capacity is 13.9 million metric ton and is able to meet oil demand of 30-40 days. Bangladesh Petroleum Corporation (BPC) has initiated a number of projects to increase storage capacity. The oil pipeline construction projects are (i) India-Bangladesh friendship pipeline project to import oil from Numaligarh, India, (ii) Chottagram-Dhaka pipeline project, (iii) Pitalganj-Kurmitola pipeline project, (iv) single point mooring pipeline from Kutubdia to Potenga for imported oil.

Coal:

Five coal fields were discovered in the North-western part of Bangladesh with a total estimated reserve of 7.80 billion metric tons[16]. Out of these five coal mines, the Barapukuria coal mine with annual capacity of 1 million metric tons is operational and producing approximately 3,000-3,500 metric tons of coal daily. This coal is fully supplied to Barapukuria Thermal Power Plant Unit-1 (125MW) with a rate of $130/ton. The total coal-based power plant capacity is 1,147MW (5% of total electricity generation capacity) including Payra 1,320 MW Thermal Power Plant which started commercial operation since December 2020 with imported coal. According to PSMP-2016, the demand for coal in 2030 would be 58 million ton/year.

Renewable Energy:

The current installed renewable energy capacity is 787MW predominantly with 553MW of solar and 230MW of Hydro power capacity (SREDA website). The installed renewable energy capacity is 3% of the current installed capacity of 25,566MW, against the target of 10% of installed capacity by 2021. In FY 2020-2021, renewable energy generation was 0.2% of total electricity generation of 80,423 GWh electricity[17]. In the 8th five years plan, the government has set a target to add 2,362MW renewable energy capacity by 2025 with 2,014MW of solar, 300MW of wind and 48MW of waste to energy.

[15] BPC Annual Report 2020-2021, Page-18
[16] PETROBANGLA Annual Report 2020, Page-29
[17] BPDB Annual Report 2020-2021, Page-13

Electricity Sector:

As of April 2022, the total electricity generation capacity is 25,566MW including 2,800MW of captive generation and 418MW of off-grid renewable energy generation. The grid-connected generation capacity of 22,348 MW comprises 20,729MW of fossil fuel-based generation, 1,160MW of Import, 230MW Hydro and 229MW grid connect solar system and the share of this capacity among public, private, import and joint venture are 44%, 45%, 5% and 6% respectively. The fuel mix of the generation capacity comprises natural gas (51%), furnace oil (28%), diesel (6%), coal (8%), hydro (1%), on-grid solar (1%) and import (5%).

The electricity generation sub-sector remained the key priority concern of the government in the last decade. To facilitate rapid action in enhancing the electricity generation, transmission and distribution capacity, the government approved "the Quick Enhancement of Electricity and Energy Supply (Special Provisions) Act, 2010" overriding other laws especially the Public Procurement Act-2006, bar to the justification of court etc. This act supplemented with favorable power purchase agreements, tax incentives and import facilitation for power equipment leveraged huge public and private investment in fossil fuel-based electricity generation, resulting in overcapacity, low utilization and significant capacity charges for ideal power plants at present, triggering the urgent assessment of energy and power balance of the country. The fantasy of fossil fuel-based overcapacity has faded the energy efficiency improvement and renewable energy dissemination potential to some extent. Around 18,000MW of fossil fuel-based generation capacity was added during the last decade whereas only 230MW of grid-connected solar system was added in the same period.

Bangladesh Power Development Board (BPDB), the sole buyer of bulk electricity, purchased electricity from generation companies at an average cost of 6.61tk/kWh and sold electricity at an average rate of 5.26tk/kWh to the distribution companies in FY 2020-21. Due to this gap, the subsidy amount rose to $1.3 billion which was $875 million in FY2019-20. The rising trend will continue in this fiscal year due to the sharp increment of fuel price in the international which market, increasingly poses risk in financial sustainability.

BPDB is planning to ensure electricity supply capacity of 41,400MW to fulfil the demand of 22,800MW by 2027[18]. By 2027, around 26,600MW of fossil fuel-based generation capacity will be added, of which LNG based will be 13,137MW,coal-based will be 9,600MW, gas-basedwill be 3,000MW and HFO based will be 268MW and renewable energy-based will be 3,500MW and nuclear-based will be 2,400MW. With this capacity addition, there will be above 40% surplus capacity throughout 2027.

[18] Progress report of electricity sector, Planning Division, BPDB, 12 May 2022

Acknowledging the surplus capacity in electricity generation, the 8th five year plan focuses on energy efficiency improvement, renewable energy development and financial sustainability through adopting least-cost generation, transmission and distribution options, resource mobilization and private sector participation. The upcoming integrated energy and power master plan will be assessed based on this direction as well as supporting climate change mitigation issues in the energy sector.

Liquefied Petroleum Gas (LPG) is considered as clean cooking fuel alternative to the traditional use of biomass for cooking as it reduces the risk of indoor air pollution than traditional biomass stoves, saving time and biomass. The commercial import of PLG started in 2011-2012. In Bangladesh the yearly LPG demand is around 1.2 million tones and except in Covid-19 lockdown, the per moth demand for LPG is around 80,000 tones and the yearly supply is around 825,000 tones with per capita consumption of around 5kg. The number of LPG consumers is around 3.8 million. LPG will be the main fuel for households in future considering depletion of indigenous natural gas, private sector's dominance in the supply chain, its' user-friendliness, accessibility, financial affordability, cleanliness and reduction of household air pollution etc. The sector is currently expanding at around 8-10% annually and by 2030, LPG will reach to 23-27 million which is around 55-65% of total households at that time. The current bottleneck in LPG market is the LPG terminal constrain as the existing terminals at Mongla and Shitakundo are not adequate to supply adequate LPG. Government has plan to construct deep sea LPG terminal at Matarbari to ensure supply of 1.2 million tons of LPG yearly.

Biogas:

Biogas is primarily a mixture of carbon dioxide and methane and is produced through anaerobic digestion of organic material. It is one of the most environmentally friendly and clean cooking fuel options. Biogas installation started in the mid-90s and as of 2018, around 102,808 biogas digesters have been installed in Bangladesh. IDCOL runs the largest biogas program in Bangladesh.

Pellet, Briquettes:

Though pellet and briquettes are less emitting compressed biomass fuel, they are not much popular in Bangladesh due to some factors such as production and availability of pellets and briquettes, comparatively high cost of stoves, cooking behavior of people etc.

Ethanol:

Ethanol gel is made from molasses, a byproduct of sugar production. Though initiated by donor-driven projects, the supply chain of ethanol gel is yet to be established in Bangladesh for cooking purposes.

Econometric analysis:

Problem statement and Rational:

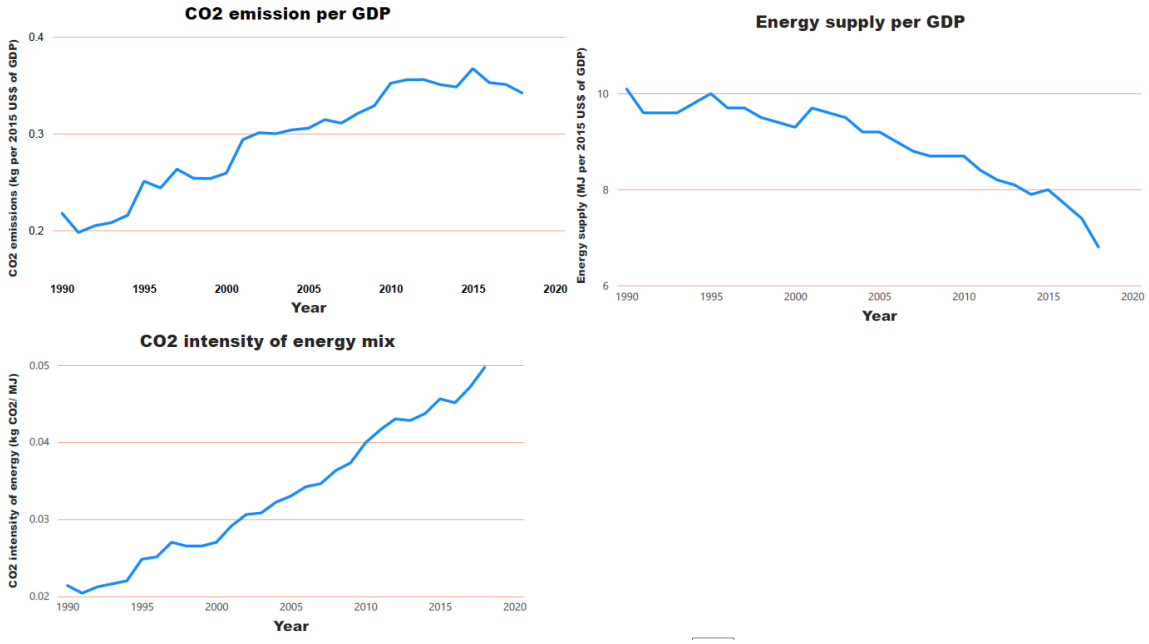
To maintain stable economic growth, government is implementing multiple measures to increase energy supply, mostly fossil fuel-based. The addition of around 26,000MW of natural gas/LNG, coal, and HFO based power plant in the recent future will increase CO2 emissions for electricity generation. The consumption of around 40 million tons of coal per year in the coal-based power plant will be the major contributor of CO2 emissions. On the other hand, the government is trying to reduce CO2 emissions to achieve NDC targets. As a developing country, Bangladesh cannot afford the risk of economic downturn due to the lack of energy supply without fossil fuel sources at present situation as the possibility of massive addition of renewable energy in energy mix in the recent future remains gray.

To reduce the CO2 emission from the overall economic activities, the CO2 emission linkage with economy and energy sector needs to be assessed for long term and short-term basis. The cointegration assessment and the direction of causality among GDP, Energy Supply and CO2 emission will demonstrate the relationship among these variables. This paper will try to explain the bellow issues-

- Is there any causal relationships among energy consumption, economic growth and CO2 emission in Bangladesh?
- Can economic growth be possible without deteriorating environment in Bangladesh?

The null hypothesis is GDP, energy supply and CO2 emission are cointegrated, which implies there are long term relationship among these variables.

The Environmental Kuznets's Curve (EKC) hypothesis has been widely referred by researchers in analyzing the GDP, energy supply and CO2 emission nexus. This hypothesis assumed that there exists an inverted U-shaped relationship between environmental degradation and income per capita. According to this hypothesis, environmental pollution exhibits an increasing trend during the initial stage of industrialization and low per capita income and gradually decreases after a certain level of per capita income. In Bangladesh, the CO2 emission per GDP is increasing with decreasing energy intensity per GDP demonstrating energy efficiency improvement. However, the CO2 intensity of energy mix is increasing and in the coming future, due to the addition of coal and LNG based power plants for electricity generation, CO2 intensity of energy mix will further increase. The energy supply planning in Bangladesh is linked with GDP and increment of energy supply will cause more CO2 emission because of fossil fuel dominance in energy mix as evident in the below graph. However, downward trend in energy supply per GDP exhibits the potential of downward trend of CO2 emission per GDP in future. Apart from graphical analysis, the econometric analysis will exactly analyze the relationship among these three variables.



Research objective:

The main objective of this study is to assess the short-term and long-term relationship among GDP, energy supply and CO2 emission in Bangladesh which will be complementary for energy sector development planning.

Methodology and Data Analysis:

In this econometric study, the GDP at current US$ refers to the economic growth indicator; the CO2 emissions in kilotons refers to emission stemming from the burning of solid, liquid and gas fuels and gas flaring and Energy supply in tera joule refers to primary energy supply before transformation to other end-use fuels. The time series data of GDP (Current US$) and CO2 emissions (kt) are collected from World Development Indicators (WDI) and Energy Supply (TJ) data is collected from IEA data sources. All the three time series data are from 1990 to 2018 with 29 observations as below:

Table 5: Time Series Data

Year	GDP (current US$)	CO2 emissions (kt)	Energy Supply (TJ)
1990	31,598,341,234	11,520	533,940
1991	30,957,483,950	10,830	526,090
1992	31,708,874,594	11,820	554,918

Year	GDP (current US$)	CO2 emissions (kt)	Energy Supply (TJ)
1993	33,166,519,418	12,570	578,549
1994	33,768,660,883	13,540	611,932
1995	37,939,748,769	16,550	661,143
1996	46,438,484,108	16,820	666,735
1997	48,244,309,133	18,970	695,757
1998	49,984,559,471	19,250	717,345
1999	51,270,569,884	20,110	745,360
2000	53,369,787,319	21,650	775,764
2001	53,991,289,844	25,780	850,301
2002	54,724,081,491	27,430	871,175
2003	60,158,929,188	28,630	903,379
2004	65,108,544,250	30,530	922,346
2005	69,442,943,089	32,710	967,786
2006	71,819,083,684	35,900	1,031,228
2007	79,611,888,213	37,990	1,077,648
2008	91,631,278,239	41,580	1,128,270
2009	102,477,791,472	44,750	1,184,680
2010	115,279,077,465	50,580	1,247,630
2011	128,637,938,711	54,420	1,289,266
2012	133,355,749,482	57,990	1,336,505
2013	149,990,451,022	60,580	1,397,550
2014	172,885,454,931	63,800	1,437,010
2015	195,078,678,697	71,690	1,494,959
2016	221,415,188,000	73,740	1,604,686
2017	249,710,922,462	78,710	1,640,958
2018	274,038,973,437	82,760	1,631,468

The econometric analysis of these time series in this study followed log transformation, Unit Root Test for stationarity check, Cointegration test, Vector Autoregressive (VAR) model and Vector Error Correction (VECR) model development if there are cointegrations among the variables, and diagnostic test.

Unit Root Test:

In time series data, unit root test is required to identify the stationarity of the time series if the current value of a variable depends on the past value of the same variable. Non-stationary time series may generate spurious regression results and hence nonstationary time series need to be converted to stationary time series. A time series is stationary if its mean and variance do not vary systematically over time. The Augmented Dickey-Fuller (ADF) test is applicable for unit root test to avoid the problem of autocorrelation. The ADF test includes the lagged value of the dependent variable in the equation and the error term is the purely white noise error term. The ADF test equation with drift and trend is as below:

$$Y_t = \rho Y_{t-1} + u_t;\ \ \delta = \rho - 1\ and\ \ \Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta Y_{t-i} + \varepsilon_i$$

The null hypothesis (H0) is the presence of unit root (δ=0) and series is non-stationary. At δ=0, the estimated t values of coefficient of Y_{t-1} follow the tau statistics computed by Dickey and Fuller. The alternative hypothesis (H1) is the absence of unit root (δ is less than zero) and time series is stationary. If δ is greater than zero, the time series may be explosive, and such condition has been rejected. The sign of the coefficient of Y_{t-1} must be negative. If the computed absolute value of the tau statistics of the coefficient of Y_{t-1}exceeds the critical tau value, the null hypothesis will be rejected. Rejection of null hypothesis means no unit root and time series is stationary. The summary of the ADF test on three time series is as bellow:

Table 6: ADF test result

Variable	Coefficient of Y_{t-1}	Tau statistics of Y_{t-1}	5% Critical tau value	Decision
CO2 (drift)	Negative	-0.084	-1.706	Non-Stationary
GDP (trend)	Negative	-0.994	-3.588	Non-stationary
Energy supply (drift)	Negative	-0.392	-1.706	Non-stationary
First Diff. CO2 (drift)	Negative	-7.561	-1.708	Stationary
First Diff. GDP (trend)	Negative	-3.829	-3.592	Stationary
First Diff. Energy supply (drift)	Negative	-6.047	-1.708	Stationary

In ADF test, the three-time series GDP, Energy supply and CO2 emission are found non-stationary. The first difference of these time series are stationary, implies that all the three time series are integrated of order one *(I(1).*

Cointegration test:

Two variables are cointegrated if they have a long-run or equilibrium relation between them. Most economic theories are based on equilibrium scenario. Cointegration test is also a pre-test to avoid spurious regression situation. This study applied the Johansen cointegration test using three variables, Vector Autoregressive (VAR) model for checking the cointegration among these three variables. In this model, the dependent variables are the current value of three variables: GDP, Energy Supply and CO2 emission, whereas the independent variables are the lag values of these variables. In this model, all variables have equal lags and specified in level. The VAR model is estimated by Ordinary Least Square (OLS) estimation. The optimal lag is determined as four by using AIC information criteria. All the variables in the VAR system are endogenous, there are no exogenous variables. The stochastic error terms are the impulse or innovation or shocks. In regression analysis of the equations in the VAR model, the lag value of independent variables can impact the current value of dependent variable if the coefficient of the independent lag variables are statistically significant. The Granger Causality test, developed by Granger (1969, 1980, 1988) will analyze the direction of causality.

The three variable VAR model are:

$$LnGDP_t = a + \sum_{i=1}^{k} \beta_i \, LnGDP_{t-i} + \sum_{j=1}^{k} \emptyset_j \, LnEnergy_{t-j} + \sum_{m=1}^{k} \varphi_m \, LnCO2_{t-m} + u_{1t}$$

$$LnEnergy_t = b + \sum_{i=1}^{k} \beta_i \, LnGDP_{t-i} + \sum_{j=1}^{k} \emptyset_j \, LnEnergy_{t-j} + \sum_{m=1}^{k} \varphi_m \, LnCO2_{t-m} + u_{2t}$$

$$LnCO2_t = c + \sum_{i=1}^{k} \beta_i \, LnGDP_{t-i} + \sum_{j=1}^{k} \emptyset_j \, LnEnergy_{t-j} + \sum_{m=1}^{k} \varphi_m \, LnCO2_{t-m} + u_{3t}$$

Granger Causality test:

A variable x is said to Granger-cause of a variable y if, given the past values of y, past values of x are useful for predicting y. In Granger Causality test on lagged explanatory variables, the null hypothesis is no Granger Causality exists and alternative hypothesis is opposite to null hypothesis. The null hypothesis will be rejected if the probability value of the CO2-statistics is less than or equal to 0.05.

In the CO2 emission equation, the coefficients on the four lags of GDP are jointly zero as the null hypothesis, that GDP does not Granger-cause CO2 emission, cannot be rejected, however, the coefficients on four lag values of energy supply Granger-cause CO2 emission as the null hypothesis can be rejected. In the GDP equation, the coefficients on

four lag values of both energy supply and CO2 emission Granger-cause GDP as the null hypothesis can be rejected. In energy supply equation, the coefficient on four lags of both GDP and CO2 Granger-cause energy supply as the null hypothesis can be rejected. In Granger causality test, is observed that there are bidirectional causalities between (i) energy supply and CO2 emission and (ii) energy supply and GDP and unidirectional causality between GDP and CO2 emission as CO2 emission Granger causes GDP. The Granger Causality test summary is as below:

Table 7: Granger Causality test results

Null Hypothesis	Prob. chi-square	Decision
GDP does not Granger cause CO2 emission	0.075	GDP does not Granger cause CO2
CO2 emission does not Granger cause GDP	0.028	Unidirectional causality; CO2 emission Granger causes GDP
Energy Supply does not Granger cause CO2 emission	0.00	Bidirectional causality Energy Supply Granger causes CO2 emission
CO2 emission does not Granger cause Energy Supply	0.00	CO2 emission Granger causes Energy Supply
Energy Supply does not Granger cause GDP	0.04	Bidirectional causality Energy supply Granger causes GDP
GDP does not Granger cause Energy Supply	0.00	GDP Granger causes Energy Supply

Cointegration test:

To identify the long-term relationship among these three variables, Johansen cointegration test with trace test with four lags was applied. The null hypothesis of this cointegration test is no cointegration exist and alternative hypothesis is null hypothesis is false and if the Trace and Max statistics exceeds 5% critical value, the null hypothesis can be rejected. The result of Johansen cointegration test revealed that there is no cointegrating equation among these three variables as trace value is lower than the 5% critical value, which implies there is no long-term relationship among CO2 emission, GDP and Energy supply in Bangladesh.

Findings and Policy implication:

In all these three variables, upward trends were observed and The Augmented Dickey-Fuller test (ADF) revealed that the time series are non-stationary with unit root. However, the first difference of all these variables are stationary, implies all these time series are of integrated order one, *I(1)*. For cointegration test, Vector Autoregressive (VAR) model with three equations was developed with four optimal lags identified through AIC.

The Granger Causality test was applied to identify the direction of causality. The Granger causality test revealed energy supply, and CO2 emission have bidirectional causality, means previous values of energy supply effect the current CO2 emission in short run and future CO2 emission will be dependent on current energy supply. Traditionally, the energy supply in Bangladesh is fossil fuel dominant with insignificant share of hydro and solar. This energy mix will cause CO2 mission in future also as the share of coal, and LNG/natural gas will increase in near future with insignificant share of renewable energy. To combat CO2 emission from energy sector, the policy directives should pinpoint towards renewable energy development to ensure maximum utilization of renewable energy potential in the country. The test result also revealed that energy supply and GDP have bidirectional causality, implies that previous energy supply may affect the current GDP and vise-versa. The bidirectional causality between GDP and energy supply has significant policy implication, implies that accelerating GDP growth, the energy supply must be ensured. Considering the bidirectional causal relations between (i) energy supply and CO2 emission and (ii) energy supply and GDP, the energy supply in economy should focus on developing renewable energy, securing optimal resource allocation, development of energy transmission and distribution of infrastructure and financial sustainability. The price volatility of imported coal and LNG in international market in recent past remains a warning for energy supply planning, the surplus generation capacity is bleeding in financial sustainability whereas transmission and distribution capacity are constraining the economic supply of energy to the economic agents. The 8th five-year plan acknowledges the pivotal role of energy sector in emerging economies in accelerating growth. The last two five-year plans gave high emphasis on increasing generation capacity, resulting surplus installed capacity at present, exposes the financial sustainability of the sector. Based on this realization, the 8th five-year plan focuses on energy efficiency improvement, renewable energy and financial sustainability to achieve competitive and environmentally sustainable least- cost power generation, transmission, and distribution system along with greater private sector participation and own resource mobilization. The energy sector policies at this situation should focus on improving energy efficiency, renewable energy, prioritizing transmission and distribution investments for optimal use of existing capacity, which abandon the expensive pipeline of coal and LNG based power plants that are yet to begin construction.

There is also unidirectional causality between GDP and CO2 emission as CO2 emission Granger causes GDP, implies the lag values of CO2 emission effect the current GDP at short run. Applying Johansen cointegration test, it is revealed that there is no cointegrating equation among these three variables, implies there is no long-term relationship among CO2 emission, GDP and Energy supply. The non-existence of long-term relationship among these variable establishes the potential of decarbonization of emerging economy of Bangladesh.

REFERENCE

ADB. 2021. Country Partnership Strategy, Bangladesh, 2021-2025

Nationally Determined Contributions (NDCs) 2021 Bangladesh (Update), August 2021

ADB. Country Partnership Strategy Bangladesh, 2021-2025

IEA. 2022. Energy Supply statistics 2019

IEA. 2021. Net Zero by 2050 A Roadmap for the Global Energy Sector

N. Gujarati. 2013-2014. Basic Econometrics, fourth edition

Bangladesh Petroleum Corporation, 2021, Annual Report 2020-2021

PETROBANGLA. 2021. Annual Report 2020

Bangladesh Power Development Board. 2021. Annual Report 2020-2021

Titas Gas Transmission and Distribution Company Limited. 2021. Annual Report 2020-21

Karnaphuli Gas Distribution Company Limited. 2021. Annual Report 2020-21

Sundarban Gas Company Limited. 2021. Annual Report 2020-21

Bakhrabad Gas Distribution Company Limited. 2021. Annual Report 2021

Pashchimanchal Gas Company Limited. 2021. Annual Repot 2021

DOES COMPENSATION SATISFACTION INFLUENCE TURNOVER INTENTION? A STUDY AMONG JUNIOR EXECUTIVES IN BANGLADESH

Akhund A. Shamsul Alam*

ABSTRACT

The purpose of this study was to look at how satisfied employees are with various aspects of compensation and it affects their turnover intentions. A total of 151 junior executives from conveniently selected 14 hospitals and clinics in Bangladesh were interviewed. The "Pay Satisfaction Questionnaire" developed by Heneman & Schwab (1985) and the "Turnover Intention Questionnaire" developed by Mobley et al. (1978) were used to collect data. Both questionnaires employed a 5-point Likert scale. The study revealed that over three-in-ten respondents intended to quit their existing organizations. Moreover, their level of satisfaction with overall compensation was found slightly higher than average (2.71). Among the different dimensions of compensation, respondents indicated very poor satisfaction with the "benefits" package (mean=2.29). In contrast, they extended their satisfaction to some extent with "pay raise" (mean=3.08) and "pay structure" (mean=2.92). Levels of satisfaction toward "pay level" were marked just above the average line (mean=2.56). Finally, the study found that two of the four compensation components, namely benefits and pay raises, had a significant negative impact on the intention to leave.

Key words: Compensation Satisfaction, Turnover Intention, and Junior Executives.

* Senior Management Counselor, Bangladesh Institute of Management (BIM)

1. INTRODUCTION:

In today's business world, talented employees are recognized as an important source of competitive advantage. Retaining them is very critical for an organization's success. However, employee turnover in organizations is a major challenge across the globe. According to a recent Willis Towers Watson survey, more than half of all firms around the world are having trouble maintaining some of their most valuable employee categories. The survey also revealed that almost a quarter of employees are at a high risk of turnover. Many of them have mission-critical abilities and are top performers, or have the potential to be top performers in the future (Danha, 2021).

It is evidenced that high employee turnover adds to expenses and also has a negative effect on productivity. The average cost of replacing an employee, according to the Center for American Progress (CAP), ranges from 16 percent to 213 percent, depending on the individual's wage level (Boushey & Glynn, 2012). Further, because the firm has fewer team members to get things done, losing employees also leads to decreased productivity. As the remaining employees are overworked to make up the difference, their stress levels rise, making them less likely to perform at their best (Smith, 2021). On the other hand, keeping talented employees carries countless benefits. Long-term employees commonly have higher productivity and efficiency on the job than new employees, due to their length of service with the organization (Armstrong, 2001).

To overcome the difficulty, academics have focused on the intention to turnover rather than the actual turnover from the outset. They suggest that leave intent can be used as a proxy for and predictor of real employee turnover behavior (Cohen et al., 2016). Because real turnover is more difficult to assess than intentions due to the multiple external factors, Bluedorn (1982) and Price and Mueller (1981) recommend utilizing turnover intention rather than actual turnover. Firth, Mellor, Moore, and Loquet (2004) consider turnover intention as a strong indicator of actual turnover.

Compensation satisfaction matters in this regard as it is directly related to turnover intention (Heneman, 1985). It forms a source of pleasure for the employees that minimizes employee turnover and presents a steady organization. More specifically, employees' satisfaction with the pay structure, pay level, pay raise, and benefits affect employees' job withdrawal behavior (Hyo & Hye, 2015). According to a recent PayScale survey, 25% of employees left their jobs for better pay (Wagepoint, 2019). Besides, over half of the employees (56 percent) stated pay is a top reason they would hunt for a job

with a different employer, according to Willis Towers Watson's Global Benefits Attitudes Survey (2022, as cited by Lacurci, 2022). Thus, if employees aren't being offered an attractive compensation package, they will most likely move to another organization that better fits their needs. Simply put, the chance of turnover decreases as compensation satisfaction rises (Dailey & Kirk, 1992).

There are many studies done on this topic throughout the world. Nevertheless, there is a dearth of research in Bangladesh regarding the relationship between turnover intention and pay satisfaction. Thus, the researcher chose to conduct the study among junior executives employed in different hospitals in Bangladesh.

