

THE EFFICIENCY OF WORKING CAPITAL MANAGEMENT IN THE ENERGY SECTORS IN BANGLADESH: AN EMPIRICAL STUDY ON SELECTED GAS DISTRIBUTION COMPANIES

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Abstract: Management of Current assets and Current liabilities is involved in the working capital management of any business organisation. The financial decision regarding the current assets and their utilisation plays a crucial role in the solvency, liquidity as well as the profitability of the company. The study is aimed to determine the management of working capital of the particular gas distribution companies in Bangladesh which are selected on purposive sampling and analysis are conducted on the secondary data collected from annual reports covering a period of 5 years from the financial year 2015 to 2020. The analysis techniques of mean, average growth rate, standard deviation, coefficient of variation, financial ratio analysis, and Motaal's Comprehensive Test of Liquidity model are used. It is found that the working capital management of the gas distribution companies is not at a satisfying level especially for the state-owned companies, although a newborn company (KGDCL) is in a better position compared with the older one. This study focuses on some techniques which may be followed for the management and utilisation of current assets and liabilities in enhancing the profitability of the companies to maintain optimum liquidity and solvency.

Keywords: Working capital, Liquidity, Gas distribution, Profitability.

1. Introduction

Working Capital mainly represents the current assets of a firm which is the portion of financial resources of the business that changes from one type of resources to another during the day-to-day execution of business (Gitman, 2002). Working capital management is concerned with the most effective use and choice of sources and the determination of the appropriate level of current assets and liabilities (Chowdhury and Amin, 2007). Huge current assets represent the inefficiency of the management that is not able to invest in the profitable sectors which leads to low profitability. Low current assets represent the creditor's anxiousness not to pay the debt on due time. Working capital plays as like blood of an organisation to carry on their day-to-day activities. The effective usage of assets leads companies to acquire profits because of the positive relationship that exists between working capital management and profitability (Haq et al., 2011; Agha, 2014; Abbasali, & Milad, 2012).

2. Research Problem

The energy sectors in Bangladesh are divided into power and gas sectors while the Bangladesh power sectors are mostly dependent upon oil, coal, and gas-based. For this reason, the gas sector is an alternative source of energy. Most of the power stations, fertilizer industries, commercial sectors, brickfields, domestic households, etc. depend on gas supply which plays a multi-farious role in the economic development of Bangladesh. In 2018-2019 the Gas supply sector contributed Tk. 52548 million in the GDP of the national economy which was 0.22% of total gross domestic product (GDP) and the growth rate was 1.13% (Bangladesh Bureau of Statistics, 2019). Six gas distribution companies in the government sectors in Bangladesh cover the distribution of locally produced gas and imported LNG (Liquefied Natural Gas) across the country (petrobangla, 2020). Titas Gas Transmission and Distribution Company Limited distribute gas in the middle parts of Bangladesh i.e. greater Dhaka and Mymensingh division, while Jalalabad Gas Transmission and Distribution System Ltd distributes gas in the North-east part of Bangladesh i.e. Greater Sylhet Division. Pashchimanchal Gas Company Ltd distributes in the northwest zone, Sundarban Gas Company Ltd distributes gas in South Zone, and Karnaphuli Gas Distribution Company Ltd (KGDCL) distributes gas in the south-east zone i.e. greater Chattagram and Bakharabad Gas Distribution company distributes gas in the east part of Bangladesh i.e. greater Comilla.

The success and profitability of the companies contribute huge internal income to the government in the form of corporate tax, CD/VAT, Dividends, and Debt Service Liability (DSL) for the economic development of the country. In recent years, the rate of profit is reduced which is a red sign for these companies. Most of the companies in the gas sectors in Bangladesh hold a huge amount of liquid assets compared to fixed assets and total assets. The efficient use of working capital of these companies highly influences profitability which will help the government to generate internal sources of income through the efficient use of natural gas in the country as well as different customers of gas. Thus, this study is conducted to critically evaluate and compare the structure of working capital, and the liquidity position of the government-owned selected gas distribution companies in Bangladesh. Suggestions for improvement of working capital management, and maintaining an optimum level of current assets, and liabilities to enhance profitability are provided.

3. Literature Review

Raheman et al. (2010) studied 204 manufacturing firms in Pakistan to explore the impact of working capital management on the performance of a firm based on 10 years of data starting from 1998. The dependent variable is determined as follows: the average age of inventory, average payment period, average collection period, current ratio (CR), current liabilities to total assets ratio (CLTAR), gross working capital turnover ratio (GWCTR), current assets to total assets ratio (CATAR), sales growth (SG), size of the firm as the natural logarithm of sales (LOS) and debt ratio as independent variables and Net Operating Profitability (NOP). It is found that the Pakistani firms normally follow the conservative policy for management of working capital indicating that they need effective management and proper financing.