2. OPERATIONAL DEFINITIONS

2.1 Compensation Satisfaction

The degree of positive or negative thoughts that individuals have about their pay level, pay raise, benefits, and pay structure can be defined as compensation satisfaction (Heneman and Schwab, 1985). A brief definition of different dimensions of compensation satisfaction is provided below:

A. Pay Level

The individual's current direct compensation is referred to as their pay level. Take-home pay and base pay are two factors under this dimension. Take-home pay is the net amount of earnings that an employee receives after all deductions and taxes. Base pay, on the other hand, is a set amount of money given to the employees in exchange for doing a job. This term does not include any company benefits, bonuses, or other forms of payment.

B. Benefits

Employee benefits are non-cash, and indirect payments are made as part of a salary package (Alison Doyle, 2018). The two factors, under this dimension, are related to the benefits package and the amount of benefits. The benefits package consists of various types of employee benefits that are mandatory, including paid time off, group insurance, separation benefits, daycare, profit sharing, and compensation for injury by accident. Other than the mandatory benefits, the employer may also offer voluntary benefits. Organizations use them to create a competitive package for potential recruits and to increase employee retention across the organization. The amount of benefits, on the other hand, refers to the amount paid by the company for benefits.

C. Pay Raise

A pay raise is an increase in an employee's salary for work performed in an organization on a yearly basis. It is always regarded as a positive event because it increases the employee's take-home pay and purchasing power. Salaries are increased in a variety of ways and for a variety of reasons. Many firms take into account an employee's performance and contribution throughout the time period covered, a practice known as "pay for performance" that is becoming more popular in the industry. It is implemented as a means of attracting and retaining talented employees. Others, meanwhile, use the cost of living adjustments to keep up with inflation. Employee remuneration has traditionally been increased by some companies depending on contractual reasons. The two sub-variables included in the questionnaire under this dimension are the most recent pay raise and the effect of supervisors on pay raises.

D. Pay Structure

Employers typically use a pay structure to specify the wage range, from minimum to maximum, associated with each salary grade or band. The two sub-factors under this dimension are connected to the pay structure of the company and the pay of different jobs within the company.

2.2 Turnover Intention

Turnover intention refers to a person's desire to get out of a job and/or shift to another job within a certain period and is a predecessor of actual turnover (Aydogdu and Asikgil, 2011).

2.3 Junior Executive

The term “junior executive” refers to someone who is employed under a person or group having administrative or managerial capacity in an organization. A junior executive's job description may vary from one business to the next, but the fundamentals stay the same. The primary role of a junior executive is to help the organization's senior executives. This role is frequently referred to as a "stepping stone" or "grooming job" on the path to a senior management position within the company.

3. OBJECTIVES OF THE STUDY

The major objective of this study is to gain a better understanding of the effects of compensation satisfaction on turnover intention, especially among the junior executives employed in the private hospitals and clinics of Bangladesh.

In order to achieve the major objective, the following specific objectives are formulated:

1. To determine the junior executives' level of satisfaction with different dimensions of compensation;
2. To measure the junior executives' level of the turnover intention;
3. To examine the relationship between different dimensions of compensation satisfaction and turnover intention.
4. To assess the impact of different dimensions of compensation satisfaction on turnover intention.

4. HYPOTHESIS OF THE STUDY

In light of the above objectives, the following hypotheses have been proposed:

H_1: Pay level affects turnover intention significantly and negatively.

H_2: Pay Raises affect turnover intention significantly and negatively.

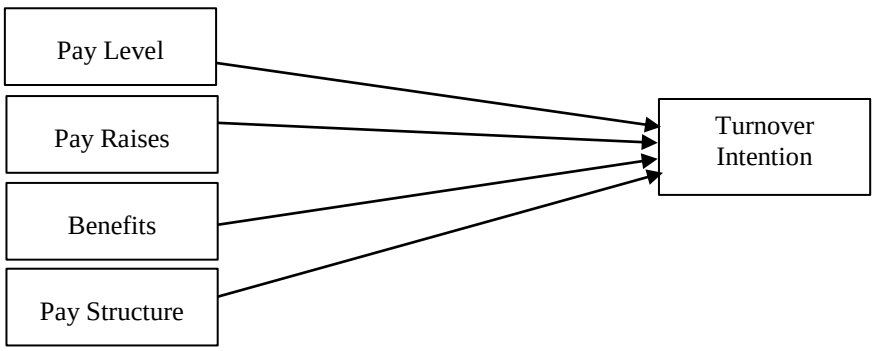
H_3: Benefits affect turnover intention significantly and negatively.

H_2: Pay structure affects turnover intention significantly and negatively.

5. CONCEPTUAL FRAMEWORK

In line with the above hypotheses, the following conceptual framework has been developed for the study.

Figure 1: Conceptual Framework



In the figure above, turnover intention is the outcome variable, whereas different aspects of compensation satisfaction, such as pay level, pay raises, benefits, and pay structure, are predictor variables since they are thought to have an impact on turnover intention.

6. METHODOLOGY

The study utilized a cross-sectional survey design. A total of 151 junior executives were interviewed. The sample was randomly drawn from conveniently selected 14 private hospitals and clinics located at Dhaka and Gazipur cities in Bangladesh. The survey was conducted from August to September 2020. Among the respondents, the males represented 67% of the respondents while the females represented 33%. Almost all (87%) of them were master's degree holders while the remaining 13% were graduates. Of them, 40% had 3-5 years of experience, 22% had 2-3 years, and 38% had less than two years of working experience.

6.1 Measurement Instrument

Compensation Satisfaction

The Pay Satisfaction Questionnaire developed by Heneman and Schwab (1985) was used to examine multiple aspects of compensation satisfaction, including pay level, benefits, pay raises, and pay structure. Despite the fact that the questionnaire has 18 items, only eight were used in this study. The test employs a five-point Likert scale, with responses ranging from "extremely dissatisfied" to "extremely satisfied."

Turnover Intention

The Turnover Intention Questionnaire (TIQ), developed by Mobley et al. (1978), was used to assess turnover intention in this study. The TIQ is made up of three items, however, only one was employed in this investigation. The statement "I am actively searching for an alternative to the organization" was rated using a 5-point Likert Scale ranging from "strongly disagree" to "strongly agree."

6.2 Data Analysis Procedure

Data were analyzed using descriptive and causal statistics. Measures of central tendency (mean) and association (correlation) were applied as part of descriptive statistics while multiple linear regression analysis was used as part of causal statistics. The data were analyzed using statistical software - the Statistical Package for Social Sciences (SPSS) version 20.0.

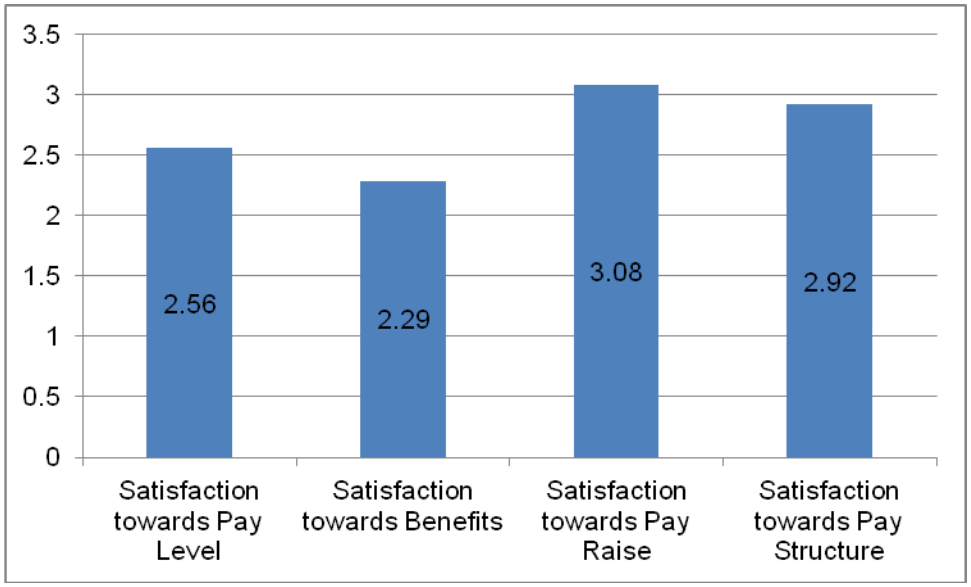
7. RESULTS AND FINDINGS

To assess the respondents' degree of satisfaction with various components of compensation and their likelihood of turnover (objectives #1 and #2), the mean value was determined.

7.1 Compensation Satisfaction

Figure 2 depicts the average degree of satisfaction with various compensation parameters.

Figure 2: Average Satisfaction with Compensation by Dimension



The above figure clearly shows that the respondents' overall satisfaction with compensation provided by the organizations is slightly higher than average [(2.56+2.29+3.08+2.92)/4=2.71]. However, satisfaction with various aspects of compensation differs from one another. According to the findings, respondents are extremely dissatisfied with "benefits" (mean=2.29). They are, on the other hand, relatively satisfied with "pay raise" (mean=3.08) and "pay structure" (mean=2.92). The level of satisfaction with "pay level" is marked just above the average line (mean=2.56).

7.2 Turnover Intention

The survey exposed that just two-thirds of the respondents (62.3 %) marked "disagree" or "strongly disagree" as to their intention to quit their current job. However, it was alarmingly observed that slightly less than one-third (29.2%) of respondents intended to quit the job marking "agree" or "strongly agree". Only 8.6% had not yet decided whether to stay or leave the organization.

7.3 Correlation between Compensation Satisfaction and Turnover Intention

The Pearson's correlation was applied to examine the relationship between different dimensions of compensation and turnover Intention (objectives # 3). The correlation coefficients are given below:

Correlation between Compensation Satisfaction and Turnover Intention

Dimensions of Compensation	Turnover Intention
1. Pay level	-.856**
2. Benefits	-.828**
3. Pay raise	-.862**
4. Pay structure	-.849*

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

From the above Table 26, it can be observed that all the four dimensions of compensation are negatively and significantly correlated with turnover intention.

7.4 Effect of Compensation Satisfaction on Turnover Intention

The following regression model has been developed in order to test the hypothesis of whether different components of compensation satisfaction significantly and negatively affect turnover intention among junior executives:

Turnover Intention = $\beta_0 - \beta_1$ Pay structure $- \beta_2$ Benefits $- \beta_3$ Pay Raise$- \beta_4$ Pay Level + ε

The results of multiple linear regression analysis are given below.

Model Summery

R	R Square	Adjusted R Square	Std. Error of the Estimate
.892[a]	.795	.789	.65559

a. Predictors: (Constant), Pay structure, Benefits, Pay raise, Pay level

As can be seen in the model summary, the value of Adjusted R Square is 0.789. Therefore, it can be concluded that 78.9% of turnover intention is affected by various dimensions of compensation satisfaction, while the rest 21.1 % is influenced by other factors that have not been examined.

ANOVA[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	243.341	4	60.835	141.542	.000[b]
Residual	62.751	146	.430		
Total	306.093	150			

a. Dependent Variable: Turnover Intention

b. Predictors: (Constant), Pay structure, Benefits, Pay raise, Pay level

The ANOVA Table provides results of the overall acceptability of the regression model. As can be seen from the above table, the P-value for the F-test is 0.000 which is less than any reasonable α (e.g. α = 0.05 or α = 0.01), so there is sufficient evidence that the overall model is fit. This means at least one of the independent variables is significant.

Coefficients[a]

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P Value
	B	Std. Error	Beta		
(Constant)	5.778	.166		34.795	.000
Pay level	.109	.273	.088	.400	.690
Benefits	-.578	.159	-.450	-3.636	.000
Pay raise	-.815	.183	-.689	-4.460	.000
Pay structure	.147	.281	.114	.523	.602

a. Dependent Variable: Turnover Intention

The coefficients table represents the coefficients of the regression line (B values under the unstandardized coefficients column). It can be concluded from the table that two predictor variables, i.e., benefits and pay raise are found statistically significant at the 99 percent significance level as their corresponding P-values (0.000 in both cases) are less than 0.01. However, the remaining two predictor variables, i.e., pay level and pay structure are found statistically insignificant even at a 5% level of significance as their corresponding P-values (0.690 and 0.602 respectively) are greater than 0.05. Thus, these two dimensions of compensation have no effect on the turnover intention, that is, their effect is statistically equal to zero (according to the results). As a result, the coefficients table shows the following regression equation including only two significant predictor variables:

Turnover Intention= 5.778 – 0.578 x Benefits – 0.815 x Pay Raise + ε

From the above regression equation, it is clearly evidenced that "benefits" and "pay raise" have a significant negative effect on turnover intention. According to their B values under the unstandardized coefficients column, the following inferences can be made:

- A one-unit increase in satisfaction towards benefits will lead to a 0.578 unit decrease in turnover intention; and
- A one-unit increase in satisfaction toward pay raise will lead to a 0.815 unit decrease in turnover intention.

Finally, the dimensions are ranked below based upon the Beta values under standardized Coefficients.

Ranking of Factors based on Beta values

Dimensions of Compensation	Standardized Coefficients (Beta)	Rank
1. Pay Raise	-.689	1
2. Benefits	-.450	2

Summarizing all the above discussions and facts related to the regression model developed in the study, the alternative hypothesis that compensation satisfaction significantly and negatively affects turnover intention among junior executives has been accepted.

8. MANAGERIAL IMPLICATIONS

This study is expected to contribute to the field of compensation management in realizing the significance of suitable strategies for attracting and retaining talents in such organizations. Since this is a thinly researched area, especially in the context of Bangladesh, the findings from this study are expected to be very useful, both for management practitioners as well as for academicians.

The results of the study strengthen the fact that there is a very strong and negative correlation between compensation satisfaction and turnover intention. The survey also reveals that the effect on turnover intention is significantly caused by various dimensions of compensation satisfaction. However, as per the study findings, the junior executives in Bangladesh's private hospitals and clinics report an average level of satisfaction with various forms of compensation offered by their employers. In addition, the most alarming observation is that respondents have expressed very poor satisfaction regarding “benefits” (mean=2.29) which is identified as a significant predictor of turnover intention. These findings may be a cause of concern for the private hospital management in Bangladesh. Therefore, managerial interventions are necessary to develop an appropriate and equitable salary structure to attract, to motivate and retain employees and thereby to reduce the potential turnovers. More specifically, the management should think about its employee benefit programs to make sure that they meet the needs of the current workforce.

As a final point, the present study makes useful additions to the current knowledge base by examining the association between compensation satisfaction and turnover intention. However, there were some limitations to this study. One of the key limitations was the limited sample size of only 151 junior executives. Another limitation of this study was that it covered only hospitals and clinics located at Dhaka and Gazipur cities in Bangladesh. Thus, future studies should use a less restricted sample involving more organizations representing different industries to extend the applicability of the findings of this study.

REFERENCE:

Armstrong M. (2001). *A handbook of Human Resource Management and Practice*, 8th Edition. Bath Press Ltd.

Aydogdu, Sinem & Asikgil, Baris (2011). An Empirical Study of the Relationship among Job Satisfaction, Organizational Commitment and Turnover Intention. *International Review of Management and Marketing, 1*(3), 43-53.

Bluedorn, A.C. 1982. A unified model of turnover from organizations. *Human Relations, 35*(2): 135- 153.

Boushey, H. and Glynn, S.J. (November 16, 2012). Center for American Progress. https://www.americanprogress.org/wp-content/uploads/2012/11/CostofTurnover.pdf

Cohen, G., Blake, R. S., & Goodman, D. (2016). Does turnover intention matter? Evaluating the usefulness of turnover intention rate as a predictor of actual turnover rate. *Review of Public Personnel Administration*, *36*(3), 240-263.

Dailey, R. C., & Kirk, D. J. (1992). Distributive and procedural justice as antecedents of job dissatisfaction and intent to turnover. *Human relations*, *45*(3), 305-317.

Danha, F. (February 19, 2021). https://www.thehumancapitalhub.com/articles/High-Staff-Turnover-What-Are-The-Causes

Firth, L., Mellor, D. J., Moore, K. A., & Loquet, C. (2004). How can managers reduce employee intention to quit? *Journal of managerial psychology*.

Heneman, H.G. and Schwab, D.P. (1985). Pay satisfaction: Its Multidimensional Nature and Measurement. *International Journal of Psychology, 20*, 129-141.

Hyo S. J. *and* Hye H. Y (2015). Understanding Pay Satisfaction: The Impacts of Pay Satisfaction on Employees' Job Engagement and Withdrawal in Deluxe Hotel. *International Journal of Hospitality Management,* 48, 22-26.

Khatri, N., Budhwar, P., & Fern, C. T. (1999). Employee turnover: Bad attitude or poor management. *Singapore: Nanyang Technological University*, *2*(5), 19-99.

Lacurci, G. (MAR 22, 2022). https://www.cnbc.com/2022/03/22/great-resignation-continues-as-44percent-of-workers-seek-a-new-job.html

Mobley, W.H., Horner, S.O. and Hollingsworth, A.T. (1978), "An evaluation of precursors of hospital employee turnover", *Journal of Applied Psychology, 63*(4), 408-414, doi: 10.1037/0021-9010.63.4.408.

Price, J.L. and Mueller, C.W. 1981. A causal model of turnover for nurses. *Academy of Management Journal, 24*, 543-565.

Smith, G. (September 17, 2021). https://www.peoplekeep.com/blog/employee-retention-the-real-cost-of-losing-an-employee

Wagepoint (Dec 19, 2019). https://smallbizclub.com/run-and-grow/human-resources/7-employee-retention-strategies-that-you-can-apply-today/

ANNEXURE

Table 1: Sex of the Respondents

Gender	Frequency	Percent
Male	101	66.89
Female	50	33.11
Total	151	100.0

Table 2: Education Level of the Respondents

Education Level	Frequency	Percent
Masters	131	86.75%
Graduates	20	13.25%
Total	151	100.0

Table 3: Working Experience of the Respondents

Working Experience	Frequency	Percent
Less than 2 Years	57	37.7
2-3 Years	33	21.9
3-5 Years	19	40.4
Total	151	100

Table 4: Satisfaction toward Take-Home Pay

Level of Satisfaction	Frequency	Percent
Very dissatisfied	18	11.9
Dissatisfied	55	36.4
Neither satisfied nor dissatisfied	25	16.6
Satisfied	44	29.1
Very satisfied	9	6.0
Total	151	100.0

Table 5: Satisfaction toward Base Pay

Level of Satisfaction	Frequency	Percent
Very dissatisfied	42	27.8
Dissatisfied	64	42.4
Neither satisfied nor dissatisfied	9	6.0
Satisfied	27	17.9
Very satisfied	9	6.0
Total	151	100.0

Table 6: Satisfaction toward Benefits Package

Level of Satisfaction	Frequency	Percent
Very dissatisfied	36	23.8
Dissatisfied	72	47.7
Neither satisfied nor dissatisfied	10	6.6
Satisfied	27	17.9
Very satisfied	6	4.0
Total	151	100.0

Table 7: Satisfaction toward Amount of Benefits

Level of Satisfaction	Frequency	Percent
Very dissatisfied	34	22.5
Dissatisfied	78	51.7
Neither satisfied nor dissatisfied	9	6.0
Satisfied	24	15.9
Very satisfied	6	4.0
Total	151	100.0

Table 8: Satisfaction toward most Recent Raise in Pay

Level of Satisfaction	Frequency	Percent
Very dissatisfied	10	6.6
Dissatisfied	50	33.1
Neither satisfied nor dissatisfied	11	7.3
Satisfied	63	41.7
Very satisfied	17	11.3
Total	151	100.0

Table 9: Satisfaction toward Supervisor's Influence over Pay

Level of Satisfaction	Frequency	Percent
Very dissatisfied	15	9.9
Dissatisfied	58	38.4
Neither satisfied nor dissatisfied	11	7.3
Satisfied	50	33.1
Very satisfied	17	11.3
Total	151	100.0

Table 10: Satisfaction toward the Company's Pay Structure

Level of Satisfaction	Frequency	*Percent*
Very dissatisfied	14	9.3
Dissatisfied	73	48.3
Neither satisfied nor dissatisfied	13	8.6
Satisfied	41	27.2
Very satisfied	10	6.6
Total	151	100.0

Table 11: Satisfaction toward Pay of other Jobs in the Company

Level of Satisfaction	Frequency	Percent
Very dissatisfied	12	7.9
Dissatisfied	49	32.5
Neither satisfied nor dissatisfied	11	7.3
Satisfied	70	46.4
Very satisfied	9	6.0
Total	151	100.0

Table 12: Respondents' Intention to Quit the Job (Turnover Intention)

Turnover Intention	Frequency	Percent
Strongly disagree	32	21.2
Disagree	62	41.1
Neither agree or disagree	13	8.6
Agree	14	9.3
Strongly Agree	30	19.9
Total	151	100.0

USING POLITICAL SERVICES MARKETING CONCEPT IN THE ELECTION COMPETITION- 2018 OF BANGLADESH

***Ipsita Datta*[1]**

ABSTRACT

The main purpose of this article is to examine the recent trend of using political services marketing concept in politics for democratic competition among the major political organizations of Bangladesh. This is a descriptive research under conclusive research design. The regression analysis based on a survey data reveals that there is a strong relationship between the marketing strategy and the election of result of the National Election 2018 of Bangladesh. The inference analysis shows that the election result 2018 is 60 percent influenced by the marketing strategies that are included in the model. (Adjusted R Square = .60). The secondary data analysis also examines that the major political organizations of Bangladesh are trying to adopt the political services marketing concept knowingly or unknowingly for winning a ballot contract in arriving on the government platform for creating, pricing, communicating, and delivering political services to best satisfy the political market (present + potential voters). Literature review shows that the Bangladesh Awami League has heavily used marketing techniques to bring about a larger political market share. Therefore, all major political competitors should apply the 'Political Services Marketing Concept' in the political competition of democratic Bangladesh for creating a peaceful political environment.

Keywords: Trend, Political-services-marketing, Democracy, Political product, Power, Election.

[1] ==

INTRODUCTION

This paper is to examine the recent trend of using political services marketing in the politics of Bangladesh, especially in the National Election of 2018. From the viewpoint of non-profit marketing, a political organization is a political service providing non-profit marketing organization. All political organizations are using the marketing techniques knowingly or unknowingly in their politics but habitually they do not want to call the techniques as marketing techniques (Datta, 2016). Recently it is found that developed and developing countries are using the marketing techniques in America, England, Australia, India etc. Marketing techniques are some effective tools that can create a peaceful political competition among the political parties in a democratic country. But due to the lack of enough knowledge about political marketing and political services marketing, the political parties of Bangladesh are not being able to use the political services marketing techniques for creating a peaceful way for winning power and creating, communicating, and delivering superior political services to best satisfy the political market or voter-market (Datta, 2017). Political marketing emphasizes merely on winning political power by using policy commitments and candidates. But political services marketing concept emphasizes both the marketing techniques for winning power and later creating, pricing, communicating, and delivering political services as the winning political organization is committed by using government structure. In fact, political marketing focuses on ideology and future commitments for winning power without considering its actual delivery to best satisfy the political market for successful marketing. There are three types of political marketing orientation; (1) Product-orientation party; this party argues for its own ideas and politics; assumes that voters will realize that its ideas are the best and therefore vote for it. (2) Sales-oriented party; this party believes in its own idea and policies, but realizes that they must be sold to the publics in order to give what they want, but tries to make people want what the party offers (3) Market-oriented party; this party uses market intelligence to identify voter needs and demands to design its policy, candidates, and behavior to provide voter satisfaction (Lees-Marshment, et.al 2001). In these three philosophies of marketing, there is no indication of how a winning political organization can create, communicate and deliver superior political services as it is committed after winning power by using a

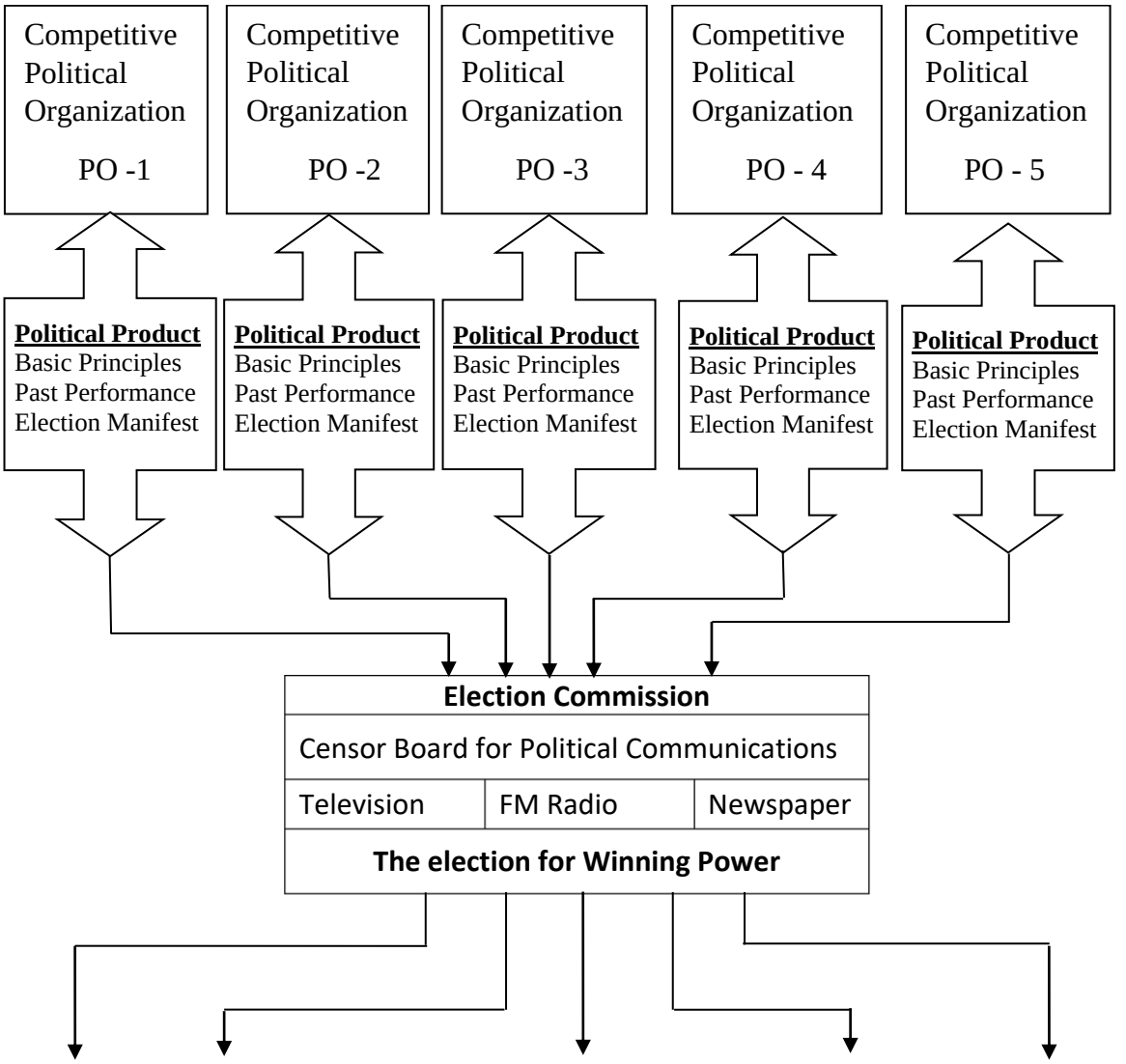
government structure. To best satisfy a political market, the political product should be clear and deliverable. Datta (2016) has developed a model for designing a deliverable political product to attract political marketing for creating a peaceful political competition. Recently, in the National Election 2018, the political offering was very close to the model for designing a deliverable political product and the political services marketing concept (Datta, 2016). A political product is the functional and emotional benefits of a political organization's basic principles, past performance and election manifesto (Datta, 2017). This paper has identified the secondary information and conducted a survey on the graduate voters to measure the recent trend or influence of using political services marketing concept in the election result, 2018 of Bangladesh to encourage the political organizations in using political services marketing concept in politics for creating a peaceful political competition in democratic Bangladesh.

LITERATURE REVIEW

A large number of researches and articles have been conducted by scholars on political marketing and political services marketing. Some related literature is reviewed here in relation to use the political services marketing techniques of Bangladesh in recent times. According to Kotler and Kotler (1999), political marketing is a major growth industry affecting every person and institution, and the making of a successful candidate and cause is what political marketing is all about. He stated that using marketing techniques is growing day by day in personal life as well as in different types of institutions. A political institution is using marketing for setting candidates and designing a cause centered offerings to attract the voters. The use of marketing type activities by political parties in their electoral campaigns has been discussed by various authors over quite a lengthy period of time (Glick, 1967, Sharma, 1973, Kotler 1975, Kotler and Kotler 1981, Mauser 1983, Newman and Sheth 1985, Smith and Saunders 1990, Butler and Colling, 1994, O'Cass, 1996). According to Lilleker & Lees-Marshment, 2005, Bill Clinton used market-oriented politics in 1992, where 'products' are designed to match public demands, and that technique was adopted by Tony Blair in the United Kingdom, Gerhardt Schroeder in Germany, and Helen Clark in New Zealand. In analyzing the above-

mentioned examples of using political marketing in democratic competition, it is found that, gradually, political science is being diversified into political marketing. Lilleker & Less-Marshment have defined only the means of winning power by using market-oriented philosophy but he did not clearly define the whole process on how a winning political organization can design and offer a deliverable political product which will be created, communicated, and delivered to attract a political market for the next election. On the other hand, the author has not defined how political marketing can facilitate individual marketing, social and commercial organizational marketing to solve the social problem. But in the article 'Corporation Marketing after the Election: The Potential and Limitations of Maintaining a Market Orientation in Government' he certainly identify the gap between the voters' expectation and the actual delivery of the services as per the election commitments. In fact, only market-orientation is not only one solution to fill up the gap. It needs a model of designing a deliverable political product and designing an effective service creating and delivering government structure (Datta, 2017). In this context, Datta has developed a related concept 'Political Services Marketing' focusing on creating, pricing, communicating, and delivering political services as per the offering potential political product by using a government structure. He has developed a new definition in this field, "Political Services marketing is the political and societal process of winning power by communicating political product (basic principles + past performance + election manifesto of a political organization) in a democratic competition for arriving on the government platform for planning and executing of carefully formulated programs according to the election manifesto designed to facilitate the social, commercial organizations and individuals marketing to satisfy the total voter-market through creating, delivering, pricing (monitory cost + time cost + energy cost + psychic cost) and communicating superior services which directly or indirectly benefits the nation of a country in the certain period of time in building and maintaining relationship with the voter-market for winning power in the next election." (Datta, 2016). In the article "Political Services Marketing for Peaceful World", Datta has developed two models in defining the 'political services marketing' and how it can facilitate the individual marketing, social organizational and commercial organizational marketing to solve all problems of society. The given models are as follows below:

Figure 1: Model of Political Services Marketing for Peaceful Bangladesh



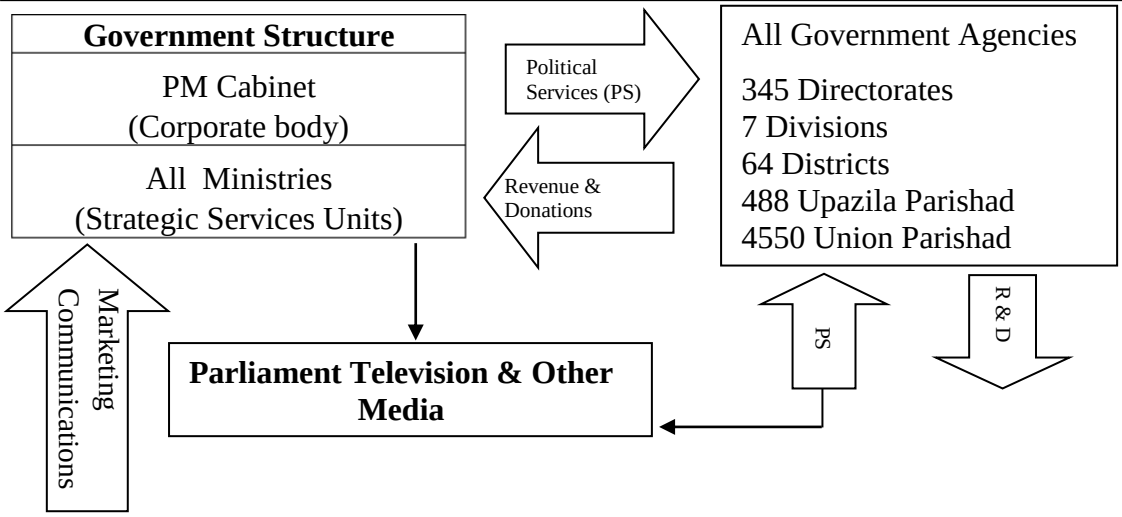
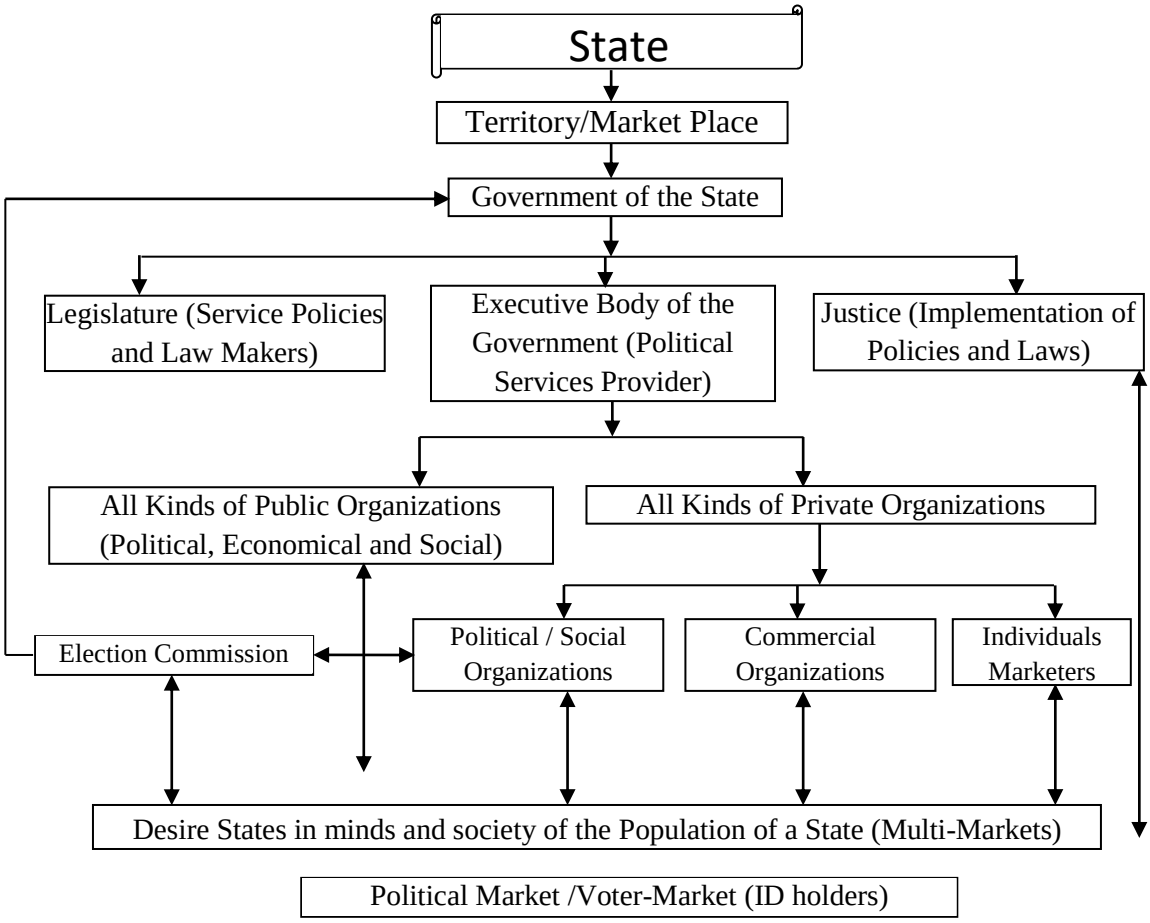


Figure 2: Model of Political Services Marketing System of a State



Using Political Product in the Polities of Bangladesh:

A product is anything that can be offered to a market to satisfy a want or need (Kotler, 2004). In electoral terms, a product is referred as a "mix" of variables which combines three key aspects namely, "Party Image", Leadership Image, and Policy commitments (Butler and Collins, 1994). According to Datta (2017), the political product of a political organization is not a single product; it is a bundle of services which combine goods, services, ideas, information, property, place, person, experience, and organization, which will be created and delivered in a certain period of time by using government structure. He also developed three levels of a political product; (1) Basic principles, (2) Past performance, and (3) Election manifesto and developed a model for designing a deliverable political product (A package of political services for each constituency and an aggregated package of political services for a nation) by setting formal branch office at each constituency under a formal head office of a political organization and for measuring its impact on a deliverable political product to win power for a peaceful democracy. In this view, recently Bangladesh Awami League has set a formal head office and is continuously collecting information from the political market place (constituency). The political organization has made a decision to set formal branch office at each Upazila, Zila, and City Corporation to offer local political product and is creating, communicating, and delivering political services to best satisfy the local political market. In the National Election 2018, this political organization has, for the first time, offered a published book as a political product including the three-level political products (benefits of basic principles + past performance + election manifesto). In fact, the effort has not been declared as a political product due to the traditional political culture though it is comparable with a political product. On the other hand, the member of the Executive Committee, Bangladesh Nationalist Party (BNP) (Rabiul Islam, 2018) stated in a television talk-show named 'Late Edition' 2018, SA Television that the BNP has offered a political product by considering 2030 for the National Election 2018 and is communicating to attract the political market. The trend of using this political product strategy by the major political competitors in the 11th National Election 2018 is as follows;

The Election Manifesto of Bangladesh Awami League, 2018

1. Special Undertakings (Comparable with the Election Manifesto of a political product)
2. Background (Comparable with the Past Performance of a political product)
   a) Glorious Five Years (June 1996-July 2001): The Golden Period of fulfilling the aspirations of Freedom
   b) BNP-Jamaat Alliance government (October 2001 to 10 November 2006): People's resistance against plunder, misrule, and violence

c) The regime of Caretaker government: Conspiracy against Democracy and Way to overcome
d) The Awami League Tenure (January 2009-December 2013): Transcending Crises and March towards a New Dawn
e) Awami League Tenure (January 2014 - December 2018): Bangladesh – a Miracle on the Path of Development and Prosperity

3. Running the Government on two Terms: Success and Achievements in (2009-2018): Objectives and Plan for the Next Five Years (2019-2023) [Comparable with the Past Performance & Election Manifesto]
   Democracy, Election and Functional Parliament
   The Rule of Law and Human Rights Protection
   Efficient, Service-oriented and Accountable Administration
   Developing a Citizen-friendly Law and Order Enforcing Agency
   The policy of Zero-Tolerance against Corruption
   Violence, Terrorism, Communalism and Eradication of Drugs
   Local Government: Empowerment of the People
   Macroeconomy: High Income, Sustainable and Inclusive Development
   Strategies and Measures: Mega Projects for Infrastructural Development
   Mega Projects for Infrastructural Development
   'My Village—My Town': Extension of Modern Civic
   Amenities in Every Village
   Young Generation: Power of Youths, Prosperity of Bangladesh
   Women Empowerment
   Poverty Alleviation and Reduction of Disparity
   Agriculture, Food and Nutrition: Certainty of Attaining Food Security
   Electricity and Energy
   Industrial Development
   Labour Welfare and Labour Policy
   Education
   Health Care and Family Welfare
   Communication
   Realization of the Dreams for Digital Bangladesh: Information and Communications Technology
   Conquest of the Sea: Blue Economy—the opening of the Horizon of Development
   Climate Changes and the Protection of the Environment
   Child Welfare
   The welfare of the Disabled and the Aged

The Welfare of the Freedom Fighters and Realization of the Spirit of the Liberation War Culture

Sports
Small Ethnic Communities, Religious Minorities, and Backward Population

Freedom of the Media and Unhindered flow of Information

Defense: Security, Sovereignty and Protection of Integrity

Foreign Affairs

Non-government Organization

4. Achieving MDG (Millennium Development) and SDG (Sustainable Development) Implementation Strategy (Past performance and election manifesto)
5. Delta Plan 2100 (Election Manifesto)
6. Global Recognition of Charismatic leadership of Sheikh Hasina (Past Performance)
7. A Clarion Call to the Countrymen

In analyzing the above-mentioned election manifesto of Bangladesh Awami League, it is found that the political competitor has used the political product strategy. Because, the given election manifesto containing seven points can be divided into three major parts as a political product. (1) Special undertakings are comparable with the **election manifesto** to attract and persuade the political market (present + potential voters) which will be delivered as service marketing process by using government structure within the contracted and committed five years. The marketing performance in creating, pricing, communicating, and delivering political services will be used as a level of political product in the next national election to attract the political market. (2) Background of the election manifesto has been treated here as the past performance of the Bangladesh Awami League (Brand Image) that resides in the minds of the political market (present + potential voters). There are some functional and emotional benefits of the past performance that the political market will have been consuming for the long-run. (3) **Running the Government on two Terms: Success and Achievements in (2009-2018)** in the manifesto has also offered as the past performance in defining how the political services marketing organization has delivered the political services to fulfill the previous election manifesto for creating functional and emotional value. On the other hand, **Objectives and Plan for the Next Five Years (2019-2023)** have offered as the election manifesto to attract the political market. Especially **'My Village—My Town':** Extension of Modern Civic is an important and highlighted slogan to attract the voters of the rural areas of Bangladesh. The (4) & (5) points in the given manifesto are used for

partial fulfillment of the SDGs during the service contract period of next five years. The (6) & (7) points of the manifesto are used as the leadership quality and communicating with the political market to persuade the political market for winning power in arriving on the government platform.

In the democratic political competition, the major political organization BNP (Bangladesh Nationalist Party) has also offered an election manifesto as the political product.

BNP Secretary General Mirza Fakhrul Islam Alamgir has delivered his speech to unveil the party's manifesto for the upcoming elections for the 11th national election as the political product to attract the political market to win power for creating, pricing, communicating, and delivering political services. The major points of the Election Manifesto 2018 are as follows;

1. Slum-dwellers and hawkers are rehabilitated and not be evicted from urban areas.
2. BNP to maintain special relation with Muslim nations and neighboring countries.
3. A separate education channel.
4. Better remuneration will be given to Madrasa teachers.
5. 200,000 government jobs will be given in the first year of office.
6. 10 million new jobs will be generated in five years.
7. All cases filed against students over the safe road protest will be withdrawn.
8. 5% of GDP will be spent on the education sector.
9. Sports Academy with modern technologies will be set up in every district.
10. An allowance will be given to unemployed youths, BNP pledges in its manifesto.
11. An upper house will be introduced in Parliament.
12. BNP to ensure a balance between the power of the president and prime minister.
13. BNP to repeal the Digital Security Act and Special Powers Act 1974.
14. "BNP will; practice democracy if voted to power." (comparable with the basic principles of the BNP)

In analyzing the Election Manifesto of BNP 2018, it is observed that the organization has offered simply and traditionally without considering the three levels of political product (basic principles + past performance + election manifesto). In the viewpoint of political product strategy, the organization contained only one level of political product that is the election manifesto. The organization did not offer the basic principles and past

performance to attract the political market except ensuring democracy. But in contrast, the Bangladesh Awami League has used more or less the three levels of a political product (basic principles + past performance + election manifesto) knowingly or unknowingly. It is also found that no political services providing organization offers the benefits of the basic principles for creating emotional value to attract the political market to win political power for getting the ballot contract for using government structure in providing political services.

Using Pricing Strategy in Politics:

In the political services marketing concept, the price means what a nation, directly and indirectly, pay in exchange of a package of political services like the rate of corporate tax, income tax, VAT (Value Added Tax), price of essential commodities, subsidies, price of utilities, land registration fees, like other government charges (Datta, 2017). The Awami League leader, and the present HE State-Minister, Public Administration, said in a talk-

Different Macroeconomic Indices of Bangladesh

Index	FY 2005-06 BNP-Jamaat Regime	FY 2017-18 Awami League	Target for FY 2023-24
Rate of growth of GDP	5.40	7.86	10.00
Per Capita Income (USD)	427.00	1751.00	2750.00
National Savings Ratio (Percentage of GDP)	27.70	29.00	37.00
National Investment Ratio (Percentage of GDP)	24.70	30.50	37.00
Government Budget (Crore Taka)	64,383	4,00,266*	10,00,000
Foreign Exchange Reserve (bn USD)	3.88	34.00	50.00
Export Earnings (bn USD)	10.05	36.60	72.00
Imports (bn USD)	14.70	56.00	110.00
People under poverty line (In percentage of population)	41.51	21.50	12.30
People in extreme poverty line (In percentage of population)	25.10	11.30	4.50
Power Supply Capacity (MWT)	3,782.00	20,400.00	28,000.00

** The volume of government budget for FY 2018-19 is Taka 4.64 trillion.*

Source: Election Manifesto of Bangladesh Awami League 2018, Website of Bangladesh Awami League the show named Late Edition 2018, organized by SA Television, the Awami Government is giving subsidies 50% for the farm-instruments delivering to the farmers to attract the political market. He also said that the Awami League is using the

political services marketing concept in government policies and planning. On the other hand, the overall price level of a country also attracts the political market. Bangladesh Awami League has used the price level explaining the overall price mechanism in the macroeconomy of Bangladesh. The organization compared to the immediate past AL government, prices increased 100-200 percentage and the rate of inflation jumped from 1.59% to 10%. On the other hand, the average growth rate came down from 5.92% to 5.4. The growth rate of revenue collection has been maintained, as a result of which it has been possible to implement the increasingly bigger budgets to expedite the development. The gross revenue earning has reached Tk 2 lac 59 thousand 454 crores in FY 2017-18, which was Tk 44.2 thousand crores in FY 2005-06. (Election manifesto, 2018). In the viewpoint of political services marketing, revenue is the indirect prices of all kinds of political services because a political market gets political services against their given revenue to the contracted political service providing organization. The Bangladesh Awami League has also used the overall price strategy in defining how the political market will get political services against a certain level of revenue as the potential costs of all political services. The revenue collection will be enhanced after making necessary reforms with respect to Income Tax, VAT and Supplementary Duty. Making Value Added Tax (VAT) Law rational and implementable, the existing problems will be solved. The imposition of cascading (the wrong notion of recurring taxes) will be avoided. The use of Alternative Dispute Resolution (ADR) will be increased. Considering success in an audit report and ADR, activities to give rewards and incentives to tax officers will be made more effective. The extent of income tax will be increased gradually in harmony with earning. The tax officers will be imparted training on Business Finance, Accounting, Business Law, International Business and other subjects in different organizations. The following figure shows the overall prices related to different macroeconomic indices of Bangladesh. In analyzing the recent trend of using political services marketing concept in politics of Bangladesh, it is found that the Bangladesh Awami League has knowingly or unknowingly used price strategy in attracting the political market (present + potential voters). But the Bangladesh Nationalist Party (BNP) did not use any partial pricing strategy in the election manifesto as the political product. In fact, the commitments of controlling the price level of the essential commodities, utility prices, price level, subsidies, taxes, and VAT rates are not concretely used in offering political products in the manifestoes by the major political organizations. On the other hand, reducing different educational course fees, land registration fees, rail & public bus fare, price of utilities and essential goods and services are the major area where pricing strategy could be used to attract the political market (present + potential voters) In fact, it could be a more effective strategy to attract and persuade the political market.

Delivering of Political Product (A package of political services):

Past performance is an important level of a political product for a political service providing organization. It depends on how the winning political organization has delivered its committed political services as the election manifesto. Over-deliver under-promise is better than over-promise under-deliver for creating the brand image of a winning political organization that can be able to attract the political market. In this view, Bangladesh Awami League has offered the success of delivering the committed political services mentioning the Awami League tenure 1996-2001, 2009-2013, and 2014-2018 in the election manifesto's point number 2.1, 2.4, and 2.5 as the level of a political product. In the manifesto point 3.3, the political service providing organization has mentioned that the efforts of the government have increased the efficiency and scope of work of the government offices owing to the excellence of information technology and modern training. Various initiatives have been taken to control unnecessary delays and the complexity of work by applying the science-based methods in the area of providing services. This trend has to be taken forward in order to establish good governance. The political organization has introduced and implemented digital Bangladesh in creating, communicating, and delivering effective and efficient political services. Recently, an Information Service Centre has been established at each and every Union Parishad to deliver faster and corruption-free political services to the local political market (present + potential voters in each constituency). The political organization has successfully delivered its committed services in due time except for the Padma Setu, but it is visualized and almost completed. In contrast, the Bangladesh Nationalist Party (BNP) did not define how it delivered the political services clearly over the BNP tenure. It is found that BNP is fully unaware of the effectiveness of political services marketing in designing a deliverable political product in winning political power.

Use of Marketing Communication in Politics :

In the viewpoint of marketing or political services marketing, all political organizations use suitable marketing communication tools such as advertising in print and electronic media, personal communication with the voters and social groups, publicity and public relation, social media, sales promotional tools (short term incentives) etc. The major political organizations like the Bangladesh Awami League and Bangladesh Nationalist Party have used TVC (Television Commercials) to attract the political market. The ruling party has already kicked off its initiative to reach the largest number of voters possible on nearly every kind of media platform. Awami League has been also set to use television and social media, alongside mainstream print media to conduct a broader campaign and reach the maximum number of voters to ensure victory. (Dhaka Tribune, 2018). A top leader told the Dhaka Tribune that the Bangladesh Awami League will have paid

advertisements aired on multiple television channels, like it is done in other countries around the world to carry out its campaign on a wider range, as TV reaches the masses most, after internet-based media. Along with newspapers, the ruling party will use the other electronic media too in its campaign. Campaigning on the social networking sites, including Facebook, Twitter, YouTube, and other similar platforms, has been already on in a bid to reach the 92.46 million internet users of the country (Dhaka, Tribune, 2018). In analyzing the above-mentioned information, it is found that the major political services providing organization Bangladesh Awami League has used marketing communication in offering its political product (basic principles + past performance + election manifesto). Bangladesh Awami League Presidium member Pijush Kanti Bhattacharya told the Dhaka Tribune that his party has taken all-out preparations to reach the maximum number of people and to inform them about ongoing mega development projects. It is observed that the political organization has used marketing communicating tools as per the above-mentioned preparation to win maximum seats for political power by marketing political services.

On the other hand, an alliance of opposition parties in Bangladesh, including the Bangladesh Nationalist Party (BNP), said on Sunday it plans to contest the Dec. 23 general election, despite the ruling party, Bangladesh Awami League, rejecting a series of its demands. The major opposition political organization BNP says a caretaker government is essential for free and fair elections, as otherwise, it claims the ruling party will use the machinery of government to support its campaign. But as per the different media report, BNP has used personal communication and social media like Facebook, YouTube, Website, SMS, etc. in its political campaign of 2018. Mirza Fakhrul Islam Alamgir, the acting Secretary, Bangladesh Nationalist Party, (BNP) has communicated by using a TVC named 'Amaderi Bangladesh' through different electronic media like YouTube, multi-channel televisions in 11th Election of Bangladesh 2018 to attract and persuade the political market to win the political power. However, with the above information and discussion, it evolves that the major political organizations are gradually adopting marketing communication in their politics knowingly or unknowingly the benefits of effective marketing communication strategy.

Winning Political Market Share for Power in Marketing Political Services

There are 350 members of the Parliament of Bangladesh consisting of 300 seats directly elected from 300 constituencies, and 50 restricted seats are selected from the contesting political organizations based on their proportional vote share. Each parliament sits for five years ballot contract with the owners (voters) of the State for using government structure and creating, communicating, and delivering political services based on the previously offered political product to the voter-market. The obtained political market share based on (Daily Star, 2019) information was as follows:

Alliance	Organization	Votes	%	Seats	+ / -
Grand Alliance	Bangladesh Awami League			257	+23
	Bangladesh Jatiya Party (Ershad)			22	-12
	Workers Party of Bangladesh			3	-3
	Jatiya Samajtantrik Dal			2	-3
	Bikalpa Dhara Bangladesh			2	+2
	Jatiya Party (Manju)			1	-1
	Bangladesh Tarikat Federation			1	-1
	Bangladesh Nationalist Front			0	-1
Jatio Oikya Front	Bangladesh Nationalist Party			6	New
	Gano Forum			2	New
	Bangladesh Jamaat-e-Islami			0	New
	Jatiya Samajtantrik Dal-JSD			0	New
	Nagorik Oikya			0	New
	Krishak Sramik Janata League			0	New
	Bangladesh Jario Party			0	New
	Bangladesh Khilafat Majlish			0	New
	Bangladesh Muslim League			0	New
	Jatio Gonatantrik Party			0	New
	Jatio Oikya Prokria			0	New
	Kalyan Party			0	New
	Liberal Democratic Party			0	New
Left Democratic Alliance	Communist Party of Bangladesh			0	New
	Revolutionary Workers Party			0	New
	Gonosonghoti Andolon			0	New
	United Communist League of Bangladesh			0	New
	Based (Marxist)			0	New
	Ganatantrik Biplabi Andolon			0	New
	Samajtantrik Andolon			0	New
Independents				3	-12
Vacant				1	-
Invalid /Blank Votes			-	-	-
Total			100	300	0
Registered Voters/ Turnout			-	-	-

CONCEPTUAL MODEL

$Y = f (X_1 X_2 X_3 X_4 X_5)$

Y = 11^{th} Parliament Election Results of Bangladesh [PERB]

X_1 = Using Political Product Strategy for Winning Voter-market Share [UPPS]

X_2= Using Pricing Strategy for Winning Maximum Voter-market Share [UPSV]

X_3= Using Service Delivering Strategy for Maximum Voter-market Share [USDS]

X_4= Using Marketing Communication for Maximum Voter-market Share [UMCS]

X_5= Influence of other uncontrolled factors [IOUF]

OBJECTIVES

The main objective of this paper is to measure the trend of using political services marketing concept in politics by the major political organizations of Bangladesh in the recent National Election 2018 for the 11^{th} Parliament. The specific objectives are-

- To examine the using political product strategy in the election competition.
- To examine the using pricing strategy to attract the political market.
- To examine the using delivering strategy of political services.
- To examine the using marketing communication strategy in the election campaign.
- To identify the other uncontrollable factors on the election result.

METHODOLOGY

Research problem: All political organizations of Bangladesh are using political product strategy, pricing strategy, service delivering strategy, and marketing communication strategy knowingly or unknowingly. But they are not agreeing with their activities as a non-profit marketing, and instead, trying to acquire enough knowledge on the effectiveness of political services marketing in winning political power.

Hypothesis:

Ho: There is no relationship between using political services marketing strategy on the National Election Result 2018 **[Rejected]**

Ha: There is a relationship between using political services marketing strategy on the 11^{th} National Parliament Election 2018 **[Accepted]**

Nature of Research: This research is exploratory and descriptive research in nature.

Research Questions

RQ_1: Are the political competitors using product strategy in political competition?

RQ_2: Are the political competitors using pricing strategy in political competition?

RQ_3: Are the political competitors using delivering strategy in politics?

RQ_4: Are political competitors using marketing communication tools?

RQ_5: How the political services marketing affects the election results 2018?

Population and Sample Size: The population is the graduate voters of Bangladesh and the sample size is 300 voters. The sample has been selected by using the justifying method.