Haq et al. (2011) conducted a study on 14 cement companies in Pakistan in which six-year secondary data were collected and analysed by using financial ratios such as current ratios, current assets to total assets, inventory turnover, etc. as a predictor of return on investment (ROI). It is concluded that there is a moderate relationship between financial performance and working capital management. Patrick and Mweta (2018) state that efficient working capital management determines the success or the failure of the business in the short term or long term because it determines the liquidity and profitability balance of a business. The success of any business depends on how financial managers, in this case, the entrepreneurs effectively manage working capital components which include mainly cash, debtors, creditors, and inventories. A business needs to maintain a balance between profitability, and liquidity while carrying out its day-to-day operations.

Bagul (2014) found that working capital is required for every industry and unit for their day-to-day operation. The company helps to meet their financial need by financing them so that they can run their business unit smoothly without any scarcity of working capital. Based on the secondary data of listed firms on the Karachi Stock Exchange for the period of 2001-2006, Muhammad et al. (2012) empirically stated that effective working capital management has a direct positive impact on the profitability of the business. The population of the study is the Pakistan textile industry and the findings of the study demonstrate that there is a strong positive relationship between profitability and current assets but a negative relationship in the case of accounts payable. Therefore, an increase in cash, inventory, and credit sales will increase the profitability of the firm. Rahman (2011) conducted a study on working capital management and profitability of the textiles industry and observed that the profitability and working capital management position of the textiles industry are not satisfactory. The study reveals that a correlation exists between working capital management and profitability. The study also finds out that working capital management has a positive impact on profitability. The reviews show that studies have been conducted on working capital management systems of diverse sectors of industries, companies, and manufacturing firms in different countries. However, research works on the gas distribution companies in Bangladesh, where huge amounts of current assets are engaged in their operations are limited.

3. Methodology

Based on a purposively random sampling method four gas distribution companies are selected from among the six governments' gas distribution Companies that exist in Bangladesh (www.petrobangla.org.bd). Titas Gas Transmission and Distribution Company Ltd., Jalalabad Gas Transmission and Distribution System Limited, Pashchimanchal Gas Company Ltd., and Karnaphuli Gas Distribution Company Ltd. are selected for the study and they consist of the old, and largest as well as the new-born gas distribution companies. The study covers five financial years from 2015-2020 and the data was collected from the published annual report and audited financial statements of the companies. Different statistical tools comprising average, standard deviation, coefficient of variation (C.V), average growth rate (AGR), and Motaal's comprehensive test of liquidity model are used to analyse and interpret the data.

3.1 Data Analysis

Titas Gas Transmission and Distribution Company (TGTDC)

Titas Gas Transmission and Distribution Company Limited (TGTDC) is the first and largest gas distribution company in Bangladesh. It was established on November 20, 1964, under the Company's Act 1913 following a significant gas discovery at Titus Gas Field in 1962 and a commercial operation started in 1968 to commission to Siddirganj Thermal Power Station. In the beginning, 90% of its shares belong to the Pakistan Government, and Pakistan Shell Oil Company owns the rest. After the independence of Bangladesh in 1971, the company started its journey as a company of Petrobangla and purchased a share of Shell Oil Company in 1975. After four decades of operation as a fully government-owned company, 25% of its share was offloaded on July 2, 2008, under the direct listing Method (DLM) of Securities in Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE) in 2008. The position of working capital and liquidity are as follows:

Table 1. Statement of Working capital and Liquidity position of TGTDC

Year	Inventories	AR	Cash & Bank	CA	TA	CL	NWC	Current Ratios	Quick Ratios	CA to TA	Cash to TA	AR to TA	Figure in percentage			
													Inventories to TA	Cash to CA	AR to CA	Inventor. to CA
	Figure in crore TK.							Figure in percentage								
2015-16	168	3223	1096	5924	12427	4887	1037	1.21	1.18	0.48	0.09	0.26	0.01	0.19	0.54	0.03
2016-17	136	3883	1279	5573	12095	4188	1385	1.33	1.30	0.46	0.11	0.32	0.01	0.23	0.70	0.02
2017-18	161	3079	693	7737	15008	6405	1332	1.21	1.18	0.52	0.05	0.21	0.01	0.09	0.40	0.02
2018-19	200	4172	1291	9309	16442	7118	2191	1.31	1.28	0.57	0.08	0.25	0.01	0.14	0.45	0.02
2019-20	185	5867	1990	12186	18060	8287	3899	1.47	1.45	0.67	0.11	0.32	0.01	0.16	0.48	0.02
AVG	170	4045	1270	8146	14806	6177	1969	1.31	1.28	0.54	0.09	0.27	0.01	0.16	0.51	0.02
STD	24	1115	469	2711	2565	1659	1161	0.11	0.11	0.09	0.03	0.05	0.00	0.05	0.12	0.00
CV	14%	28%	37%	33%	17%	27%	59%	8%	9%	16%	30%	18%	11%	32%	22%	22%
MAX	200	5867	1990	12186	18060	8287	3899	1.47	1.45	0.67	0.11	0.32	0.01	0.23	0.70	0.03
MINI	136	3079	693	5573	12095	4188	1037	1.21	1.18	0.46	0.05	0.21	0.01	0.09	0.40	0.02
AGR	0.10	0.82	0.82	1.06	0.45	0.70	2.76	0.21	0.23	0.42	0.25	0.25	-24	-12	-11	-46

Sources: Annual & Audited report of the Companies from 2015-2020, Note: Data Compiled by the researchers
AR= Account Receivable, CA= Current Assets, TA= Total Assets, CL=Current Liabilities, NWC= Net Working Capital

Table 1 indicates the working capital and liquidity position of TGTDC. The average total assets, current assets, current liabilities, and networking capital are BDT. 14806 crores, BDT. 8146 crores, BDT. 6177 crores and BDT. 1969 crores respectively, whereas the coefficient of variations (CV) is 17%, 33%, 27%, and 59% respectively. The variations of total assets, current assets, and current liabilities are at a favourable level but net working capital is unfavourable (59%) which indicates greater variability. Average current ratios and quick ratios of TGTDC are 1.31:1, and 1.28 which imply that the position of current ratios are below standard but the quick ratios are above standard which shows that excess liquid

assets are held in Titas Gas although CV indicates low variability, and average growth rate provides a positive growth.

When current assets are compared to total assets, it can be implied that an average of 54 % are current assets, and the growth rate increase from year to year which indicates an inefficient use of current assets. Management should consider the investment policy for proper utilisation of assets (Tufail, 2012). All other ratios like-Cash to TAs, A/Rs to TAs, Inventories to TAs, Cash to CAs, A/Rs to CAs, and Inventories to CAs are significantly raised and fallen in asset structure implying the lack of inconsistency of working capital management.

Jalalabad Gas Transmission and Distribution System Limited (JGTDSL)

The commercial use of natural gas began with the supply of gas to the Chhatak Cement Factory in 1960 and the Fenchuganj Fertilizer Factory in 1961. Subsequently, with the completion of the Habiganj Tea Valley Project in 1977, the activities of the Sylhet Town Gas Supply Project were initiated to meet the demand for gas in Sylhet town and its adjacent areas. Following the merger of the two projects, the gas connection in the Sylhet town was started formally in 1978 with the inauguration of the supply of gas at the premises of the Mazar of Hazrat Shahjalal (R). The projects helped the formation of Jalalabad Gas Transmission and Distribution System Limited on 1 December 1986 with an authorised capital of Tk.150 crores as per the Companies Act. The position of working capital and liquidity positions are demonstrated in Table 2.

Table 2 exhibits the working capital and liquidity position of Jalalabad Gas Transmission and Distribution System Ltd. The average total assets, current assets, current liabilities, and networking capital are BDT. 2438 crores, BDT. 1012 crores, BDT. 1055 crores and BDT. -43 crores respectively whereas co-efficient of variation are 17%, 26%, 15% and -379% respectively. The variations of total assets, current assets, and current liabilities are at a favourable level but net working capital is unfavourable (-379%) which indicates a greater fluctuation of net working capital. The networking capital of the company is negative which represents a deficit working capital in the financial year 2015-2018 and the position is improving over the last two years of the study.

The average current ratios and quick ratios of JGTDSL are 0.95 and 0.92 which implies that the positions of current ratios as well as the quick ratios are below the standard ratio which shows adequate liquid assets do not hold the company although CV indicates low variability and average growth rate provide positive growth. Comparing current assets to total assets designates that an average of 41% are current assets and the growth rate increases year to year which indicates inefficient use of current assets. However, all other ratios such as cash to TAs, A/Rs to TAs, Inventories to TAs, cash to CAs, A/Rs to CAs, and Inventories to CAs are significantly raised and fallen in asset structure implying the lack of inconsistency of working capital management.