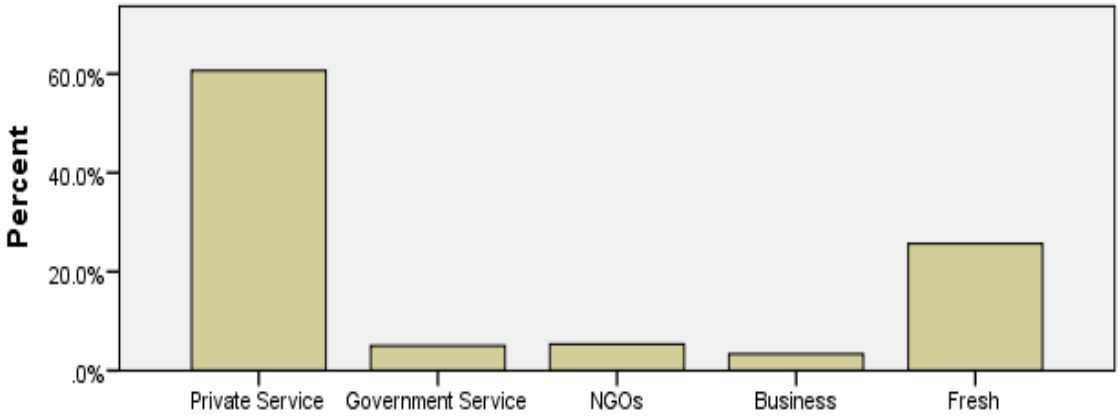
Source and nature of Data: The survey data has been collected from the Bangladesh Institute of Management (BIM) where graduate voters are studying post-graduate diploma from the different parts of Bangladesh. Both qualitative and quantitative data have been collected. Secondary data has been collected through a related literature review.

Data Collection Method: A structure and non-disguised questionnaire have been used to conduct a face to face personal interview method from the students of BIM, Dhaka.

Data Analysis Process: The survey data has been analyzed by SPSS made by IBM in preparing table, graphs, and leaner regression analysis has been conducted based on scale data in identifying the influence of using political services marketing concept on the election result of 2018 to test the hypothesis and fit the conceptual model.

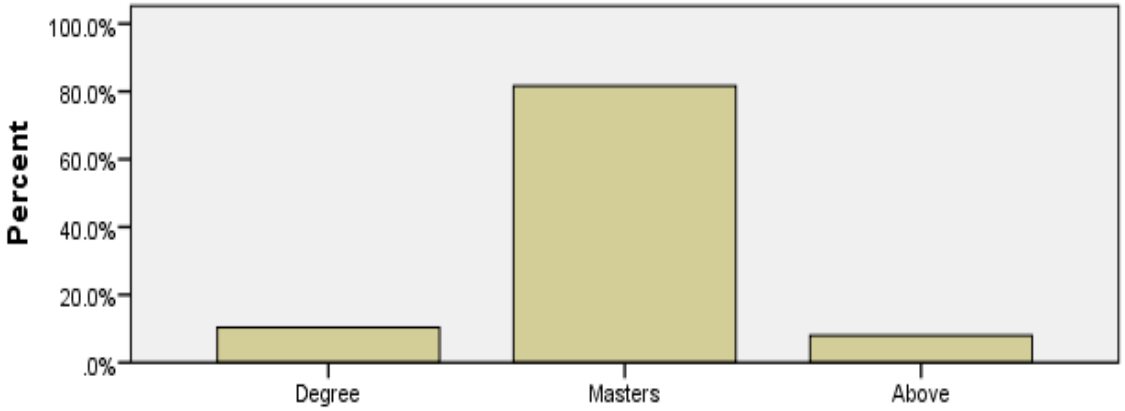
Limitation: The sample size is very short over a large population, and random sampling method has not been used in making the fieldwork easy from BIM, Dhaka.

RESULTS/FINDINGS



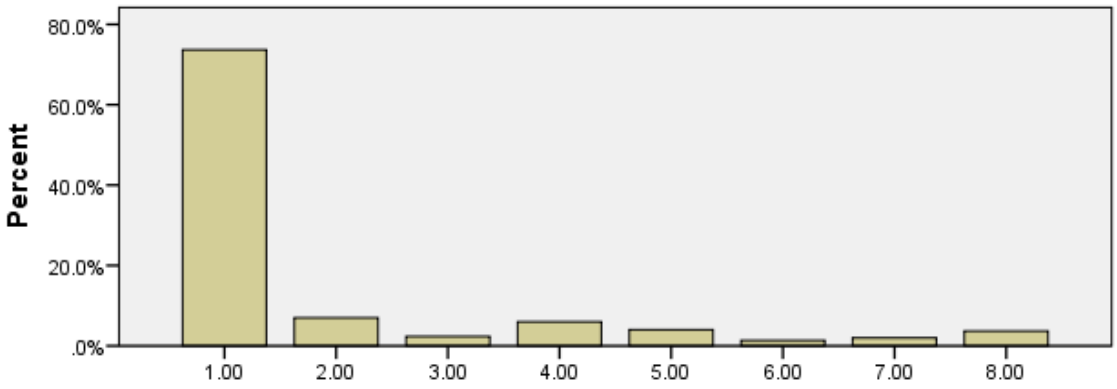
Graph no. 1 : Profession of the Sample Respondents

The graph no 1 shows that the 60% sample respondents are the private service holders, 7% respondents are government service holders, 5% respondents are NGOs jobholders, 3% respondents are businessman, and 25% sample respondents are fresh graduate voters



Graph no. 2 : Levels of Education

As per the methodology, the sample was selected from the graduate voters who understand the simple marketing system. The graph no.1 shows that 12 % of the sample respondents are the degree holders, 12% of respondents are master's degree holders, and the rest 8% of respondents are above master degree holders.



Graph no.3 : Division of Bangladesh

The graph no. 3 shows that around 75% of sample respondents are included in the sample size from Dhaka division, 8% from Khulna division, 2% is chosen from Barisal division, 5% from Rangpur, 4% from Rajshahi division, 1% from Mymensingh division, 2 % from Sylhet, and 3 % from Chattagram. The graph also shows that most of the sample respondents are the voters of Dhaka division.

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	X5= Influence of other uncontrolled factors [IOUF], X1 = Using Political Product Strategy for Winning Voter-market Share [UPPS], X2= Using Pricing Strategy for Winning Maximum Voter-market Share [UPSV], X3= Using Service Delivering Strategy for Maximum Voter-market Share [USDS], X4= Using Marketing Communication for Maximum Voter-market Share [UMCS][b]	.	Enter

a. Dependent Variable: Y = 11th Parliament Election Results of Bangladesh [PERB]

b. All requested variables entered.

Model:

A regression model has been developed for the purpose of this study. A total of 4 independent variables were included in the unrestricted model and finally, using the stepwise regression method, 4 independent variables were found to be significant in the restricted model.

The restricted Model is as follows:

$Y\ PERB = a + b_1\ UPPS + b_2\ UPSV + b_3\ USDS + b_4\ UMCS + b_{5\ IOUF}$…….

Here, Y = 11th Parliament Election Results of Bangladesh [PERB]

X_1 = Using Political Product Strategy for Winning Voter-market Share [UPPS]

X_2= Using Pricing Strategy for Winning Maximum Voter-market Share [UPSV]

X_3= Using Service Delivering Strategy for Maximum Voter-market Share [USDS]

X_4= Using Marketing Communication for Maximum Voter-market Share [UMCS]

X_5= Influence of other uncontrolled factors [IOUF]

Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.775[a]	.600	.593	18.35969

a. Predictors: (Constant), X5= Influence of other uncontrolled factors [IOUF], X1 = Using Political Product Strategy for Winning Voter-market Share [UPPS], X2= Using Pricing Strategy for Winning Maximum Voter-market Share [UPSV], X3= Using Service Delivering Strategy for Maximum Voter-market Share [USDS], X4= Using Marketing Communication for Maximum Voter-market Share [UMCS]

As per the above model summary, we see that the relationship between Dependent and Independent variables is strong (R=.77).

Above table shows that the dependent variable is 60 percent influenced by the independent variables that are included in the model. (Adjusted R Square = .60)

ANOVA

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	148565.725	5	29713.145	88.149	.000[b]
	Residual	99100.942	294	337.078		
	Total	247666.667	299			

a. Dependent Variable: Y = 11th Parliament Election Results of Bangladesh [PERB]

b. Predictors: (Constant),
X_5= Influence of other uncontrolled factors [IOUF],
X_1 = Using Political Product Strategy for Winning Voter-market Share [UPPS],
X_2= Using Pricing Strategy for Winning Maximum Voter-market Share [UPSV],
X_3= Using Service Delivering Strategy for Maximum Voter-market Share [USDS],
X_4= Using Marketing Communication for Maximum Voter-market Share [UMCS]

The ANOVA procedure tests the null hypothesis that all the β (regression coefficient) -values are zero against the alternative that at least one β (regression coefficient) is not zero. That is,

H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = ... = \beta_k = 0$

H_a: At least one β is not zero.

In the above ANOVA table, it can be seen that the null hypothesis is rejected (Since the Calculated value of F > Table value of F). In this case, we can conclude that the equation is statistically significant.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.018	3.221		1.558	.120
	X1 = Using Political Product Strategy for Winning Voter-market Share [UPPS]	.621	.047	.607	13.224	.000
	X2= Using Pricing Strategy for Winning Maximum Voter-market Share [UPSV]	.097	.046	.091	2.126	.034
	X3= Using Service Delivering Strategy for Maximum Voter-market Share [USDS]	-.040	.050	-.038	-.791	.430
	X4= Using Marketing Communication for Maximum Voter-market Share [UMCS]	.222	.051	.220	4.357	.000
	X5= Influence of other uncontrolled factors [IOUF]	.008	.036	.008	.216	.829

a. Dependent Variable: Y = 11th Parliament Election Results of Bangladesh [PERB]

β_1 = .60, i.e., 100% change in political product strategy leads to 60% change in the dependent variable.

β_2 = .090, i.e., 100% in pricing strategy leads to .090 % decrease in the dependent variable.

β_3 = -.038, i.e., 100% change in service delivery leads to -.038 % change in the dependent variable.

β_4 = .22, i.e., 100% change in marketing communication leads to 22% change in the dependent variable.

β_5 = .008, i.e., 100% change in other uncontrollable variables leads to .008% change in the dependent variable.

DISCUSSION/RECOMMENDATIONS

Based on the literature review and regression analysis, the following recommendations can be followed by major political organizations;

1. All political organizations of Bangladesh should apply marketing strategy in formulating their competitive strategy by conducting marketing research.
2. The regression analysis shows that the political product strategy leads to 60% change in the election result of 2018. Therefore, all political organization should formulate a political product strategy for designing and offering marketing research-based political product that will be practically delivered after winning power by using the government structure.
3. The literature review data has examined the trend of using indirect pricing strategy in attracting the political market by major political organizations, especially of Bangladesh Awami League knowingly or unknowingly in the election manifesto 2018. So the political organization can use pricing strategy in offering the prices of utilities, the percentage of government subsidies in pricing the essential commodities. On the other hand, analyzing survey data, it is found that the pricing strategy has influenced the National Election results in 2018 only .090%. In fact, there is a relationship between a price level, rate of tax, VAT, the price of essential commodities and problem facing voters. Therefore, political organizations can use pricing strategy in formulating their competitive strategy to attract the related segments of the political market.
4. The survey data based regression analysis shows that service delivery negatively leads to -.038 % changes the election result of 2018. It seems that the sample respondent could not better understand the question. But secondary data analysis observed that the Bangladesh Awami League has strongly communicated the quality of political services created and delivered, especially, digital means, from Union Information Centre and training for the elected local leaders and government officers from the government agencies. As a result, the party wins a huge political market share for arriving on the government platform. Therefore, all political organization should emphasize how the quality services will be delivered by designing an effective channel by the government agencies.
5. The research has also examined that marketing communication leads to 37% change in the election result. Therefore, all political organizations should use marketing communication strategy in designing their competitive political campaigning. On the other hand, it is found that the Bangladesh Awami League has used all types of marketing communication tools in winning a larger political market share. The competitors should follow it in formulating their competitive marketing communication strategies as well.

CONCLUSION

In analyzing the secondary data of the literature review, it is found that the ruling political organization, Bangladesh Awami League has used the political services marketing concept in designing the election manifesto including the three levels of political product; emotional and functional benefits of basic principles, past performance, and election manifesto (future commitments). But the organization has not declared the adaptation as a political product. The political organization has used the pricing policy as an attractive budget containing the tax, VAT and overall revenue policy as the cost of previously given political services and future committed political services. It also described the quality of delivering political services as the past performance in its detail election manifesto of 2018 to attract the political market. At another extreme, the organization has used the marketing communication tools like electronic and print media on political services distributed by using the related government agencies crossing the country and its impacts on the socio-economic development for ensuring a standard of living to attract the political market for winning power through ballot contract. The major opposition, Bangladesh Nationalist Party (BNP) has also offered an election manifesto, 2018, without considering the three levels of a political product or formulating an overall marketing strategy. But there are some competitive points of commitments in the election manifesto, 2018 of the party. On the other hand, lack of enough secondary information and survey data from the political market have examined the trend or influence of using product strategy, pricing strategy, delivering strategy, and marketing communicating strategy. The regression analysis shows that the result of the National Election 2018 has been influenced 60% by the political services marketing concept. In fact, political organizations are applying more or less all marketing tools but they do not call it as political services marketing due to tradition and political culture. However, based on the literature review data and survey data, the following recommendations in this paper can be adapted by the major political organization for creating a peaceful political environment to bring about faster socio-economic development of Bangladesh.

REFERENCES

Butler and Collins (1994). “Political Marketing: Structure and Process” European Journal of Marketing, Vol.28. no.1. pp.19-34

Datta, U.K., (2014). Scope of Political Services Marketing for Peaceful Bangladesh, Social Science Research Council, Planning Division, Ministry of Planning, Government of Bangladesh.

Datta U.K. (2016). “Political Services Marketing for Peaceful World” Delhi Business Review, Vol 17. No.1, pp.

Datta, U.K., (2017). A Model for Designing a Deliverable Political Product to Win Power for a Peaceful Democracy, Delhi Business Review, Vol. 18, No. 1, pp.

Dhaka Tribune, (2018). Awami League to use Paid T.V ads, Social Media, Extensively for Broader Campaign, 17th December 2018.

Farhad Hossen, (2018). MP, HE State Minister, Ministry of Public Administration, Government of Bangladesh. Late Edition, 2018. SA Television.

Glick, E. (1967). The New Methodology, American Institute for Political Communication. Washington, DC.

J. Lees-Marshment (2001). "The marriage of Politics and Marketing Political Studies", Vol. 49, pp. 497.

Kotler, P. and Kotler, N. (1981). "Business marketing for political candidates", Campaigns and Elections, Summer, pp. 24-33.

Kotler, P. and Kotler, N. (1999). "Political marketing. Generating effective candidates, campaigns, and causes", in Newman, B. (Ed.), Handbook of Political Marketing, Sage Publications, Thousand Oaks, CA, pp. 3-18.

Lilleker, Darren, & Lees-Marshment, Jennifer (Eds.) (2005). Political marketing: A comparative perspective. Manchester: Manchester University Press.

Mauser, G. (1983). Political Marketing. An Approach to Campaign Strategy, Praeger.

McGinniss, J. (1969). The Selling of the President 1968. Trident Press, Naples, FL.

Newman, B. and Sheth, J. (1985). "A model of primary voter behavior", Journal of Consumer Research, Vol. 12.

Smith, G. and Saunders, J. (1990). "The application of marketing to British politics", Journal of Marketing Management, Vol. 5 No. 3, pp. 295-306.

Philip Kotler, Armstrong, G., Saunders, J., & Wong, V. (1999). Principles of Marketing (Second European Edition ed.). Upper Saddle River: Prentice Hall Inc.

Philip Kotler (2004). Marketing Management, (11th Ed.), Prentice-Hall, New Jersey 07458.

Rabiul Islam, 2018. Member, Central Executive Committee, Bangladesh Nationalist Party (BNP) Late Edition, 2018. SA Television.

Shama, A. (1973). "Applications of marketing concepts to candidate marketing", Proceedings of the fourth Conference of the Association for Consumer Research, pp. 793-801.

Smith, G. and Saunders, J. (1990). "The application of marketing to British politics", Journal of Marketing Management, Vol. 5 No. 3, pp. 295-306.

O'Cass, A. (1996). "Political marketing and the marketing concept", European Journal of Marketing, Vol. 30 No. 10/11, pp. 45-61.

Election Manifesto of Bangladesh Awami League 2018, Website of Bangladesh Awami League 31-01-2019

Election Manifesto of Bangladesh Nationalist Party (BNP)

https://www.dhakatribune.com/bangladesh/election/2018/12/18/live-bnp-manifesto-for-11th-general-election [retrieved 01-02-2018]

APPENDIX -1

QUESTIONNAIRE

Questionnaire for Studying on

RECENT TREND IN USING POLITICAL SERVICES MARKETING CONCEPT IN THE ELECTION COMPETITION- 2018 OF BANGLADESH

"Please note that the information collected through this questionnaire is confidential and will be used for research purpose only."

Profile of the Respondent

[Please tick mark√ on the appropriate answer]:

1. **Profession:**
   □ Private service □ Government Service □NGOs □ Business □ Fresh
2. **levels of education:**
   □ Degree □ Masters □ Above
3. **Division :**
   □Dhaka □Khulna □Barisal □Rajshahi
   □Rangpur □Maymensigh □Sylhet □Chittagong

Question no. 1:

How would you agree that the political services marketing strategy has influenced the 11th National Parliament Election result 2018?

Answer: [Please circle the degree of relationship in the following 11 point measurement scale.]

No relationship 0 – 10 – 20 – 30 – 40 – 50 – 60 – 70 – 80 – 90 – 100 Strong relationship

The question no. 2:

How would you think that using political product strategy has influenced the national election result, 2018?

Answer: [Please circle the degree of relationship in the following 11 point measurement scale]

No relationship 0 – 10 – 20 – 30 – 40 – 50 – 60 – 70 – 80 – 90 – 100 Strong relationship

Question no. 3:

How would you believe that the using price strategy (rate of tax, VAT, the price of essential commodities, registration fees, price level, etc.) has influenced the national election result, 2018?

Answer: [Please circle the degree of relationship in the following 11 point measurement scale]

No relationship 0 – 10 – 20 – 30 – 40 – 50 – 60 – 70 – 80 – 90 – 100 Strong relationship

Question no. 4:

How would you think that political services delivering strategy (setting digital means, information service center, training of the service holders, and local leaders, etc.) has influenced the national election result, 2018?

Answer: [Please circle the degree of relationship in the following 11 point measurement scale]

No relationship 0 – 10 – 20 – 30 – 40 – 50 – 60 – 70 – 80 – 90 – 100 Strong relationship

Question no. 5:

How would you agree that using marketing communication (Television ads. Personal communication, social media, print media, public relation, publicity) has influenced the National Election to result in 2018?

Answer: [Please circle the degree of relationship in the following 11 point measurement scale]

No relationship 0 – 10 – 20 – 30 – 40 – 50 – 60 – 70 – 80 – 90 – 100 Strong relationship

Question no. 6:

How would you think that the other uncontrollable factors have influenced the election result in 2018?

Answer: [Please circle the degree of relationship in the following 11 point measurement scale]

No relationship 0 – 10 – 20 – 30 – 40 – 50 – 60 – 70 – 80 – 90 – 100 Strong relationship

AN ASSESSMENT OF PROCUREMENT LEAD TIME OF PROCUREMENT PROCESS OF DIRECTORATE OF PRIMARY EDUCATION, BANGLADESH

Md. Abu Yasin[1]

Md. Aminul Islam[2]

ABSTRACT

For successful and timely implementation of DPE's largest and main stream project, DPE had to procure hundreds of thousands of multifarious goods and services during the project implementation period. DPE made expenditure of millions of takas from the government exchequer through the development project called PEDP-3. The research was pragmatic to evaluate the procurement process followed by DPE for the procurement to support the PEDP-3 focusing on the procurement Lead Time. In doing so, Descriptive research design was done in the present study. The present study was depicted based on the observing and describing the actual fact without motivating any way. During the comparison, it was found that DPE followed about all the procurement stages prudently and proactively as per provisions of PPA, 2006 violating in nominal cases. DPE has already proved that it ensured the goods in right time in right place for the procurement packages those were processed through RFQ and OTM methods without any failure for all the packages under scope of the study. DPE's procurement process may be followed by the other government organization(s) for procuring goods and services efficiently and effectively. But DPE failed to complete all the procurement activities within the same financial year only for the big value procurement packages processed through International Competitive Bidding (ICB) methods as per DPs' Procurement Guidelines. Consequently, some of the activities and targets of the project were not achieved in time as per DPP. The current study will be used for the next generation research in the government sector of Bangladesh for evaluating the procurement process of any organization as per provision of the government procurement legislative framework.

Key words: *PPA, 2006; PPR, 2008; Lead Time, PEDP-3, Public Procurement*

[1] Assistant Account Officer, Directorate of Primary Education (DPE)

[2] Senior Management Counselor, Bangladesh Institute of Management (BIM)

INTRODUCTION

As per McGraw-Hill Dictionary of Scientific & Technical Terms, the procurement lead time is the time elapsing between the initiation of procurement action and the receipt into the supply system of the material procured. In other words, the lead time is the amount of time between the commencement and finishing of a procurement process by receiving the product/ goods. But in the government the Procurement Lead Time includes all steps from initiation of Inviting for Tenders/ Bids to receive goods or services as per Government / public procurement process. So the procurement lead time is affected by a number of factors/ steps that are handled by the procuring entities itself. The public procurement process is often delayed for different reasons. Such delays may distort the Procuring Entity's reputation, goodwill and finally make a huge waste of tax payers' money or scarce public resources.

Dr. Md. Abu Sayed Siddique (2017) expressed his result, after analyzing huge data; in Bangladesh, 70 per cent of the development budget and 25 per cent of the revenue budget are spent for public procurement which has a significant impact on the overall economy of the country. Public procurement has a direct influence on the overall gross domestic product (GDP) of Bangladesh. In Bangladesh, public procurement contributes directly to the development of the country. It ensures the timely delivery of goods to the public like construction of the roads, bridges and infrastructural development. Public procurement provides lots of job opportunities to the people directly and indirectly. It facilitates many firms, factories and organizations to participate in tenders for providing their goods and services, and as such, it ensures social protection in the country. Public procurement ensures macro-economic development. It also contributes to the infrastructural development, human development, promoting good governance and productivity and efficiency in science and technology. The procurement by different government agencies has an influence on citizens either as users of the products or as suppliers of the products or at least as tax payers.

Unfortunately, in developing countries, including Bangladesh, public procurement is not a subject of interest to the general people. Since a huge amount of money is involved in public procurement and the money comes from the public, public procurement and its whole process need to be understood by all stakeholders including the professionals, suppliers, academicians and the general public.

Right endeavor of the procuring entities as per provision of the legislative framework in the government procurement process can acquire the public trust and create a public positive impression. Immediately after the enactment of the Public Procurement Act, 2006 (PPA, 2006) and the Public procurement Rule, 2008 (PPR, 2008) by the government of Bangladesh, government organizations have gotten the legal framework for the implementation of public sector procurement processes.

The offices of government of Bangladesh have been implementing the public procurement activities in compliance with provisions of the PPA, 2006 and PPR, 2008. More than one decade has been elapsed after the public procurement legal framework in function in the country. Now it is the high time to assess the procurement processes followed by the different government offices.

DPE, one of the largest government organizations in Bangladesh, has followed the procurement provision in its procurement activities from the inception of the enactment of the PPA, 2006 and PPR, 2008 in its procurement processes for the successful implementation of the PEDP-3, a gigantic development project in the country.

In the present study, it would be the main plot whether DPE followed the provisions or not in detail in its procurement process that has a great importance in concordance with DPE's achievement, impression of the tax payers and other government organizations to the DPE. The current study will be used for the next generation research in the government sector of Bangladesh for evaluating the procurement process of any organization as per provision of the government procurement legislative. So the current study was undertaken for the societal purpose of Bangladesh to a great extent.

The Central Procurement Technical Unit (CPTU) categorized a total 13 Indicators for performance measurement of the procuring entities from the procurement process (*Islam et al.,* 2017). But in the current study following parameters were selected which directly affect the lead time for evaluating the Lead Time of a public procurement process of any government organization, such as: Packages in the approved Annual Procurement Plan (APP) started as per planned time, Contract executed within respective Financial Year, Packages dropped and/or carried over to the next Financial Year, Avg. No. of days between IFT & tender submission deadline, Avg. No. of days between tender opening & completion of evaluation, Avg. No. of days between submission of Bid Evaluation Report (BER) & approval, Avg. No. of days between final approval & Notification of Award, Avg. No. of days between NOA and contract signing, Avg. No. of days between tender opening and NOA, Avg. No. of days between IFT and contract signing, Percentage of cases tender evaluation completed within timeline and Percentage of contracts completed within original deadline.

Procurement in government is a process seeking to obtain services, goods and works in conformity with applicable laws and regulations. It is the process by which Government and public sector institutions buy inputs for vital public sector investments in physical infrastructure and for strengthening institutional human capacities which lay the foundation for national development. Procurement takes many forms. It encompasses the acquisition of goods, real property, capital equipment, built assets and services. Procurement costs in many Ministries and Departments are

substantial, consuming scarce resources of tightly constrained Government budgets. Quality, timeliness, and appropriateness of the procured inputs largely determine whether the public investment will succeed. Efficient public procurement system is therefore vital for achieving Value for Money and hence, accelerates growth and development of the country (Evelyn Nsiah-Asare and Kwadwo Boateng Prempeh, 2016).

The mission of Directorate of Primary Education (DPE) is to reduce illiteracy by providing quality primary education to all eligible children in Bangladesh. Along with the Government, DPE is serving through a program and several projects. It provides supports up to more than 62,000 schools through Headquarter to Deputy Directors' Offices (Division-level Office) to District Primary Education Officers' Offices and Primary Teachers' Training Institutes (District-level Office) to Upazila/Thana Education Officers' Office and Upazila/Thana Resource Centers (Upazila/Thana-level Office) to School. To support its large network beside the mentioned agencies, DPE also has to procure goods and services centrally for its own consumption and provide the technical support to its office and operating the project.

The Public Procurement Act, 2006 (PPA, 2006), the 24th Act, was enacted in July in 2006 by the Government of Bangladesh. A total of 73 Sections were included in the PPA, 2006 for ensuring the Transparency, accountability, equitable treatment and free and fair competition among all persons wishing to participate in the public procurement of goods, works or services using public funds. In accordance with the Section 70 of the PPA, 2006 the government promulgated the Public Procurement Rules, 2008 (PPR, 2008) for fulfillment of the main objectives of enactment of the PPA, 2006. The PPR, 2008 is both the complementary and supplementary of the PPA, 2006 as it contains a wider and process based description of the public procurement activities. Consequently, the PPA, 2006 is a document that describes the scope of the procurement activities as dos and don'ts of the public officers and the PPR, 2008 is a document that describes the procurement process as how to follow or implement the procurement activities.

Each government offices must follow the provisions of the PPA, 2006 and the PPR, 2008 to procure the goods, works and services using the public funds. Being a giant government organization, DPE has to ensure the provisions of the PPA, 2006 and the PPR, 2008 in all types of its procurement processes. DPE had to follow three procurement guidelines such as i) The PPA, 2006 for national procurement of goods; ii) The Procurement Guidelines of Asian Development Bank (ADB) for all types of Services procurement, and iii) The procurement guidelines of the World Bank (WB) for ICB procurements for its giant program named Third Primary Education Development Program, EPDP-3.

The DPE is headed by the Director General (DG), a high level official of the government. The DG of DPE is also the Project Director (PD) of the PEDP-3. An additional Director General (ADG) assists the DG. There are eight line divisions (we best call user divisions), and each is headed by a Director in DPE. The user divisions are: Administration Division; Planning & Development Division; Training Division; Monitoring and Evaluation Division; Policy and Operation Division; Finance and Procurement Division; Information and Management Division (IMD) and Program Division. There are total eight procuring entities in DPE. Seven of them are projects and the other is a project (specially called program) (confusing use of terms; must be looked carefully). All goods and service procurements under PEDP 3 are conducted at the Finance and Procurement Division of DPE. Procurement delay is a major challenge affecting project implementation. The higher the level of contract approving authority, the lesser the efficiency of the procurement system is. For large value contracts approved at the ministry or higher level, such delays are significant.

Based on the aforesaid discussion, a comprehensive knowledge about the effective use of time and identification of important factors for extending the time need to be explored so that the suppliers, development partners, other offices of the government of Bangladesh and DPE itself can use these research findings for the analysis of their own requirements to achieve their objectives. The research objectives are formulated to address the research problem.

Avoiding delays in the procurement process not only saves time and money but it also permits the timely award of contracts. A delayed contract award could cause a chain reaction of delays on other many dependent valuable targets like failure of project activities or components, creating a severe bad effect on the achievement of the important goal(s) in many projects. Even the delay completion of the procurement process may be especially important in project procurement management because it could delay the completion of the project.

LITERATURE REVIEW

The literature in the public procurement process and evaluation of the government offices' followed activities is very scanty. Some literature was reviewed in the current study.

In 2003, Meredith, J.R and Mantel S.J. Jr. described that there is a tendency to think of any project solely in terms of its outcome- that is, its performance. But the time at which the outcome is available is itself a part of the outcome. The completion of a procurement

cycle on time and on budget is quite a different outcome from the completion of the same 20 per cent over-budget or both. They identified three targets of every project. The targets are:

i) **Required quality:** The quality of work or, in other words, performance is also one of the important targets of a successful project. A project that is completed within budget limit and within due date cannot be called a successful one if the quality of work is not up-to the mark.

ii) **Budget limit:** The resources necessary to complete a project must be limited to predetermined amount. Budget limit is one of the important targets of each project.

iii) **Due date:** There must have a time period for completion of every project. The success of a project depends on its completion within the specified date.

In the official course book on 'Advanced Project Management' of the 'Chartered Institute of Purchasing & Supply', the main objectives of most projects have been described as quality, cost and time (QCT). This three parameters sometimes conflicting to one another is termed as the 'project objectives triangle' or the iron triangle.

In 2017, *Islam et. al.,* revealed that DPE could not maintain the scheduled time evaluation of the Bids/ Tenders or proposals as per provision of the PPR, 2008. DPE took 5 to 7 months' time period for evaluation and approval of the received Bids/ Tenders or proposals in case of four large procurement processes. Two procurements were completed in the next financial year. Consequently, DPE could not achieve the Disbursement Linked Indicator (DLI) set by the Development Partners for more financial aids in the PEDP-3. For the PEDP-3, DPs set 9 DLIs in different sectors of the project. One DLI was set for the timely completion of the procurement process and financial aids that would be lessened as mentioned in the DPP. For failure of the procurement process return of fund to the treasury has a very bad effect in the PE revealing that failure of the procurement activities has a chain effect.

The Federal Ministry for Economic Affairs and Energy categorized 4 types of stakeholders exist in the public procurement process, such as Strategic decision-makers and public agencies, Strategic/operational procurement officers, Users and Bidders, in the Public procurement of innovation Guide, 2nd edition in 2017. They also mentioned that all stakeholders in procurement play an important function and can contribute to an innovation friendly climate within procurement through their behavior. They concluded that an intensive exchange between/among the strategic decision makers, procurers (Procurement Entity's officers dealing with the procurement process directly and indirectly), bidders and users can be designed in a legally admissible framework which is as innovative, economical and user-friendly as possible.

According to Adagala D. V (2014), Factors Influencing Implementation of Just In Time Procurement In Public Institutions: A Case of Office of The Attorney General And Department Of Justice, the recent past decade has seen modern conventional approaches in procurement replacing the traditional approaches due to many factors including the turbulent changing procurement environment. Public bodies have always been big purchasers, dealing with huge budgets. Due to the colossal amount of money involved in government procurement, and the fact that such money comes from the public, there is need for accountability and transparency. Consequently, various countries, both developed and least developed, have instituted procurement reforms involving laws and regulations. The complexities of public procurement performance require more than just a mere policy framework in every nation. There is a need to have direct interventions that would undo the complexities that bedevil the efforts of the government and international organization for supporting the public procurement performance initiatives. In this era of quickly changing corporate environments, purchasing managers are encouraged to be proactive. Purchasing managers need to develop a more proactive strategic approach and encourage a proactive approach to purchasing planning (Rajagopal & Bernard, 1993). Proactive procurement management is the process of professionally and aggressively adding value during the four stages required for effective procurement.

In Bangladesh, 70 per cent of the development budget and 25 per cent of the revenue budget are spent for public procurement. The above chart explains that, public procurement contributes to 70 per cent of the development budget in Bangladesh, which has a significant impact on the overall economy of the country. The total development budget was Tk 818.08 million in the fiscal year (FY) 2014-15. That means, the budget expenditure for public procurement was approximately Tk 572.65 million in FY 2014-15. About 25 per cent of the revenue budget of the Bangladesh government is spent in public procurement and it has a significant influence on the overall economy of the country. The overall revenue receipt in FY 2014-15 was Tk 1,82,9.54 billion which means the tentative revenue expenditure for public procurement was Tk 45,7.38 billion in that fiscal year. Public procurement has a direct influence on the overall gross domestic product (GDP) of Bangladesh. In Bangladesh, public procurement contributes directly to the development of the country. It ensures timely delivery of goods to the public like construction of the roads, bridges and infrastructural development. Public procurement provides lots of job opportunities to the people directly and indirectly. It facilitates many firms, factories and organizations to participate in tenders for providing their goods and services, and as such, it ensures social protection in the country. Public procurement ensures macro-economic

development. It also contributes to the infrastructural development, human development, promoting good governance, and productivity and efficiency in science and technology. The procurement by different government agencies has an influence on citizens either as users of the products or as suppliers of the products or at least as tax payers.

Unfortunately, in developing countries, including Bangladesh, public procurement is not a subject of interest to the general people. Since a huge amount of money is involved in public procurement and the money comes from the public, public procurement and its whole process need to be understood by all stakeholders including the professionals, suppliers, academicians and the general public.

Evelyn Nsiah-Asare and Kwadwo Boateng Prempeh (2016) mentioned that procurement officers (Procurement professionals) make sure the operational agencies comply with procurement regulations and that they are directly involved in procuring goods, services and capital assets as authorized and funded. According to Leenders et al. (2003), the procurement department is in an extremely strategic position due to its intimate relations with other functional departments on the one hand and its close and on-going contact with large and diverse groups of outside organizations on the other. As a result of the access to information that the procurement department has regarding price trends, new and improved products and services, market conditions, and business outlooks, which are of particular importance for the purchasing department to develop, it can also make significant and valuable strategic contributions to the other departments that it serves. These contributions, according to Leenders et al. (2003), provide another basis to evaluate procurement departments' performance. Again, Ivancevich et al. (1994) explains that an organizational structure is the framework of goods and departments that direct the behavior of individuals and groups towards achieving the organizational objectives. The contributions of the Procurement Office staff definitely depend on whether or not Top-Management is prepared to work with the suggestions of the Procurement Unit or not. So the efficiency of the PE's officers handling with procurement activities directly and indirectly plays a pivotal role to ensure the arrival of the goods in right time as per APP in the government sector of Bangladesh.

Abel Dzuke, Micheline J.A. Naude (2017) identified a number of problems affecting the operational procurement process of Zimbabwean public sector as a case study. They revealed that Evaluation team members' lack of training in procurement and team members' lack of expertise in tender evaluation are problems that detract from service delivery and have resulted in the poor quality of tender evaluations. Evaluation team members' lack of knowledge of procurement ethics has resulted in poor procurement decisions being made and officers failing to distinguish between right and wrong – the result being the cultivation of corrupt tendencies (Musanzikwa 2013:125; Osei-Tutu, Badu & Owusu-Manu 2009:236). It has been noted that the use of the 100% compliance

method of evaluation has resulted in tenders being awarded to bidders without the required capacity and expertise. This is aggravated by the absence of supplier appraisals. The use of the concept of the most economically advantageous tender as the evaluation criterion is recommended, as it results in tenders being awarded to bidders with the appropriate capacity and expertise to complete the projects. The amount of time taken for evaluation at the SPB has been blamed on capacity constraints at the SPB. Devolution to the procuring entities of authority to evaluate and award tenders is necessary to improve the evaluation process, because entities have the resources to ensure that the processes are carried out with better precision and speed (Balaba 2012).

Staff in the procurement and planning department are the major contributors to delays, by planning procurement inappropriately, inability to present RFQ's on time to the suppliers, getting deficient data from bidders, inability to frame the comparison statement of bids in time, delay by the bid evaluation panel in completing the evaluation process, extended price negotiations process, long queue of approving hierarchy to review and approve the purchase order and underestimation of product lead-time (Lynch J, 2004).

Hudson Wafula Barasa (2014) asserted that four procurement activities play the pivotal role for the successful implementation of the project in his research work- Procurement Practices Affecting Effective Public Projects Implementation in Kenya: A Case Study of Kenya Civil Aviation Authority. He showed that Procurement Planning, Contract Monitoring and Control, Choice of procurement procedure and Communication are the independent variables whereas the dependent variable is the effective implementation of public projects. Essentially therefore the process of procurement planning is to serve as a safeguard against delayed implementation of public projects and to avoid situations of budgetary constraints which would hinder successful project execution and completion. Establishing whether these aspects of public procurement have had any bearing on the level of project implementation remains a significant focus for this current study. Well defined objectives and policies serve as the framework for the decisions to be made by the procurement manager. Brown and Hyer (2010) have asserted that general planning includes identifying the purpose, defining the scope, determining customer requirements (user needs), identifying tasks (key procurement activities), estimating time (delivery schedules for goods and services) and cost, assigning responsibilities and other activities. Planning answers the question: What does the organization hope to accomplish by successfully completing this project? What organizational result is expected? In conclusion, given the high percentage of respondents who said procurement planning was most important and the explanations provided on the value of procurement planning, it is important to prioritize procurement planning for successful project implementation. Although other procurement practices played a key role, procurement planning came out as a major determinant of effective implementation of public projects.

Masithembe Kafile and Stanley Fore (2018) added input to the existing body of knowledge concerning the effects of procurement processes on project execution in project management in their research paper- Effects of Procurement Processes on Project Execution in A Project Management Company in Cape Town, South Africa International Journal of Business and Administrative Studies. They also reviewed a mentioned some literature like - Pinto (2016), while project management has been broadly examined and debated by professionals, researchers and scientists alike, one of the project management phases they have neglected to concentrate on is project procurement. Wiley (2012) highlights that while project procurement is a significant stage of project execution, a review of literature demonstrates an absence of focus on project procurement issues in the general project management industry, especially in the trading of goods and services in the project procurement stage.

METHODOLOGY

Problem identification

The Directorate of Primary Education (DPE) is one of the largest government organizations in Bangladesh has been serving directly to enhance quality education to all school going children arranging some development projects. For successful implementation of the PEDP-3, one the gigantic and main stream project of DPE had to procure huge number of different types of goods and different types of consulting services. DPE used a huge amount of public funds for procurement of different types of Goods and Services for PEDP-3 from National and International sources. It is a sacred duty of DPE to ensure the availability of the goods in right time as the provision of PPA, 2006 and PPR, 2008. DPE had to follow the Procurement Guidelines of The World Bank and Asian Development Bank (ADB) for procurement of Goods from International Competitive Bidding (ICB) method and Services respectively. So there was a very good scope for identification of the current study.

Nature of the Research

Descriptive research design was done in the present study. The present study was depicted based on the observing and describing the actual fact without motivating any way. It is designed to obtain pertinent and precise information concerning the current phenomena and, where possible, to draw valid general conclusions from the facts discovered. Since the events of DPE's procurement processes were already done and records are on hand to use. The researcher used both primary and secondary data. Primary data was obtained through questionnaire, interviews and observations.

Population, Sample frame, Sampling technique, Sample size

Ninety procurement contracts proposed in the Annual Procurement Plan for the last two financial years (FY2012-13 and FY 2013-14) were thoroughly examined to gather information. In addition to this, more than one thousand supplier and or contracts and consultants signed contracts for providing goods, works and services for PEDP-3 procurement, those directly completed by DPE. On the other hand, some Audit Reports (post procurement scrutiny by the government's other agencies), websites and newspaper information were also the population of the current study. From a vast and versatile population, we selected approximately all the procurement packages done in two consecutive Financial Years i.e., FY2012-13 and FY 2013-14 to evaluate the procurement lead time and its effect on the DPE's procurement process. Ultimately, some 250 files of procurement packages were randomly selected irrespective of the procurement size, methods and items, audit reports, website and newspaper information which were reviewed as well as 10 DPE procurements that deal with procurement activities were also surveyed with a questionnaire as sample of the present study.

Types of data used and sources of data

Procurement related documents for ninety packages were thoroughly studied as the main sources of information for the study as secondary source and primary data from the interviewing with the concerned officials of the procuring entities and other stakeholders based on the preset Questionnaire.

Questionnaire Development and data collection

An open ended questionnaire was prepared and randomly surveyed 30 people directly or indirectly related to the DPE's procurement processes who were engaged for collecting Primary data. Secondary Data were also collected from the records, procurement related files, websites, paper records and audit reports.

Data analysis technique and statistical tools used

Data of two consecutive years' records, files and a number of audit reports were visited with the prior written permission of the authority of the DPE. The qualitative and quantitative data were used in this study, based on the both necessary primary and secondary sources. A questionnaire has been prepared and used to collect the primary data covering only for lead time related activities. "T" test were done for testing the variances between two different means such as the provision of Lead Time and the Actual Time taken to receive the goods for the same procurement processed through International Competitive Bidding (ICB) and some National Open Tendering Methods (OTM). The "T" values were calculated as per following equation.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$s = \frac{\sum(x_1 - \bar{x}_1)^2 + \sum(x_2 - \bar{x}_2)^2}{n_1 + n_2 - 2}$$

Where,

$\bar{x}_1$ = The mean value of number of Tender Document Sold

n_1 = The size of the sample (15)

$\bar{x}_2$ = The mean value of number of Tender Received

n_2 = The size of the sample (15)

Limitations

The study was limited to evaluate the procurement performance in terms of time consumption. There are other important dimensions of public procurement, i.e. transparency, effectiveness, competitiveness, value for money, accountability, which were not considered for this research. The study was limited to the procurement contracts following RFQ, NCB and ICB method of the project named, Third Primary Education Development Program (PEDP 3), only. Only goods procurement was considered for the study. Increasing the sample size would provide more representative results.

OBJECTIVE OF THE STUDY

The main objective of the study was as follows:

1. to assess the Procurement Lead Time of DPE's procurement process.

The specific objectives of the study were as follows:

1. to search the procurement activities as per approved Annual Procurement Plan (APP);
2. to review the effect of the failure (if any) of activities of procurement process for PEDP-3 of DPE; and
3. to observe the DPE's procurement activities followed in comparison to the provisions of the guidelines.

RESULTS AND FINDINGS

In the current study it was found that the multifarious issues affected the PEDP-3 procurement processes; those directly handled by the DPE within the two consecutive Financial Years (FY 2012-13 and FY 2013-14). The results and findings of the current study were described below:

1. It was found that Annual Procurement Plans (APPs) were prepared and approved by the competitive authority for each year after elapsed 3 – 4 months of the same years. In fact, DPE's procurement process was totally dependable on the Annual Operational Plan (AOP) of PEDP-3. PEDP-3's all activities for each year are included in the AOP that is subject to be approved by the Steering Committee of MoPME. Thus, 3 – 4 months of the beginning of financial year were elapsed for getting AOP approved. Annual Procurement Plan (APP) was prepared based on the approved AOP. That is responsible for delaying start of the procurement process on time. Hudson Wafula Barasa (2014) asserted that Procurement Planning plays the pivotal role for the successful implementation of the project. He showed that essentially, therefore, the process of procurement planning is to serve as a safeguard against delayed implementation of public projects and to avoid situations of budgetary constraints which would hinder successful project execution and completion.

2. It was found that the low value procurements packages which were processed through the RFQ and NCB methods following the PPA, 2006 guideline started as per schedule as mentioned in APP and were completed within the timeframe. It was found that DPE easily completed all the procurement packages processed through the RFQ and OTM methods within the original Tender validity period without extending Tender validity period. It indicates DPE's efficiency of handling procurement process as per guidelines. In this case DPE proved the Good Governance applicable in the public procurement process. The records says, in these cases DPE had all the delegation of financial power, discretion and responsibility to complete the process without taking help of other government bodies.

3. It was found that PEDP-3 had been implemented as the main stream project by the DPE's all line division's interventions and activities, and Director General (DG) himself/ herself is the Project Director (PD). So the Procurement and Finance Division is totally depended on the other line divisions' willing to include the procurement package/ information to start early enough to complete within the same financial year ensuring goods in right time to successful implementation of PEDP-3.

It was also found that Line Divisions' activities were not satisfactory and up to mark as per requirement of PEDP-3's successful and timely implementation. Dr. Md. Abu Sayed Siddique (2017), expressed that in developing countries, including Bangladesh, public procurement is not a subject of interest to the general people. Since a huge amount of money is involved in public procurement and the money comes from the public, public procurement and its whole process need to be understood by all stakeholders including the professionals, suppliers, academicians and the general public.

4. It was found that DPE failed to start procurement process for some big value packages as per approved APP for multiple reasons. For example, the user departments (line divisions) send incomplete information to the procurement division with back dated technical specifications or without technical specifications and without list of goods delivery point(s) of the items to be procured. Procurement division then requests to the line divisions for sending complete information to start the procurement process time and again. It was also found that the user division did not response to the modification(s) resulted from pre-tender meeting. Even it was seen that line division took more than one month for its decision on the modification on specifications and other terms and conditions of the Tender/ Bid Document. DPE has to extend tender submission period, consequently, DPE failed to ensure the goods in right time.

5. It was found that DPE could not complete all the required steps/activities within the same financial year for procurement packages, especially processed through the International Competitive Bidding (ICB) method of WB's procurement Guidelines as per Loan Agreement of the PEDP-3. In these cases the Approving Authority is the MoPME in the government side as per Delegation of Financial Power. But as per WB's requirement, DPE needs to take prior permission (called "No-objection") before going all the procurement steps from the WB. The ICB packages faced long time for meeting the conditions of both Development Partners Procurement Guidelines and Loan Agreement and government itself. Even DPE had to face redundant activities for the processing the same ICB procurement package. For example, DPE had to approve (take 'No-objection') the Bid Evaluation Report (BER) from the WB as per requirement after the evaluation was over and then from MoPME as per Delegation of Financial Power of the government. As a result some packages were dropped from the APP or carried forward to the next financial year making DPE as an inefficient organization particularly for ICB packages only for many approving authority.

6. After reviewing the files, records and documents of procurement process, it was found that DPE, the WB and the MoPME took much time to dispose the procurement issues, specially, approving the recommendation(s) in the Bid Evaluation Report (BER). DPE finally could not award the contract in favor of the winning bidder even after Bid validity period was extended two times beyond the original bid validity period for the same package. Consequently, the Bids were invalid automatically as there is no provision to extend the Bid validity period for third time as per PPR, 2008. The WB finally decided to drop the package from the total procurement plan of DPP. Consequently, DPE could not procure 3,930 Multimedia projectors from the budget of PEDP-3.

7. As per procurement processing and approval timetable of PPR 2008, any contract without considering value, number of days between final approval and Notification of Award should be at best 7. DPE issued the Notification of Award within the minimum time (within one to three days) in all the cases irrespective of National Open Tendering or International Competitive Bidding process. DPE's performance is very consistently well in this area. DPE also signed the contract as per provision in all the cases showing a good example.

8. It was found in the interview that in accordance with the Section 8 of Joint Financing Arrangement (JFA) of PEDP 3 "Goods with estimated cost of US$ 600,000 and above, and works estimated cost of US$ 2,000,000 and above, are being procured using International Competitive Bidding (ICB) methods following the World Bank's Guidelines (IDA) [Para 55]" and "All procurement of goods and services under ICB and all engagement of consulting services will be subject to prior-review respectively by IDA and ADB [Para 57]". As a result, DPE has to take no objection at every steps of the process in ICB procurement. In addition of IDA guidelines, DPE has to align with PPR 2008 and General Financial Rules to finalize a procurement process. It takes much time to complete a procurement cycle that resulting unnecessary delay. They referred to a package for a procurement process for 3930 Nos. of Multimedia Projector. World Bank provided 'No-objection' to the Bid Evaluation Report for issuing the Notification of Award in favor of the winning bidder, but MoPME did not approve the same. As a result the package was cancelled that never ensure good in right time only for the conditions of the JFA for the PEDP-3.

9. It was found that the e-GP system for National Open Tendering method needs less time as needed in the manual tendering process and PEs can avoid many untoward situations in the e-GP system. It was observed that CPTU is at the verse of processing the ICB procurement through the e-GP system that will be shorter and effective process for PEs in the country.

10. Bid Evaluation Committee took huge time than the provision for evaluating the Bids for some of the packages violating the provision of the Schedule III (Rule 8 (14)) of the PPR, 2008. In 2017, *Islam et al.* revealed that DPE took 5 to 7 months' time period for evaluation and approval of the received Bids/ Tenders or proposals in case of four large procurement processes. Two procurements were completed in the next financial year. Consequently, DPE could not achieve the Disbursement Linked Indicator (DLI) set by the Development Partners for more financial aids in the PEDP-3. For the PEDP-3, DPs set 9 DLIs in different sectors of the project. One DLI was set for the timely completion of the procurement process and financial aids would be lessened as mentioned in the DPP.

DISCUSSION/RECOMMENDATION

Based on the findings in the present study, the following recommendations were suggested to DPE and other government organizations to follow the procurement process for better achievement and better professionalism in the government purchasing arena-

1. Annual Operational Plan (AOP) should be finalized earlier in the financial year. DPE should practice to start the big procurement packages early after the inclusion of the AOP of the same financial year as the big procurements are scheduled in the total procurement plan of the Development Project Proforma (DPP). In addition, DPE should take further necessary action to approve the AOP within two weeks of the new financial years, because all line divisions of DPE is well known about their next financial years' AOP based on the DPP.

2. DPE, should process both the low value and big value national procurement packages as in compliance with the national procurement legislative PPA, 2006. In doing so, DPE should use RFQ and NCB methods of PPA, 2006 completing all activities of procurement as per schedule as mentioned in APP. The authority of power delegation and sub-delegation should delegate more power to the HOPE so that HOPE can have all discretion and responsibility to complete the process without taking help of other government bodies for taking procurement decisions.

3. The Project Director (PD), should arrange at least one monthly coordination meeting with the Directors of all Line Divisions, especially for the project implementation progress issues. Directors of all Line Divisions of DPE should be generous to extend their support to Director Finance furnishing the complete, comprehensive requisition and technical specifications etc. for timely starting the procurement process by the Director Finance. Directors of all Line Divisions of DPE should be more attentive to achieve their progress in the procurement activities carried out by the Director (Finance) to ensure their goods in right time without failure. Being the main stakeholder, Directors of all Line Divisions of DPE should be proactive for the procurement activities because they are the beneficiary of the goods as a member of the cross functional team of implementation of PEDP-3.

4. The Project Director (PD), should arrange at least one weekly coordination meeting with the Directors of all Line Divisions, especially for the project implementation progress issues. Directors of all Line Divisions of DPE should be generous to extend their support to Director Finance furnishing the complete, comprehensive requisition and technical specifications etc. for timely starting the procurement process by the Director Finance. Directors of all Line Divisions of DPE should be more attentive to achieve their progress in the procurement activities carried out by the Director (Finance) to ensure their goods in right time without failure. Are these two points repeated?

5. DPE, the PD has to coordinate the WBs' Dhaka offices activities related to the PEDP-3 procurement stages. Mainly, during the pre-review on the Bid Document, Bid Evaluation Reports and other issues for giving only 'No-objection" on the DPE's procurement stages as soon as possible without any delay reviewing as per provision. DG, DPE should arrange meeting/ sitting with WB people if there is any complexity arises with DPE people in any procurement stage, ultimately, the problem will be solved within minimum time.

6. DPE should be very proactive to develop the practicable and implementable terms and conditions in the Loan Agreements with the Development Partners for further projects. Otherwise project activities will suffer from the unnecessary dilemma like the JFA of PEDP-3.

7. MoPME, DPE, the WB, ADB and other DPs have to pay special attention on preparation, approval, and smooth implementation of the AOP of PEDP-3. So that the procurement process face any untoward dilemma.

8. DPE has to concentrate here to receive requisitions and specifications in time to ensure that procurement process start as per the Annual Procurement plan. DPE centrally must be careful to gear up all in line division's people to response to the suppliers' request as early as possible so that all the printing of Teachers Guides, Teachers Training manuals, Annual Academic Calendar printing, Supplementing Reading Materials (SRM) may get completed in time and consequently other activities may meet the target of the project.

9. Issuing NOA after the approval of the procurement packages by the competent authority of the government, DPE took less time than the provision which is a good sign, and DPE should carry on this practice as an example for the other government organizations.

10. DPE should form separate Bid Evaluation Committees (BEC) for separate types of procurement packages as per PPR, 2008 provision to lessen the burden of the BEC members to complete the evaluation process.

11. It was found that the e-GP system for National Open Tendering method needs less time as needed in the manual tendering process and PEs can avoid many untoward situations in the e-GP system. It was observed that CPTU is at the verse of processing the ICB procurement through the e-GP system that will be shorter and effective process for PEs in the country.

CONCLUSION

The Directorate of Primary Education (DPE), one of the largest Government Organizations of Bangladesh, has been working to ensure quality primary education to all school going pupils in the country. In doing so, it has to pay extra labor adopting a number of different types of development projects in the primary sector. The Third Primary Education Development Program (PEDP-3) is DPE's main stream and an umbrella type project with the financial assistance of Government of Bangladesh (GoB) and other 10 Development Partners (DPs). DPE procured thousands of goods and services for its head office and for the thousands of field level offices to meet the requirement of the project. The provisions of the PPA, 2006 and PPR, 2008 were totally followed by the DPE for procuring its PEDP-3's procurement process in consideration with the Lead Time. DPE followed all its procurement activities which were examined only on the basis of the Lead Time i.e., to ensure the goods in right time in the current study. During the comparison it was found that DPE followed about all the procurement stages prudently and proactively as per provisions of PPA, 2006 violating in nominal cases. DPE has already proved that it ensured the goods in right time in right place for the procurement packages those were processed through RFQ and OTM methods of PPA, 2006 and PPR, 2008 without any failure for all the packages under the study. But, DPE failed to complete all the procurement activities within the same financial year only for the big value International Competitive Bidding (ICB) methods followed procurement packages as per DPs procurement Guidelines. The current study was conducted only the Procurement activities of Financial Years of 2012-2013 and 2013-2014 of PEDP-3. But DPE itself has a good source of Data and Information on the public procurement arena which can be selected for further study. DPE could not ensure the goods or services in time to meet the project's requirement. Additionally, contracts are not awarded on time and this result in poor delivery of public goods and services. In this study some waste, failure of project activities, delayed fund release by the Development Partners and so on were observed in DPE's procurement process.

REFERENCES

1. Adagala D. V (2014). Factors Influencing Implementation of Just In Time Procurement In Public Institutions: A Case of Office of The Attorney General And Department Of Justice, International Journal of Academic Research in Business and Social Sciences June 2014, Vol. 4, No. 6
2. Balaba, D. (2012). Presentation on public procurement in Uganda: Achievements, challenges and future: Procurement reforms: Impact on service delivery in the local governments, Chief Administrative Officer, Association of Local Government Administrative Officers of Uganda, Kampala.
3. Brown, B., & Hyer, N. (2010). Managing Projects: A Team-Based Approach, International Edition, Singapore, Mc Graw- Hill.
4. Chartered Institute of procurement and Supply (CIPS), 2011. Measuring Purchasing Performance. Chartered Institute of Purchasing and Supply, UK.
5. Directorate of Primary Education's website: www.dpe.gov.bd accessed date: December 01, 2014.
6. Dzuke, A. & Naude, M.J.A., 2017, 'Problems affecting the operational procurement process: A study of the Zimbabwean public sector', Journal of Transport and Supply Chain Management 11(0), a255. https://doi.org/10.4102/jtscm.v11i0.255
7. Evelyn Nsiah-Asare and Kwadwo Boateng Prempeh (2016) Measures of Ensuring Value for Money in Public Procurement: A Case of Selected Polytechnics in Ghana, MPRA Paper No. 70051.
8. Federal Ministry for Economic Affairs and Energy (BMWi), Public Procurement Guide, 2nd Edition, 11019 Berlin, www.bmwi.de.
9. Hudson Wafula Barasa, Procurement Practices Affecting Effective Public Projects Implementation in Kenya: A Case Study of Kenya Civil Aviation Authority, European Journal of Business and Management, Vol.6, No.6, 2014.
10. Iqbal,J., Iqbal, Z. 2018. 'Stochastic Procurement Lead-time, Its Major Determinants and Their Impact on Operational Performance of Textile Firms: A Case Study of Faisalabad Pakistan', Asia Pacific Journal of Emerging Markets, Vol. 2, No. 2, pp.164-182
11. Islam, M. A. and Sarwar F, 2017. An Evaluation of Risk Mitigation Strategies of procurment Process of Directorate of Primary Education, Bangladesh. Management Development, 31(2), p 97 - 122.
12. John, M. Ivancevich, Peter Lorenzi, Steven J. Skinner and Philip B Crosby (1994). Management: Quality and Competiveness, Washington D.C.; Von Hoffmann Press pp. 49-52.

13. Leenders, M. R., Johnson, F. P., Flynn, E.A., Flynn, E.H., (2006). Purchasing and Supply Management (With 50 Supply Chain Cases) 13th ed, New York: McGraw Hill.
14. Lynch J. (2004). Procurement & Contact Retrieved on 17 December 2017. Retrieved from Procurement Class Room: http://www.procurementclassroom.com
15. Masithembe Kafile and Stanley Fore (2018), Effects of Procurement Processes on Project Execution in A Project Management Company in Cape Town, South Africa International Journal of Business and Administrative Studies volume 4 issue 4 pp. 176-186 doi: https://dx.doi.org/10.20469/ijbas.4.10005-4.
16. McGraw-Hill Companies, Inc., 2003. McGraw-Hill Dictionary of Scientific & Technical Terms.
17. Musanzikwa, M., 2013, 'Public procurement system challenges in developing countries: The case of Zimbabwe', International Journal of Economics, Finance and Management Sciences 1(2), 119–127. https://doi.org/10.11648/j.ijefm.20130102.18
18. *Osei-Tutu, E., Badu, E. & Owusu-Manu, D., 2009, 'Exploring corruption practices in public procurement of infrastructural projects in Ghana', International Journal of Managing Projects in Business 3(2), 236–256. https://doi.org/10.1108/17538371011036563*
19. *Pinto, K. (2016). Project management achieving competitive advantage. Edinburg, TX: Pearson.*
20. The Financial Express, 2017. Dr. Md. Abu Sayed Siddique: Public procurement contributes to national development: A National Daily of Bangladesh, Published: June 06, 2017.
21. The Government of Bangladesh (GoB), 2011. Joint Financial Arrangement (JFA) for Third Primary Education Development Program (PEDP 3) between Government of Bangladesh and development partners.
22. The Government of Bangladesh (GoB), 2011. Program Document, Third Primary Education Development Program (PEDP 3).
23. The People's Republic of Bangladesh, Public Procurement Acts, (2006).
24. The People's Republic of Bangladesh, Public Procurement Rules, (2008).
25. The World Bank (WB), 2002. The Country Procurement Assessment Report for Bangladesh.
26. The World Bank (WB), 2006. Guidelines Procurement Under IBRD Loans And IDA Credits.
27. *Wiley, J. (2012). The procurement & supply managers desk reference. New Jersy, NJ: John Wiley & Sons.*

ANNEX-1

List of Tables used in the results and findings section.

Table 1: Packages in the approved Annual Procurement Plan

Financial Year	**RFQ**	**NCB**			**ICB**			**Total**
	Value ≤ BDT. 5.00 lac	**Value ≤ BDT. 1.00 crore**	**Value >BDT. 1.00 crore**	**Total**	**Value ≤ BDT. 10.00 crore**	**Value > BDT. 10.00 crore**	**Total**	
	1	*2*	*3*	*4= (2+3)*	*5*	*6*	*7= (5+6)*	*8= (1+4+7)*
FY12-13	13	13	7	20	0	4	4	37
FY13-14	8	32	6	38	1	6	7	53

Table 2: Procurement started as per planned time

Financial Year	**RFQ**	**NCB**			**ICB**			Total
	Value ≤ BDT. 5.00 lac	**Value ≤ BDT. 1.00 crore**	**Value >BDT. 1.00 crore**	**Total**	**Value ≤ BDT. 10.00 crore**	**Value > BDT. 10.00 crore**	**Total**	
	1	*2*	*3*	*4= (2+3)*	*5*	*6*	*7= (5+6)*	*8= (1+4+7)*
FY 12-13	9	9	3	12	0	2	2	23
FY 13-14	5	21	3	24	0	0	0	29

Table 3: Contract executed within respective Financial Year

Financial Year	RFQ	NCB			ICB			Total
	Value ≤ BDT. 5.00 lac	Value ≤ BDT. 1.00 crore	Value >BDT. 1.00 crore	Total	Value ≤ BDT. 10.00 crore	Value > BDT. 10.00 crore	Total	
	1	*2*	*3*	*4= (2+3)*	*5*	*6*	*7= (5+6)*	*8= (1+4+7)*
FY 12-13	13	8	2	10	0	1	1	24
FY 13-14	8	26	2	28	0	0	0	36

Table 4: Packages dropped and/or carried over to the next FY

Financial Year	RFQ	NCB			ICB			Total
	Value ≤ BDT. 5.00 lac	Value ≤ BDT. 1.00 crore	Value >BDT. 1.00 crore	Total	Value ≤ BDT. 10.00 crore	Value > BDT. 10.00 crore	Total	
	1	*2*	*3*	*4=(2+3)*	*5*	*6*	*7= (5+6)*	*8= (1+4+7)*
FY 12-13	0	5	5	10	0	3	3	13
FY 13-14	0	6	4	10	1	6	7	17

Table 5: Avg. No. of days between Tender Opening & completion of Evaluation

Avg. No. of days between Tender Opening & completion of Evaluation		FY 2012-13	FY 2013-14
RFQ	Value ≤ BDT. 5.00 lac	3	3
NCB	Value ≤ BDT. 1.00 crore	47	43
	Value >BDT. 1.00 crore	44	39
ICB	Value ≤BDT. 10.00 crore	-	-
	Value >BDT. 10.00 crore	95	-

Table 5.6: Avg. No. of days between IFT and Contract Signing

Avg. no. of days between IFT and Contract Signing		FY 2012-13	FY 2013-14
RFQ	Value ≤ BDT. 5.00 lac	14	16
NCB	Value ≤ BDT. 1.00 crore	94	91
	Value >BDT. 1.00 crore	109	104
ICB	Value ≤BDT. 10.00 crore	-	-
	Value >BDT. 10.00 crore	191	-

Table 12: % of cases Tender evaluation completed within timeline

Contract executed within timeline		**FY 2012-13**	**FY 2013-14**
RFQ	Value ≤ BDT. 5.00 lac	13	8
NCB	Value ≤ BDT. 1.00 crore	8	26
	Value >BDT. 1.00 crore	2	2
ICB	Value ≤BDT. 10.00 crore	-	-
	Value >BDT. 10.00 crore	1	-
% of cases Tender evaluation completed within timeline:			
RFQ	Value ≤ BDT. 5.00 lac	100%	100%
NCB	Value ≤ BDT. 1.00 crore	62%	81%
	Value >BDT. 1.00 crore	29%	33%
ICB	Value ≤BDT. 10.00 crore	-	0%
	Value >BDT. 10.00 crore	25%	0%

Table 13: % of contracts completed within original deadline

Contracts completed within original deadline		**FY 2012-13**	**FY 2013-14**
RFQ	Value ≤ BDT. 5.00 lac	11	6
NCB	Value ≤ BDT. 1.00 crore	5	21
	Value >BDT. 1.00 crore	2	2
ICB	Value ≤BDT. 10.00 crore	-	-
	Value >BDT. 10.00 crore	-	-
% of contracts completed within original deadline			
RFQ	Value ≤ BDT. 5.00 lac	85%	75%
NCB	Value ≤ BDT. 1.00 crore	42%	65%
	Value >BDT. 1.00 crore	29%	33%
ICB	Value ≤BDT. 10.00 crore	-	-
	Value >BDT. 10.00 crore	-	-

Annex-2:

List of the Figures used in the Results Section.

5.1.1 Packages in the approved Annual Procurement Plan (APP)

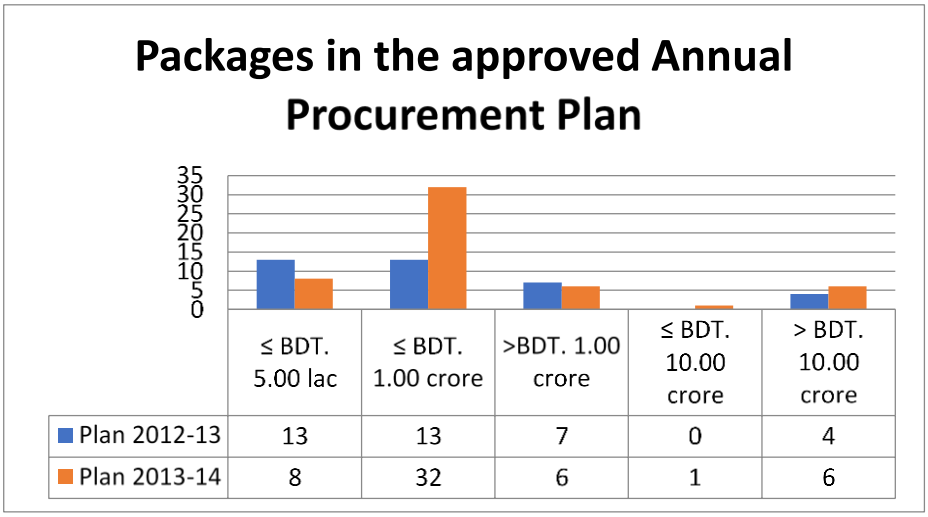


Figure 5.1: Packages in the approved Annual Procurement Plan

5.1.2 Procurement started as per planned time

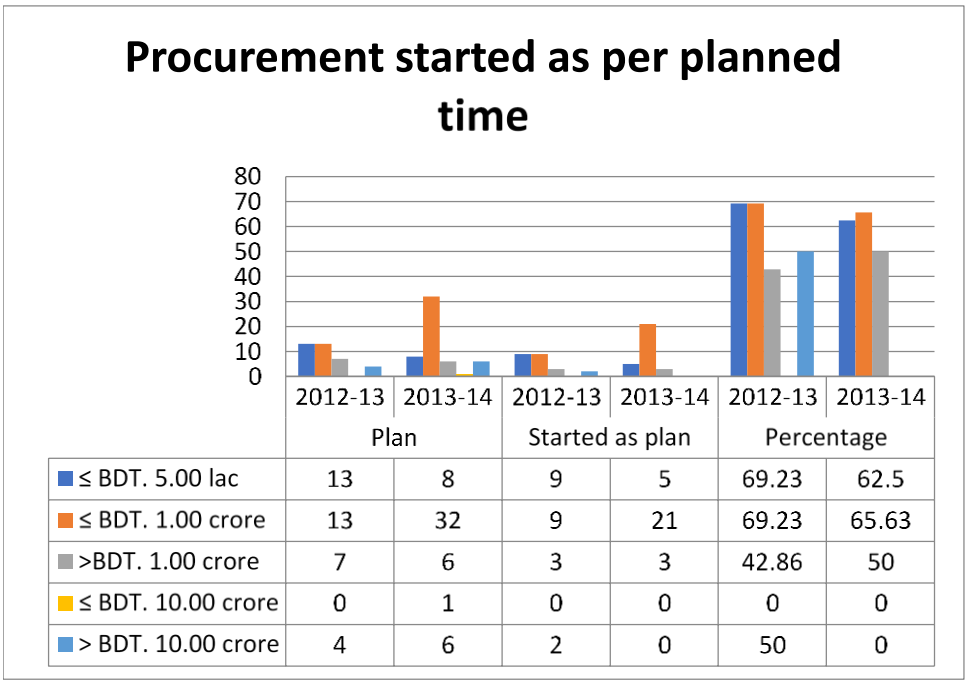
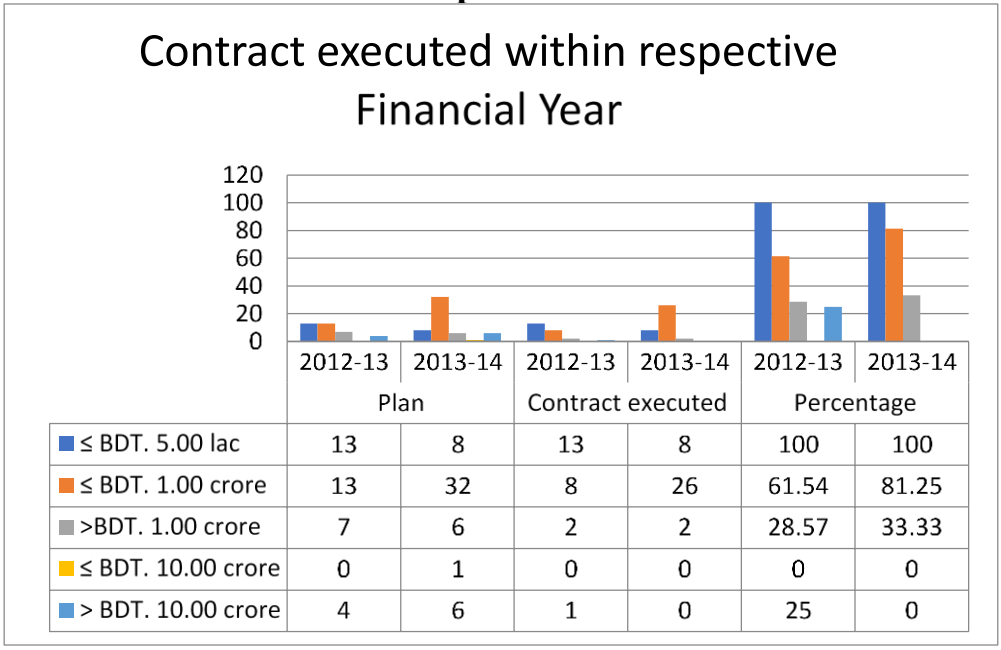


Figure 5.2: Procurement started as per planned time

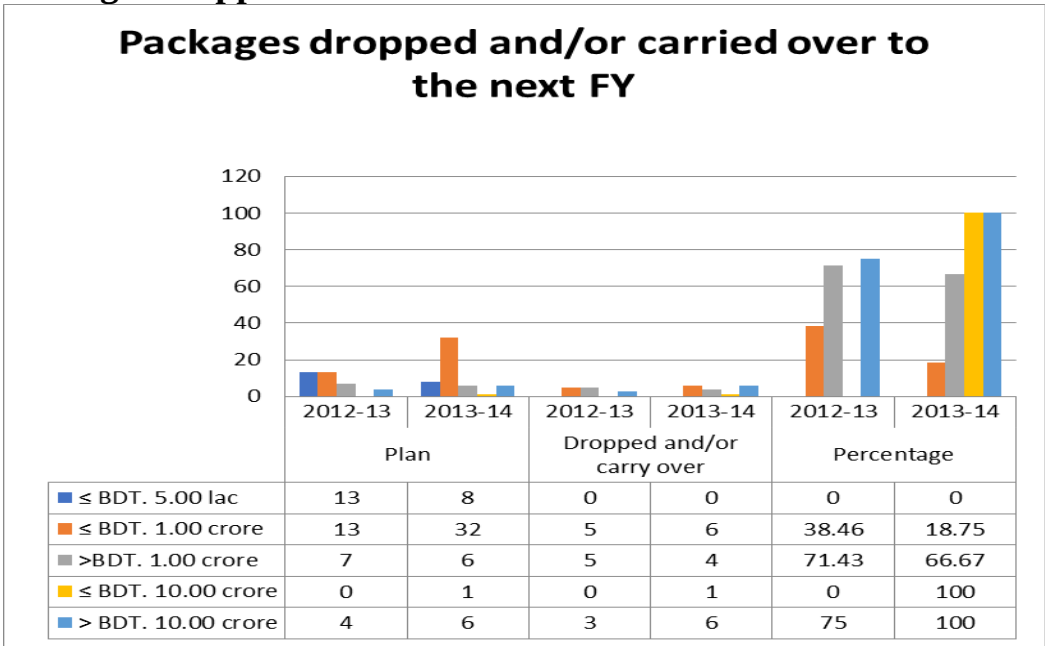
5.1.3 Contract executed within respective Financial Year



	2012-13 Plan	2013-14 Plan	2012-13 Contract executed	2013-14 Contract executed	2012-13 Percentage	2013-14 Percentage
≤ BDT. 5.00 lac	13	8	13	8	100	100
≤ BDT. 1.00 crore	13	32	8	26	61.54	81.25
>BDT. 1.00 crore	7	6	2	2	28.57	33.33
≤ BDT. 10.00 crore	0	1	0	0	0	0
> BDT. 10.00 crore	4	6	1	0	25	0

Figure 5.3: Contract executed within respective Financial Year

5.1.4 Packages dropped and/or carried over to the next FY



	2012-13 Plan	2013-14 Plan	2012-13 Dropped and/or carry over	2013-14 Dropped and/or carry over	2012-13 Percentage	2013-14 Percentage
≤ BDT. 5.00 lac	13	8	0	0	0	0
≤ BDT. 1.00 crore	13	32	5	6	38.46	18.75
>BDT. 1.00 crore	7	6	5	4	71.43	66.67
≤ BDT. 10.00 crore	0	1	0	1	0	100
> BDT. 10.00 crore	4	6	3	6	75	100

Figure 5.4: Packages dropped and/or carried over to the next FY

5.1.6 Avg. No. of days between tender opening & completion of evaluation

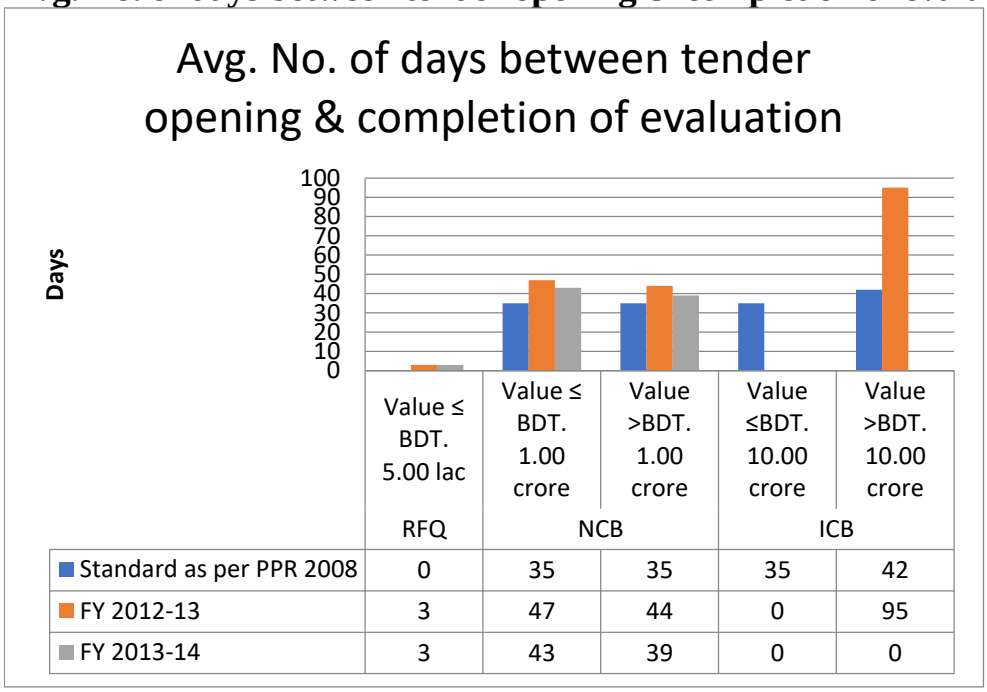


Figure 5.6: Findings against Avg. No. of days between Tender Opening & Evaluation

5.1.7 Avg. No. of days between submission of Bid Evaluation Report (BER) & approval

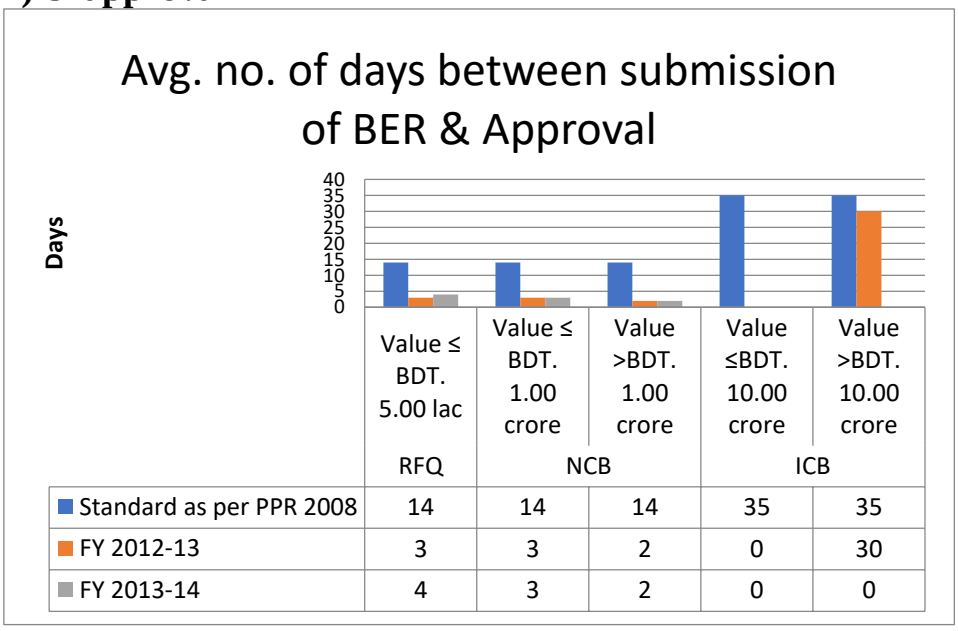


Figure 5.7: Findings against Avg. No. of days between submission of BER & Approval

5.1.8 Avg. No. of days between final approval and Notification of Award

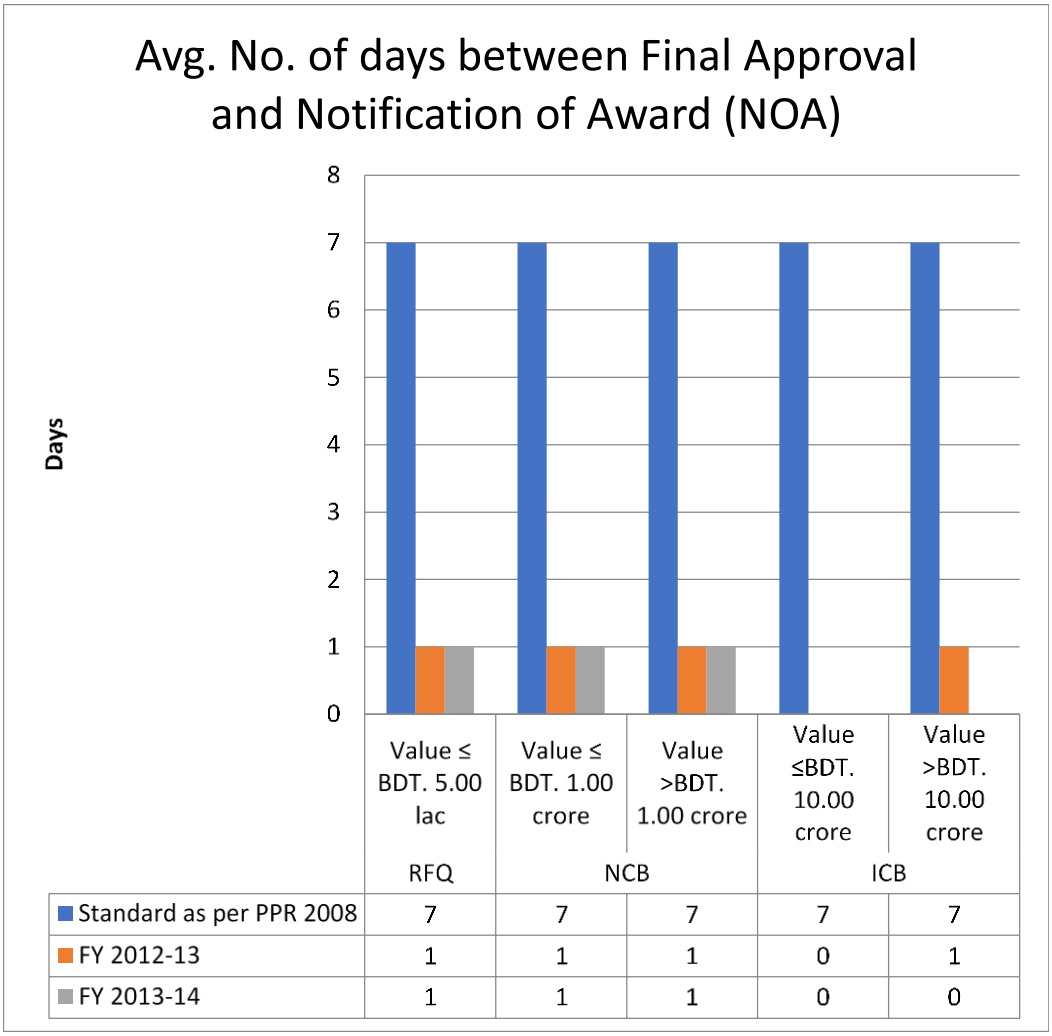
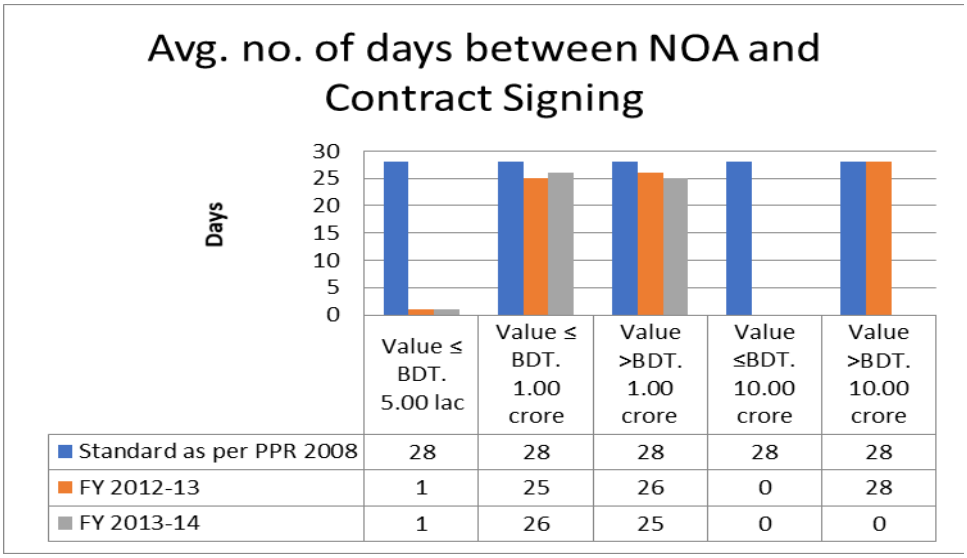


Figure 5.8: Findings against Avg. No. of days between final approval and NOA

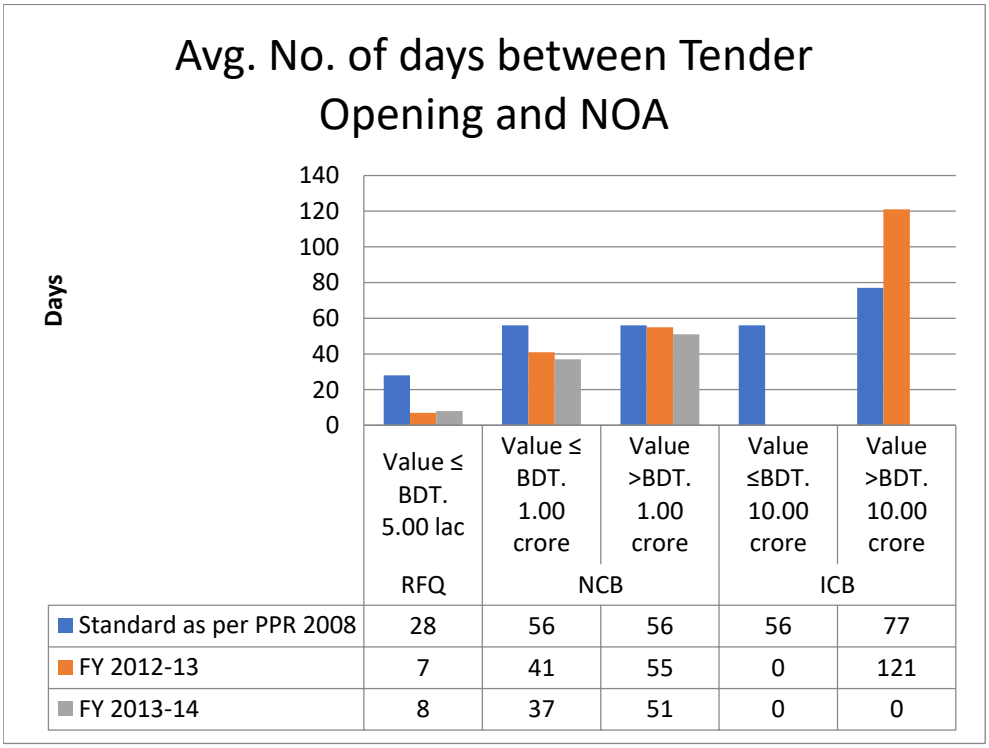
5.1.9 Avg. No. of days between NOA and contract signing



	Value ≤ BDT. 5.00 lac	Value ≤ BDT. 1.00 crore	Value >BDT. 1.00 crore	Value ≤BDT. 10.00 crore	Value >BDT. 10.00 crore
Standard as per PPR 2008	28	28	28	28	28
FY 2012-13	1	25	26	0	28
FY 2013-14	1	26	25	0	0

Figure 5.9: Findings against Avg. No. of days between NOA and Contract Signing

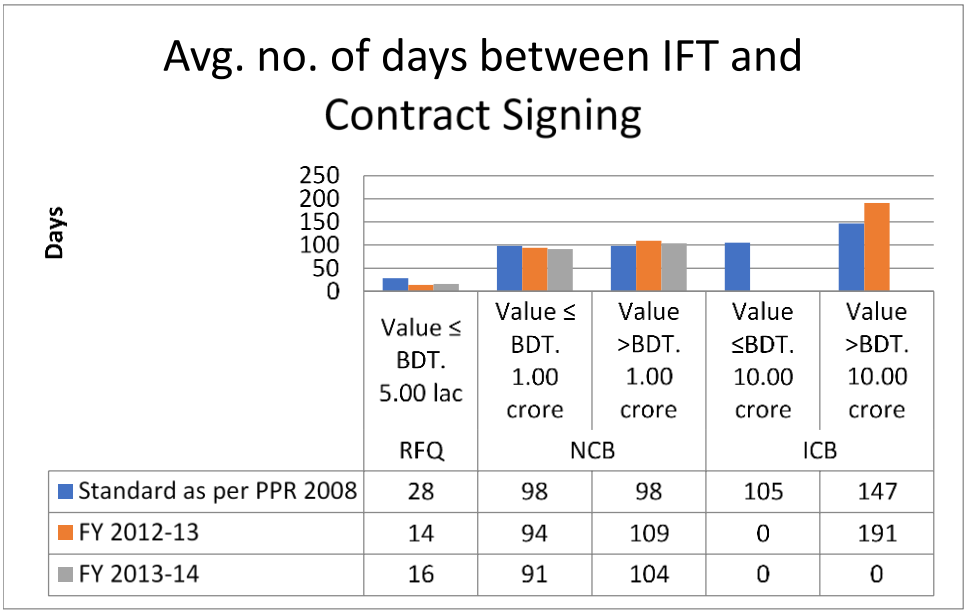
5.1.10 Avg. No. of days between tender opening and NOA



	Value ≤ BDT. 5.00 lac	Value ≤ BDT. 1.00 crore	Value >BDT. 1.00 crore	Value ≤BDT. 10.00 crore	Value >BDT. 10.00 crore
	RFQ	NCB		ICB	
Standard as per PPR 2008	28	56	56	56	77
FY 2012-13	7	41	55	0	121
FY 2013-14	8	37	51	0	0

Figure 5.10: Findings against Avg. No. of days between Tender Opening and NOA

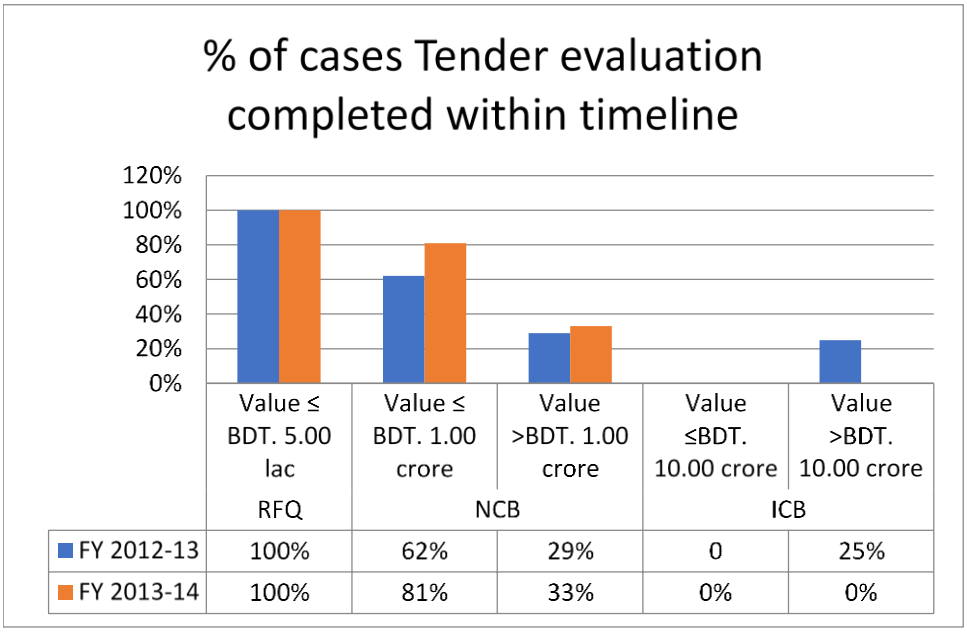
5.1.11 Avg. No. of days between IFT and contract signing



	Value ≤ BDT. 5.00 lac	Value ≤ BDT. 1.00 crore	Value >BDT. 1.00 crore	Value ≤BDT. 10.00 crore	Value >BDT. 10.00 crore
	RFQ	NCB		ICB	
Standard as per PPR 2008	28	98	98	105	147
FY 2012-13	14	94	109	0	191
FY 2013-14	16	91	104	0	0

Figure 5.11: Findings against Avg. No. of days between IFT and Contract Signing

5.1.12 Percentage of cases tender evaluation completed within timeline



	Value ≤ BDT. 5.00 lac	Value ≤ BDT. 1.00 crore	Value >BDT. 1.00 crore	Value ≤BDT. 10.00 crore	Value >BDT. 10.00 crore
	RFQ	NCB		ICB	
FY 2012-13	100%	62%	29%	0	25%
FY 2013-14	100%	81%	33%	0%	0%

Figure 5.12: Findings against % of cases tender evaluation completed within timeline

5.1.13 Percentage of contracts completed within original deadline

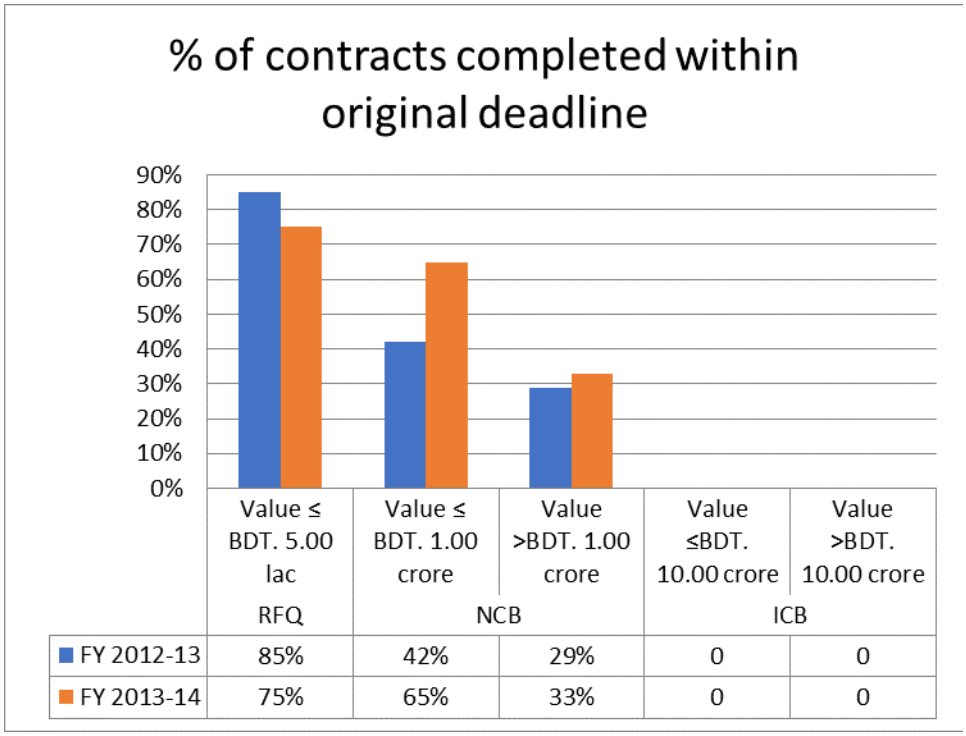


Figure 5.13: Findings against % of contracts completed within original deadline

DEVELOPMENT NEED ASSESSMENT OF LIGHT ENGINEERING SECTOR OF BANGLADESH

Mohammad Sayeedur Rahman[1]

Md. Monowar Uddin Talukdar[2]

Md. Mozaffar Hossain[3]

Tanmay Das[4]

ABSTRACT

Even a decade ago, the field of light engineering would not have received sufficient attention. An assessment to identify the gaps between desired and actual outcomes is required for an industry particularly when it can be found to be directly or indirectly assisting other industries. As for the light engineering industry, it is now being considered as a potential growth sector in Bangladesh. This sector has always supported our major industries, which have been playing a very supportive role in increasing our foreign exchange reserves. The research tries to identify the needs for development intervention in the Light Engineering Sector of Bangladesh. Following a qualitative and quantitative design, we conducted 410 in-depth structured and semi-structured interviews with the owners, managers and employees in this sector. To make the research findings reliable, different statistical tools have been used. Considering the major needs for development intervention, several crucial factors have been identified for further research and for decision making.

Keywords: *Light Engineering, LE Sector, Development Needs Assessment, Bangladesh*

[1] Management Counselors, Bangladesh Institute of Management (BIM)
[2] Research Fellow, University of Dhaka
[3] Associate, Inspira Advisory & Consulting
[4] Freelance Researcher

1. INTRODUCTION:

A key subsector of Bangladesh's SME economy, Light Engineering (LE) provides the machinery, spare parts, and maintenance services needed for supporting other industries (Hoque, 2014). Essentially, this sector emerged in our country to serve the large-scale industries by producing and supplying a wide range of spare parts, castings, moulds and dices, oil and gas pipeline fittings, light machinery, etc., and by offering extensive repair services to these (Banik & Swarna, 2018; A. Talukder & Jahan, 2017). The sector generates three categories of goods and services: entire machinery, replacement parts, and repair services (Majumder & Dey, 2020).

LE sector as a whole is designated as a high priority sector in the current National Industry Policy (2016) and as a special development sector in the Export Policy 2018-2022 and is therefore eligible for receiving favourable incentives and facilities. Bangladesh has maintained an envious annual GDP growth rate above six percent over the last two decades. Sustained growth of the economy needs development of the manufacturing industry supported by a strong Light Engineering sector (M. A. Talukder & Jahan, 2016), due to which we need to determine the needs for development in the Light Engineering Sector of Bangladesh. It has a great potential to contribute towards technological advancement and economic development (Rahman et al., 2016) of the country. The sector makes three contributions: complete machinery production, spare parts production and repair services (A. Talukder & Jahan, 2017). The existence of abundant low-cost labour along with high domestic demand are the main reasons behind the bright prospects of LES in Bangladesh (Akhtaruzzaman et al., 2020).

2. LITERATURE REVIEW:

The Light Engineering Sector has notable significance in the overall manufacturing sector of Bangladesh. This paper tries to assess the sector-based development needs of the Light Engineering Sector of Bangladesh. Banik et al. (2018) highlighted that non-existence of Common Facility Centre (CFC), lack of metal and heat treatment facilities, constraints related to finance, old and manual technology, unfair competition in the domestic market, inadequate accreditation of standards etc. are the major issues for this sector. This paper provides some specific suggestions and recommendations that helps to increase the capacity, efficiency and competitiveness of this sector (Banik & Swarna, 2018).

Few studies have been conducted on the competing factors that influence customers' purchase decisions for light engineering products of small and medium enterprises (SMEs) in an underdeveloped economy like Bangladesh, despite the fact that these products account for a significant portion of Bangladesh's GDP (Rahman et al., 2016).

This study highlights some of the most important factors such as quality, price and country of origin that influence purchase decisions of SME light engineering products in Bangladesh and also reveals that price, quality and country of origin have positive impact on customers' purchase decision for small and medium LES products. The price has the strongest impact on purchase decisions followed by country of origin and quality.

Afraz et al., (2014) said that electricity shortages, corruption, crime, theft, disorder, lack of access to finance, macroeconomic instability, political instability, and inadequate workforce are barriers to the growth of small firms in a qualitative assessment of selected LE firms in Pakistan. The absence of a formal structure in the supply chain is also a problem (A. Talukder & Jahan, 2017).

A. Talukder et al. (2017) attempts to assess the major hindrances to achieving competitiveness and growth for the light engineering MSMEs in the changed scenario. Light engineering talents of Dholaikhal and Jinjira have long been a lifeline for the manufacturing industries and automobile sector of Bangladesh. Recent studies have shown that they are passing through hard times and the government institutions are not supporting them to face the challenges and exploit the opportunities of their competitiveness and growth. First generation light engineering entrepreneurs have passed on the sector to the next generation. Much around them has changed (A. Talukder & Jahan, 2017).

On the other hand, several operational barriers are found in the LE sector of Bangladesh which are: inflow of cheap foreign LE products, backdated technology, little interest in upgrading technology, changes in customer product needs, shortages of staff, loss of interest in working in the LE factories, lack of policy support, harassment by public agencies, stagnation of local demand, old machines, small shops, dirty environment, entrepreneurs being worker-turned-owners etc. (A. Talukder & Jahan, 2017).

Demand-side analysis is needed to measure perceptions and attitudes of buyers towards local spare parts. Local spare parts aren't far behind imported ones when it comes to product qualities (Ahmad & Jahan, 2017). These products have both domestic and international demand and the demand would only be growing due to rapid industrialization (Banik & Swarna, 2018).

A well-planned business ecosystem is needed to develop the light engineering sector. Proper dedicated institutions should also be set up to overcome challenges facing the sector and capture opportunities. Institutions having diverse focus lack vision, resources and understanding of the requirement of a particular sector. An institution dedicated to the development of light engineering sector needs to be established to unleash its potentials (M. A. Talukder & Jahan, 2016).

Mottaleb et. al. (2012) empirically demonstrated that the application of modern production and marketing techniques is mainly a function of institutional knowledge of an entrepreneur measured by his years of schooling. This sector suffers from rudimentary problems that have plagued it for years in two fronts — technological deficiencies and marketing inefficiencies. The technological deficiencies are outside the purview of the study, whereas the marketing challenges are at the center of the research (Mottaleb & Sonobe, 2012).

Islam et al. (2022) explored two objectives regarding the Occupational Health and Safety (OHS). First, to identify the ways of improving the OHS training and knowledge among the owners and workers for fair labour practices. Second, to assess the impact of coupling OHS training with business training and access to finances as a possible complement to OHS training (A. Islam et al., 2022).

A large number of vehicles are plying on the roads that need repairs and other services. Because of this opportunity, a large number of automobile workshops have been established and are operating throughout the country. Many uneducated youths get employment in these workshops and thereby help alleviate poverty. Small-scale, non-farm enterprises, particularly in rural areas, are shown to be vital, being the only resort for those without land, or without the necessary skills to secure wage employment which is more remunerative than informal self-employment. Small enterprise development schemes should be preferred to reduce unemployment (Kayemuddin & Kayum, 2013).

3. OBJECTIVES OF THE STUDY:

The main objective of the research is to identify the major needs for intervention in the light engineering sector of Bangladesh. To support the main objective, other objectives in the study are-

1. To explore the tracing factors of access to finance for the needs of development for the sustainable growth of LES in Bangladesh.
2. To identify the operational barriers and intention for relocation of their production base for better business opportunities.
3. To figure out the best way available to get information and communicate about the new product development.
4. To discover the business and capacity development intention for overall progress of LE entrepreneur.

4. RESEARCH METHODOLOGY:

The nature of the study is both qualitative and quantitative in nature. The research used descriptive statistics for demographic information and inferential statistics used for other analysis.

Sample size, strategy and area:

The sample size of the research is 410 light engineering owners selected based on convenience and clustered sampling methods. The SME Foundation has identified 31 light engineering clusters in 18 districts of Bangladesh with about 7,500 enterprises (Banik & Swarna, 2018). By considering the significance of different light engineering firms in different parts of Bangladesh and based son geographical advantages, the sampling area covered 13 district of Bangladesh which are Dhaka, Gazipur, Narayanganj, Narsingdi, Chattogram, Chuadanga, Jessore, Kishoreganj, Kushtia, Naogaon, Bogra, Pabna and Sirajganj.

Data Collection Methods:

Structured questionnaires were used to collect specific answers from the respondents. Both the open-ended and closed-ended questions were used to conduct in-depth interviews for learning about the actual thoughts of the LE sector players.

Literature search and analysis:

When we used advanced search in google scholar for the period of 2010 to 2020, we got only four articles on "light engineering industry in Bangladesh" and when we expanded the focus of the search we got 25 articles. From these we learnt about the literature on the Light Engineering sector in Bangladesh. On the other hand, many reports and news were found regarding this sector. Data was analyzed by using IBM SPSS 16 version.

5. DATA ANALYSIS AND PRESENTATION:

Demographic information:

Light engineering sectors can be categorized according to geographical locations. Dholaikhal and Jinjira of Bangladesh once became iconic sites of Light Engineering Sector that had sparked hopes of industrial revolution in the country (A. Talukder & Jahan, 2017). Other districts of Bangladesh have also provided light engineering products and services. Demographic status of the respondents in this research are stated on table 01.

Table: 01 Demographic profile of respondents

District * Size of Business * Types of Business Cross Tabulation						
		Size of business				
Types of business	District	Large	Medium	Micro	Small	Total
Partnership	Bogra	0	3	0	2	5
	Dhaka	1	2	1	1	5
	Gazipur	0	1	0	1	2
	Kishoreganj	2	1	0	0	3
	Naogaon	0	0	0	2	2
	Narsingdi	0	0	0	2	2
	Pabna	0	1	0	1	2
	Cumulative Total	3	8	1	9	21
Private limited	Kishoreganj	1				1
	Cumulative Total	1				1
Sole proprietorship	Bogra	3	7	0	23	33
	Chattogram	5	13	2	5	25
	Chuadanga	2	3	10	5	20
	Dhaka	3	22	7	20	52
	Gazipur	1	20	11	10	42
	Jessore	0	8	12	4	24
	Kishoreganj	1	3	12	8	24
	Kushtia	0	11	7	2	20
	Naogaon	6	13	1	17	37
	Narayanganj	4	15	2	4	25
	Narsingdi	0	1	1	16	18
	Pabna	1	16	12	9	38
	Sirajganj	0	8	7	15	30
	Cumulative Total	26	140	84	138	388

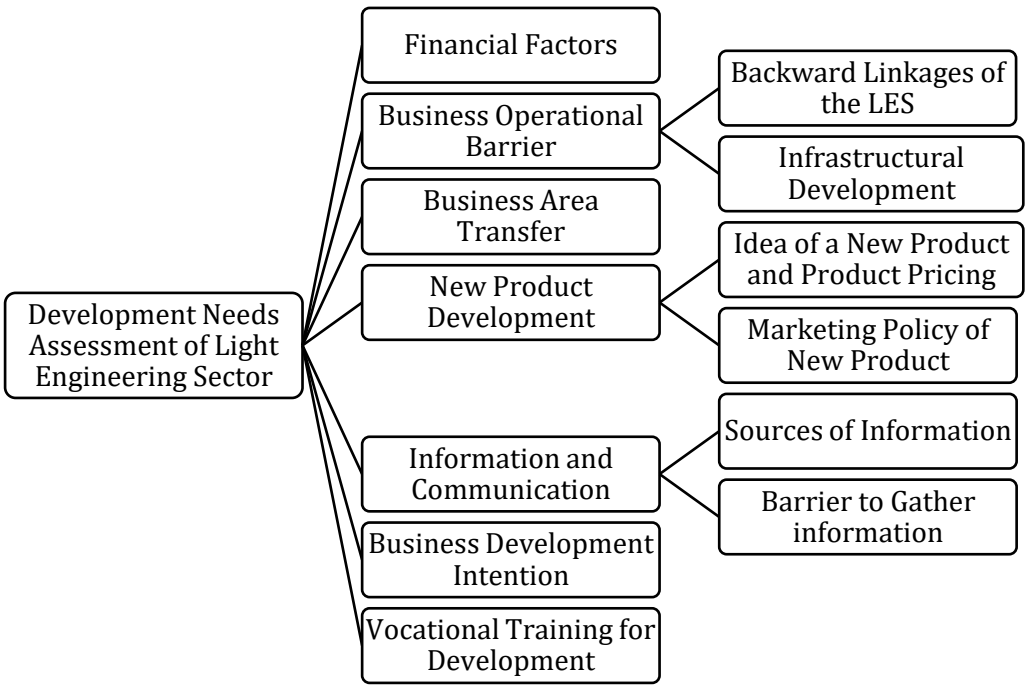
Note: A cottage industry of LE in Dhaka which is treated as small industry *is* in the table.

Most of the light engineering firms were found to be micro and small in nature that are financed and managed by the owners of the businesses (Hoque, 2014a). Out of 410 samples the study found micro (85), small (147), medium (148) and large firm owners (30). Demographic study showed that the light engineering firms can also be categorized based on ownership status where there are partnership (94 percent), sole proprietorship business (5) and private limited companies (1). In the sample, there were 358 direct owners (87%), 31 managers (7.6%), 11 employees (2.7%) and the remaining 10 (2.4%) were from other light engineering backgrounds.

Conceptual framework of the study:

For the sake of urging government priority, some key components have been identified to assess the development needs of the light engineering sector of Bangladesh. The findings are based on the perception of LE owners, managers, employees, supervisors, and expats. Based on the observations, expert opinions, and analyses, the key points determining the development needs assessment are financial factors, business operational barriers, business location transfer, marketing policy of newly developed products, business communication for business development, vocational training for self-development, and employee development.

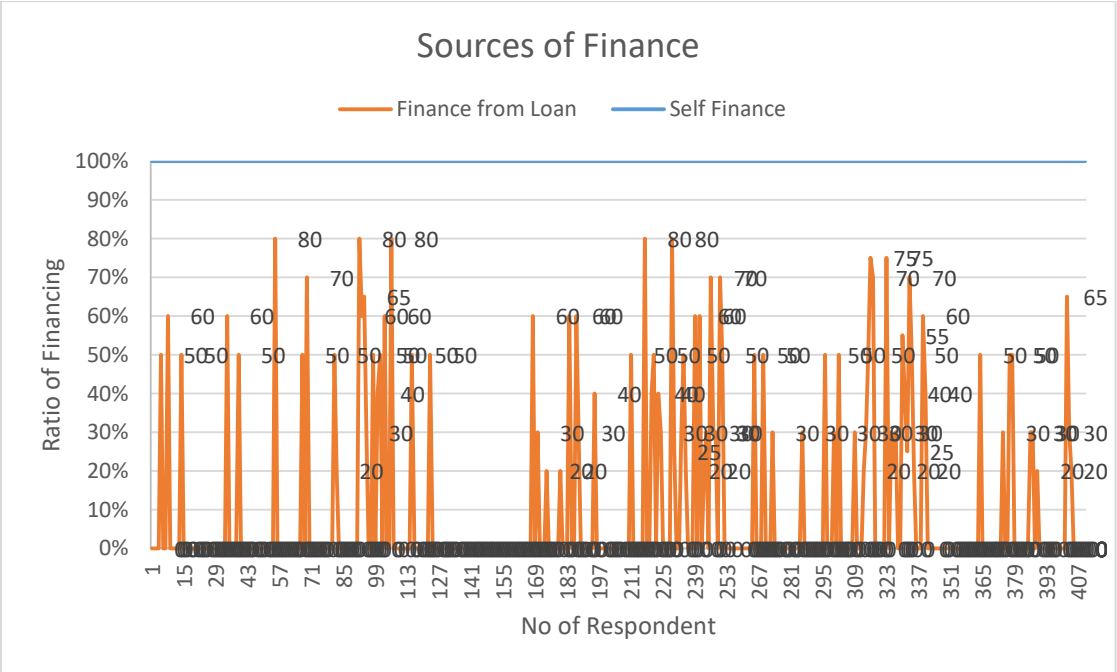
Figure 01: Identified factors for Development Need Assessment of LES of Bangladesh



Financial Factors:

Majority of the light engineering firms are micro, small and medium (Table: 01) in nature that are financed and managed by the owners of the businesses (Hoque, 2014a). Financing turns out to be a major challenge for the domestic investors. This sector is capital intensive, and requires huge investment. But the cost of finance is quite high specially when it comes to bank loans (Table 02), which discourages the investors (Banik & Swarna, 2018). Figure 02 shows the results on the sources of finance where it can be seen that majority of the LE firms are operated through self-financing. Interestingly, 136 (33.1%) out of 410 (100%) respondents are taking loans to smoothen the operation of their businesses.

Figure 02: Sources of finance



Easy access to financial support is essential for attracting new investors and helping expand the businesses. LE business owners always face a problem borrowing money for the expansion and smoothening of operations. On the other hand, the interest rates of the banks are higher, which means it is not affordable for new interested parties. To find out the major barriers to financial support some crucial factors have been identified from the responses which are shown in table 02 by using multiple response frequency tabulation.

Table 02: Barrier Factors to Easy Access to Finance Form Banking Sectors (Frequencies of Multiple Response)

Disadvantages Of Bank Loan Frequencies			
		Responses	Percent of Cases
	Disadvantages of Bank Loan[a]	N Percent	
	A) High Interest Rate	75 39.5%	53.6%
	B) Insufficient Loan Amount	44 23.2%	31.4%
	C) Heavy Collateral	25 13.2%	17.9%
	D) Slow loan sanction	23 12.1%	16.4%
	E) Enormous Documentation	10 5.3%	7.1%
	F) Complex Settlement	5 2.6%	3.6%
	G) Bad customer service and others	8 4.2%	5.7%
Total		190 100.0%	135.7%

a. Dichotomy group tabulated at value 1.

The commercial banks do not consider the LE enterprises bankable as they do not have specialized staff to maintain papers. Due to high business risks of purchasing costly machines the enterprises are not interested in borrowing large amounts from banks for machinery (M. A. Talukder & Jahan, 2016). Another problem is that the owners of the LE industry are not willing to take loans from commercial banks for procuring new machinery due to the lack of machinery installation space (A. Talukder & Jahan, 2017).

Business Operational Barrier:

Based on observation, many operational barriers have been seen in the business environments of LE sector. Based on the candid responses of the LE owners, employees, and supervisors 25 operational barriers were detected. In this regard, 256 valid responses were collected from 410 respondents. These point to problems like high price of raw materials (43), lack of skilled manpower (29), low capital (23), VAT and tax issues (21), load shedding (21), financial problems (15), lack of space (14), COVID-19 (13), unavailability of raw materials (12), problems in collecting (11), high store/workshop rent (8), police harassments (8), product pricing issues (7), selling the remaining goods (6), extortion (6), harassment by government employees (4), trade license issues (3), high competition (2), market dominance of Chinese products (1), high electricity bill (3), decreasing income level (3), loan issues (1), transport problems (1), duplication of projects (1).

The government is not taking into proper consideration the contribution of this sector in employment generation and import substitution. The customs duty on raw materials for LE machines is about 32–35%, while the customs duty on imported LE products is about 1%. The importers of LE products are not subject to Value Added Tax (VAT) as they are not produced here. The local producers pay VAT, so their products become more costly (A. Talukder & Jahan, 2017). According to the study results, key areas requiring intervention are financial factors, operational barriers, business transfers to reasonable places, marketing policies of newly developed products, business communication for business development, and vocational training for self-development and employee development (A. Talukder & Jahan, 2017).

Backward Linkage of the LES:

The light engineering industry has an extensive backward linkage. Most of the raw materials are sourced from ship scrap (Ahmed & Bakht, 2010). According to BEIOA, a renowned association in the light engineering industry, 90% of the required ship scraps originates from the domestic shipbreaking industry (Banik & Swarna, 2018). By providing numerous types of machinery and spare parts as well as repair services, this Light Engineering sector has supported the growth and advancement of many other sectors in Bangladesh (Rahman et al., 2016). LE firm owners do not directly import their required raw materials and equipment, rather they are imported by importing agencies (Ahmed & Bakht, 2010). As a result, backward linkage support creates overpriced production inputs for light engineering firms.

Improvement of Factory Procedures:

Bangladeshi industries are still using manual procedures which result in low quality products in many cases. Moreover, the production capacity is not high when such processes are used. Therefore, the industries are not being able to meet production requirements of the buyers and are staying out of competition in the world market (Banik & Swarna, 2018)**.** In order to develop the LE Sector, the government of Bangladesh has undertaken a plan to establish the 'Light Engineering Cluster Village' near Dhaka. In the 7th Five-Year economic development plan, the government has emphasised on attracting Foreign Direct Investment (FDI) for the LE Sector for greater and easier market access, and for easier transfer of technology (Majumder & Dey, 2020).

Business Area Transfer:

A plan has been undertaken to establish the 'Light Engineering Cluster Village' near Dhaka in order to develop the Light Engineering industry. To facilitate FDI inflow into the Light Engineering sector, the government is also planning to set up Special Economic Zones for investors from Japan, China, India and other countries (Banik & Swarna, 2018). Table 03 shows that majority of the respondent are interested to transfer their businesses to Special Economic Zones. But the LE firm owners of Jessore are not willing to transfer their businesses.

Table 03: Willingness to transfer business activities to Special Economic Zones
District * Shift to industrial park *Cross tabulation

	Shift to **Economic Zones**		Total
District	No	Yes	
Sirajganj	5	25	30
Pabna	8	32	40
Narsingdi	0	20	20
Narayanganj	1	24	25
Naogaon	4	35	39
Kushtia	6	14	20
Kishoreganj	2	26	28
Jessore *(a)*	20	4	24
Gazipur	0	44	44
Dhaka	10	47	57
Chuadanga	0	20	20
Chattogram	5	20	25
Bogra	9	29	38
Cumulative Total	70	340	410

Note: (a) Majority of the owners of Jessore are not interested to transfer their LE businesses.

New Product Development:

Light Engineering products of Bangladesh have no brand image in the national and international market. The low market image reduces confidence among the buyers. Maximum users of LE products treat these as low quality products due to this reason. Due to their main production bases in Dhaka, these products have two informal, and for some local consumers rather hilarious, branding messages like Made in Dholaikhal or Made in Jinjira. The establishment of a brand name is an important factor in ensuring the success of an LE firm (Afraz et al., 2014). It is also reported that BITAC, a government organization established to support engineering enterprises, has become a supplier of light engineering products of about Taka 1 billion per annum. It is again outsourcing the work to third parties (A. Talukder & Jahan, 2017).

Idea of a New Product and Pricing:

The price and quality of the products are reasonable, still there is much to improve. There are challenges in terms of competition with foreign products due to the limited variety and quality that the Bangladeshi LE industry provides (Banik & Swarna, 2018). If the LES fails to provide competitive price, there is a threat of penetration by international products into local market. As a consequence, cutting cost has become crucial for the LE industry of Bangladesh.

Table 04: The Idea of a New Product

Idea of A New Product Frequencies

Idea of A New Product[a]	Responses N	Responses Percent	Percent of Cases
Q1. Develop prototype then search for client	76	15.0%	18.5%
Q2. Disseminate the idea to search clients	46	9.1%	11.2%
Q3. First client gives innovation idea and order then we develop	358	70.6%	87.3%
Q4. Working with new idea is risky	5	1.0%	1.2%
Q5. Never had any new idea	21	4.1%	5.1%
Q6. Others	1	.2%	.2%
Total	507	100.0%	123.7%

a. Dichotomy group tabulated at value 1.

The new product development process is very outdated and traditional. The majority of the LE firms in Bangladesh did not participate in market surveys. Table 04 shows that new product ideas first come from the client when they order. The above table shows that 358 (70.6%) of respondents followed this method. Only 76 (15%) of LE firm owners developed a viable prototype for bringing a new product to market. Other countries do formal market surveys to generate new product ideas.

Marketing Policy of a New Product and Services:

The Bangladesh Engineering Industry Owners' Association (BEIOA) is the main association in the Light Engineering sector with 5,000 SME members who are engaged in the production and marketing of light engineering products (Banik & Swarna, 2018). Deficiency in marketing procedures is one of the major problems for the Light Engineering Industry (Forkan, 2020). Due to lack of marketing skills, timid or complacent mindset and uncertainty over consumer demand, LE firm owners take the safe path of producing on-demand, traditional and low quantity products. (A. Talukder & Jahan, 2017).

Table: 05 Marketing Policy of New Product and Services Frequencies of Multiple Response

Marketing Policy Of New Product And Services Frequencies			
	Responses		Percent
Marketing of New Product and Services[a]	N	Percent	of Cases
Q1: Sent e-mail/ Letter to potential clients	40	11.3%	13.2%
Q2: Online Advertisement	78	22.0%	25.7%
Q3: Advertisement Through Association	30	8.5%	9.9%
Q4: Product Exhibition	45	12.7%	14.9%
Q5: Others (Visiting Card, Leaflet, Banner)	162	45.6%	53.5%
Total	355	100.0%	117.2%

a. Dichotomy group tabulated at value 1.

Both domestic- and international-level promotional activities are necessary for the expansion of this sector. Fairs and other promotional activities at the district level are required for a better domestic market penetration. Table 05 shows that among 355 firm owners, 162 (45.6%) respondents use visiting cards, leaflets, and banners for marketing a new product. On the other hand, only 78 (22%) respondents use online advertising, whereas in other countries a large proportion of firm owners use aggressive online marketing. By using product exhibitions in a national area, 45 (12.7%) respondents sell their new products. Taking part in international trade fairs would be a good way to learn about the demand dynamics in foreign markets and how those markets work (Banik & Swarna, 2018). And also, there would be transnational sharing of technology, knowledge, and other resources, thereby ultimately benefitting the domestic sector.

Information and Communication:

Owing to shortage of institutional education, neither the owners nor their workers have any knowledge about demand and supply predictions. Basically, LE firm owners sell their products on a demand basis. As a result, they have no control over sales. They have no comprehensive idea or planning about marketing procedures for product promotion and rely predominantly on traditional banners, leaflets, and visiting cards. For perspective it is worth adding here that according to, Talukder et. al. (2016) garment manufacturers do not know much about marketing, and yet they have the buying agents do the job. The buying agents collect orders from international brands for garment manufacturers and conduct the other marketing and selling procedures. But, the LE sector has not developed even such market intermediaries (M. A. Talukder & Jahan, 2016).

Sources of Information:

Basically, LE sector owners collect production, pricing and other operational information from different raw material sourcing areas by communicating with their backward linkage partners. Observation shows that they collect only local production information. They do not get any opportunity to gather information from abroad for expanding their businesses.

Barriers to Gathering Information:

Inadequate and inaccurate information are the main barriers in gathering information for production and supply planning. Otherwise, it has been seen that the LE firm owners are not facing any problems, according to their responses. Adequate and accurate information is critical for planned mass production in LE sector in Bangladesh.

Table 06: Barriers to Gathering Information to Collect LE Business Related Multi Response Information

Barriers to Collecting LE Business Information Frequencies			
	Responses		Percent of
Barriers to Collecting LE Business Information [a]	N	Percent	Cases
R1. Inaccurate information	41	9.0%	10.0%
R2. Inadequate information	62	13.6%	15.2%
R3. Costly to get Information	4	.9%	1.0%
R4. Complex Process	8	1.8%	2.0%
R6. No Difficulties	341	74.8%	83.4%
Total	456	100.0%	111.5%

a. Dichotomy group tabulated at value 1.

Business Development Intention:

This sector has been consistently growing over the years, and one of the major contributing factors to this is the growing domestic market demand. Despite various challenges and difficulties, domestic demand has helped it grow and sustain. Entrepreneurs' lack of interest in the latest technologies is a worrying issue. They've become accustomed to the existing state of technology and have become complacent. Because they don't want to improve product quality and operational efficiency, it appears that they don't require new technologies (A. Talukder & Jahan, 2017). Most of the light engineering entrepreneurs in Dhaka provide repairing services to the industries and private vehicle owners. Only a few entrepreneurs produce and stock spare parts as well as complete machinery for future sales. In Annexure 05, it is seen that only 166 (40.4%) out of 410 owners are interested to expand their businesses. Recently, a few entrepreneurs started trying actively to produce high quality spare parts and machineries by using computerized and numerically controlled (CNC) lathe machines. They are also using advanced hiring procedures and bringing in designers mainly from India to operate sophisticated machines (Mottaleb & Sonobe, 2012).

Vocational Training for Skill Development:

The world is changing constantly building on advanced technology. As a result, training on advanced expertise is essential for the development of the workers and supervisors, and consequently to increase the efficiency of the production activities. On the other hand, owners and managers need to develop managerial efficiency and skills on product cost management, effective pricing as well as proper human resource management. Most of the light engineering workshops are micro and small, self-financed and employing about 05 (five) persons. These are managed by the owners (Afraz et al., 2014). Such entrepreneurial ability is the function of general and specific knowledge, where general knowledge comes from formal education, and specific knowledge may come from prior related experience, and also from learning by doing (Mottaleb & Sonobe, 2012). BRAC, BUET, BITAC, BLET, TTC, SEIP, Polytechnic Institute, BSCIC and Local Trading Corporation (table 7) help to provide different training for their skill development. Learning by doing and in-house learnings are some of the popular learning procedures for skills development in LE sectors. Annexure 06 shows that only 182 (44%) owners have taken training from different formal and informal training.

Table 07: Training at Different Institutes

Training Institute Frequencies

	Training Institute[a]	Responses N	Responses Percent	Percent of Cases
	1. BUET	17	9.4%	9.4%
	2. BRAC	33	18.2%	18.2%
	3. Learning by Doing	17	9.4%	9.4%
	4. Inter-firm Training	33	18.2%	18.2%
	5. Others (SEIP, BITAC, Local & Owners Association, TTC,BLET, Polytechnic, BSCIC, Local Training Organization)	81	44.8%	44.8%
Total		181	100.0%	100.0%

a. Dichotomy group tabulated at value 1.

It has been seen that owners in the LE sector are not much interested in training their employees for different reasons. Responses of the employees are depicted in Table 8, where they identify some intrinsic reasons for the indifference to taking formal training. Generally, the employees do not get a chance to work through different business operational problems, and they think that the training is not necessary for their smooth work. They even argued that they would not have learned anything new from formal or institutional training and that such trainings would not be fruitful for them.

Table 08: Reasons for Indifference Towards Training Among Employees

Indifference Towards Training Frequencies			
	Responses		Percent of Cases
Indifference to Training [a]	N	Percent	
A1 Don't get the chance	56	30.1%	30.1%
A2 Don't learn anything more	6	3.2%	3.2%
A3 Business operational and salary problem	9	4.8%	4.8%
A4 No time for training	2	1.1%	1.1%
A5 It is not necessary	16	8.6%	8.6%
A6 Not interested	6	3.2%	3.2%
A7 No Comments	91	48.9%	48.9%
Total	186	100.0%	100.0%

a. Dichotomy group tabulated at value 1.

BSCIC has long been neglecting LE sector. Despite having focus on industrial technology BITAC has narrowed down its role to training and a limited technical service. BEIOA, as a business association, has not been as strong as other business associations of the country for various reasons (A. Talukder & Jahan, 2017).

6. CONCLUSION AND POLICY IMPLICATION:

Despite high interest rates, commercial banks always feel discouraged from providing a certain amount of loan for capital investment in LE sector machinery. As a result, quality products are not possible to produce to meet the challenges. A collective loan can be the best way to buy new machinery for product development. All owners can ask for a collective loan from a commercial bank and, jointly they can buy a machine for common production to improve their production quality and efficiency.

The high price of raw materials is one of the significant operational barriers in the LE industry. Different researchers have identified different reasons behind this high price of raw materials. VAT and tax are responsible for the rise in production costs. As a consequence, the imported product price is comparatively lower than the production price of LE products. On the other hand, the interest rate of bank loans is also responsible for the price hike of the LE product.

Research observation shows that the transfer of a business area to a special economic zone is essential for the favorable business ecosystem. It can create a common facility area for the LE product market. If the area is in a cluster, the producer can get the opportunity of easy access to information and communication, which will strengthen the newly developed product development opportunity. An international trade fair on a regular basis would be a great opportunity for the LE sector of Bangladeshi owners.

Even though Bangladesh's LE industry is growing, most of its owners don't want to grow their businesses because of a number of problems. It is therefore high time to take the necessary steps to generate the national income for the economic development of Bangladesh.

Peer pressure is one of the major problems in training the workers in the LE sectors. According to the respondent, sometimes special training creates a waste of time. They could not learn anything more from the training. Learning by doing and inter firm learning are popular for their learning. As a result, it can be concluded that the training organization should identify the training needs assessment for initiating fruitful training that must contribute to the effective production and increase the efficiency of the workers in LE sectors.

REFERENCES:

Abdin, M. D. (2015). Tapping potential of light engineering clusters. *The Financial Express, August*, *29*.

Afraz, N., Hussain, S. T., & Khan, U. (2014). Barriers to the growth of small firms in Pakistan: A qualitative assessment of selected light engineering industries. *The Lahore Journal of Economics*, *19*, 135.

Ahmad, F. U., & Jahan, S. M. (2017). Demand Dynamics of Light Engineering Sector of Bangladesh and Recommendations for Local Enterprises. *IOSR Journal of Business and Management*, *19*(01), 01–07. https://doi.org/10.9790/487X-1901060107

Ahmed, N., & Bakht, Z. (n.d.). *Light Engineering Industry in Bangladesh: A Case Study*. 8.

Ahmed, N., & Bakht, Z. (2010). Light engineering industry in Bangladesh: A case study. *Institute of Development Studies*, 1–8.

Akhtaruzzaman, M., Sarker, M. M. I., & Rahman, Md. M. (2020). Pace and Prospects of Light Engineering Sector in the Economic Development of Bangladesh. In M. K. Barai (Ed.), *Bangladesh's Economic and Social Progress* (pp. 299–316). Springer Singapore. https://doi.org/10.1007/978-981-15-1683-2_10

Banik, T. C., & Swarna, N. R. (2018). A study on sector-based need assessment of light engineering sector of Bangladesh. *American Journal of Economics*, *8*(6), 244–253.

Forkan, G. M. (2020). Enhancing Marketing Capabilities of Light Engineering Industry through Creation of Clusters. *Journal of Knowledge Globalization*, *12*(1).

Hoque, I. (2014a). *UPGRADING STATUS OF LIGHT ENGINEERING CLUSTERS IN BANGLADESH: AN ANALYSIS*. *17*, 17.

Islam, A., Lee, W.-S., Triyana, M., & Xia, X. (2022). *Occupational Health and Safety: The Role of Information and Financial Linkage*. 45.

Islam, A., & Ruthbah, U. (2018). *Workplace Health and Safety, and Business Training:* 17.

Islam, Md. R. (2021). Sustainable Entrepreneurship in the Light Engineering Industries: A Developing Country Perspective. *Journal of Nepalese Business Studies*, *14*(1), 1–17. https://doi.org/10.3126/jnbs.v14i1.41472

Kayemuddin, M., & Kayum, S. (2013). Problems and prospects of automobile workshops in Bangladesh. *Journal of African Studies and Development*, *5*(6), 157–162.

Khan, A. (2014). *The SME Missing Middle Problem in Developing Countries and its Link to Lack of Financing: The Case of Bangladesh*.

Khan, K. S. (2011). *Role of light Engineering Sector in Poverty Reduction amongst its Employees. A Case Study of Gujranwala, Gujrat and Sialkot Districts. 3*, 16.

Majumder, S., & Dey, S. (2020). *Light Engineering Industry Sector in Bangladesh: Challenges and Prospects*. *48*(01), 12.

Mottaleb, K. A., & Sonobe, T. (2012). The role of human capital in firm performance: Evidence from the engineering industry in Bangladesh. *International Journal of Entrepreneurship and Innovation Management*, *16*(3/4), 245. https://doi.org/10.1504/IJEIM.2012.051958

Rahman, R., Hoque, A., & Alam, S. (2016). *Analyzing Competitive Factors Affecting Customers' Purchase Decision "A Study on Small and Medium Light Engineering Industry in Bangladesh." 09*(01), 17.

Talukder, A., & Jahan, S. M. (2017). *Competitiveness and Growth Hindrances of Light Engineering Industry of Bangladesh: A Study on Micro, Small and Medium-Sized Enterprise (MSME) Owners*. 12.

Talukder, M. A., & Jahan, S. M. (2016). Light engineering business ecosystem in Bangladesh: A study on institutional preparedness. *IOSR Journal of Business and Management (IOSR-JBM)*, *18*(12), 16–26.

Zhang, H., Wang, Z., Yang, H., Gao, H., & Lan, H. (2017). Research and Discussion on Network Instruction System of Light Chemical Equipment Course. *Proceedings of the 2017 7th International Conference on Education, Management, Computer and Society (EMCS 2017)*. 2017 7th International Conference on Education, Management, Computer and Society (EMCS 2017), Shenyang, China. https://doi.org/10.2991/emcs-17.2017.125

Annexure 01

Types of business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Partnership	21	5.1	5.1	5.1
	Private limited	1	.2	.2	5.4
	Sole proprietorship	388	94.6	94.6	100.0
	Total	410	100.0	100.0	

Annexure 02

Respondent status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Emplo	11	2.7	2.7	2.7
	Manag	31	7.6	7.6	10.2
	Other	9	2.2	2.2	12.4
	Owner	358	87.3	87.3	99.8
	Super	1	.2	.2	100.0
	Total	410	100.0	100.0	

Annexure 03

Case Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
$Loan From Financial Institutions[a]	136	33.1%	275	66.9%	411	100.0%

a. Dichotomy group tabulated at value 1.

Annexure 04

$Loan From Financial Institutions Frequencies

		Responses		Percent of Cases
		N	Percent	
Loan from Financial Institutions[a]	A) Bank	99	68.3%	72.8%
	B) Non-Bank Financial Institution	20	13.8%	14.7%
	C) Local Association	5	3.4%	3.7%
	D) SME Foundation	4	2.8%	2.9%
	F) Informal Loan	17	11.7%	12.5%
Total		145	100.0%	106.6%

a. Dichotomy group tabulated at value 1.

Annexure 05

Willingness to expand the LE business

		Frequency	Percent	Cumulative Percent
Valid	Yes	166	40.4	40.5
	No	84	20.4	61.0
	No Comments	160	38.9	100.0
	Total	410	99.8	
Missing	System	1	.2	
Total		411	100.0	

Annexure 06

Self-Development Training of LE Owners

Case Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
D11_A*$Training	181	44.0%	230	56.0%	411	100.0%

The Guidelines for the Authors are as following;

1. All the papers must focus(s) on contemporary issues in the different fields of management, human resource development, socio-economic, etc.
2. The manuscript of the paper should be based on original research and demonstrate the author's own analysis, thought, and judgment.
3. The manuscript must be typed on one side of A4 size paper in double space, font type-Times New Roman, font size 12, and should not exceed 30 pages.
4. The title of the paper must be typed in capital letter, font size 12.
5. **Other guidelines for writing papers:** All potential contributors must follow the particular format in writing the manuscript in terms of writing heads and subheads; furnishing figures and tables; placing citations; and reference etc. Authors are requested to keep the following matters in mind (if applicable):

    a. **TITLE:** The title page of the paper should be provided on a separate page. Introduction of the author(s) should contain name, position, department, institution/organization, country, email address, and contract number (s), and submitted to The Senior Editor, Management Development, Bangladesh Institute of Management, 4, Sobhanbag, Dhaka-1207, email-ukdatta99@gmail.com

    b. **ABSTRACT:** (250 words) An abstract of a maximum of 250 words should be given at the beginning of the paper along with the keywords. The abstract should cover the purpose of conducting the study, the ways to conduct the study and the findings of the study along with the significance of the findings and expected contributions to the concerned areas.

    c. **INTRODUCTION:** (500-750 words) The introduction should have information based general discussion on the topic, state affairs related to the field of the study, and significance and scope of the study.

d. **REVIEW OF LITERATURE:** (2000-3000 words) Literature reviews should state national and international past studies.

e. **METHODOLOGY:** (500-1000 words) The methodology should go with the following contents:

- Problem identification
- Nature of the research
- Research questions (in case of conclusive studies)
- Hypothesis development (in case of conclusive studies)
- Population, sample frame, sampling technique, sample size
- Types of data used and sources of data
- Questionnaire development and data collection
- Data analysis technique and statistical tools used
- Limitations

f. **OBJECTIVE:** Objectives may include general/broad objective and relevant specific objectives.

g. **RESULTS /FINDINGS** (500-1000 Words)

i. Tables should be placed at the end of the article under the head "Appendix"

ii. Statistical analysis and figures can be placed inside the main body of the article.

iii. Use numbers and avoid bullets in the text.

h. **DISCUSSION/RECOMMENDATION** : (1500-2500 words) The discussion/recommendation must be focused on the study, overview of the significant of the findings.

i. **CONCLUSION:** The conclusion should cover conclusive statement and further scope of the research.

j. **REFERENCES:** The references should also be given in a defined structure. The bibliographical citation should indicate: author's last name, first and middle name initial, year of publication, "title of the paper", name of the journal (in italics), volume, number, month and page number (s) (for one page, say page number 17, it will be p.17 and for more than one page, say pages 17 to 19, it will be pp. 17-19). The bibliography will be as follows:

i. For a paper : (Harvard Style)

Datta, U.K., 2016. Political Services Marketing for Peaceful World. Delhi business Review, 17(1). p. 15-33.

Barksdale, H.C., and Darden, B., 1971. Marketers' attitudes toward the marketing concept. *The Journal of Marketing*, 30(2), pp. 29-36.

Vazquez, R., Alvarez, L.I. and Leticia Santos, M., 2002. Market orientation and social services in private non-profit organizations. European Journal of Marketing, 36(9/10), pp. 1022-1046

ii. For a Text book:

Boulding, E., 1990. *Building a global civic culture: Education for an interdependent world, 5th edition*, Syracuse University Press.

Kotler, p. and Keller, K.L. 2009. Marketing Management, 13th edition, Prentice Hall, NJ.

Saunders, M., Lewis, P., and Thornhill, A. 2003. Research Methods for Business Students, 3rd edition, Harlow, Pearson Education.

iii. For internet/newspaper materials:

OIC, 2009, Retrieved on August 01, 2003 from http://www.oic-oci.org/

The Daily Star, 2013. BTRC won't Allow Wimax Firms to Give Voice Services, November 14, 2013, p.7.

iv. Other cases, the references in the text for one author would appear as: (Datta, 2014), for two authors as (Datta & Paul, 2013), and in case of three or more authors, the reference in the text would appear as (Ahmed et al., 2014)

6. Two copies of the manuscript with title page, and a cover letter should be submitted to; The Editor, Management Development, Bangladesh Institute of Management, 4, Sobhanbag, Dhaka-1207, Room no. 306, Bangladesh, Hence, the authors are requested not to write their names on the main document (manuscript) for review.

7. **The submitted paper must be in English, and grammarly error free.** Even if all the above-mentioned requirements are fulfilled, errors such as typing or grammatical, lapse of number of page, figure or table, etc. may lead to disqualification for publication of a paper (if the author is not sure to become free of such errors, it is advised to get the paper corrected by an expert before it is sent).

8. **It might be useful to the author(s) to look at the criteria (as enclosed) on the basis of which the papers are evaluated (reviewed) for publication.**

Send Your Paper To

(Mohammad Sayeedur Rahman),
Management Counselor / Senior Editor
Management Development: A Quarterly Published Journal of
Bangladesh Institute of Management
Room # 210, Administrative Building, 2 floor
Cell: 01819 231219, Phone: 8155116, Ext. 234,
email: sayeed19@gmail.com

BANGLADESH INSTITUTE OF MANAGEMENT
4 Sobhanbag, Mirpur Road, Dhaka - 1207
Chandgaon R/A, Bhaddarhat, Chittagong-4212. boyra, Khulna-9000
www.bim.org.bd
www.bim.gov.bd

Printed in June 2022