Table 2. Statement of Working capital and Liquidity position of JGTDSL

Year	Inventories	AR	Cash & Bank	CA	TA	CL	NWC	Current Ratios	Quick Ratios	CA to TA	Cash to TA	AR to TA	Inventories to TA	Cash to CA	AR to CA	Inventor. to CA
Figure in crore TK.								Figure in percentage								
2015-16	28	281	72	727	1820	791	-63	0.92	0.88	0.40	0.04	0.15	0.02	0.10	0.39	0.04
2016-17	31	341	40	813	2246	1092	-279	0.74	0.72	0.36	0.02	0.15	0.01	0.05	0.42	0.04
2017-18	30	405	43	1008	2612	1081	-73	0.93	0.91	0.39	0.02	0.16	0.01	0.04	0.40	0.03
2018-19	29	427	58	1110	2745	1086	24	1.02	1.00	0.40	0.02	0.16	0.01	0.05	0.38	0.03
2019-20	36	566	92	1400	2768	1226	173	1.14	1.11	0.51	0.03	0.20	0.01	0.07	0.40	0.03
AVG	31	404	61	1012	2438	1055	(43)	0.95	0.92	0.41	0.03	0.16	0.01	0.06	0.40	0.03
STD	3	107	22	265	404	160	164	0.15	0.15	0.06	0.01	0.02	0.00	0.02	0.01	0.01
CV	10%	27%	35%	26%	17%	15%	-379%	15%	16%	13%	40%	14%	16%	36%	4%	20%
MAX	36	566	92	1400	2768	1226	173	1.14	1.11	0.51	0.04	0.20	0.02	0.10	0.42	0.04
MINI	28	281	40	728	1820	791	(279)	0.72	0.72	0.36	0.02	0.15	0.01	0.04	0.38	0.03
AGR	.27	1.02	.28	0.92	0.52	0.55	-3.76	.24	.26	0.26	-0.16	0.33	-0.17	-0.34	0.05	-0.34

Sources: Annual & Audited report of the Companies from 2015-2020, Note: Data Compiled by the researchers

AR= Account Receivable, CA= Current Assets, TA= Total Assets, CL=Current Liabilities, NWC= Net Working Capital

Pashchimanchal Gas Company Ltd (PGCL)

Pashchimanchal Gas Company Limited started its journey on 29 November 1999 for supplying natural gas to the western region of the country. The main objective of the company was to play an important role in establishing gas-based industries in the northwest zone consisting of Sirajganj, Baghabari, Bera, Santhia, Shahjadpur, Pabna, Ishwardi, Bogra, Rajshahi, Rangpur, Nilphamari, Pirganj of the country. The position of working capital and liquidity positions are shown in Table 3.

Table 3 shows the working capital and liquidity position of Paschimanchal Gas Company Ltd. The average total assets, current assets, current liabilities, and networking capital are BDT. 703 cores, BDT. 277 cores, BDT. 273 cores and BDT. 4 cores respectively whereas the coefficient of variation is 18%, 34%, 18%, and 1327% respectively. The variations of total assets, current assets, and current liabilities are at a satisfactory level but net working capital is unfavourable (1327%) which indicates huge variability. The networking capitals of the company are deficit in the years 2015-2018 and it was gradually increasing in the succeeding years.

Table 3. Statement of Working capital and Liquidity position of PGCL

Year	Inventories	AR	Cash & Bank	CA	TA	CL	NWC	Current Ratios	Quick Ratios	CA to TA	Cash to TA	AR to TA	Inventories to TA	Cash to CA	AR to CA	Inventor. to CA
Figure in crore TK.								Figure in percentage								
2015-16	21	87	81	212	572	224	-13	0.94	0.85	0.37	0.14	0.15	0.04	0.38	0.41	0.10
2016-17	19	93	93	228	648	286	-58	0.80	0.73	0.35	0.14	0.14	0.03	0.41	0.41	0.08
2017-18	21	72	64	191	622	219	-28	0.87	0.78	0.31	0.10	0.12	0.03	0.34	0.38	0.11
2018-19	34	159	100	348	795	319	29	1.09	0.98	0.44	0.13	0.20	0.04	0.29	0.46	0.10
2019-20	29	191	131	408	877	316	91	1.29	1.20	0.47	0.15	0.22	0.03	0.32	0.47	0.07
AVG	25	120	94	277	703	273	4	1.00	0.91	0.39	0.13	0.17	0.04	0.35	0.42	0.09
STD	6	52	25	95	128	49	58	0.20	0.19	0.06	0.02	0.04	0.01	0.05	0.04	0.01
CV	26%	43%	27%	34%	18%	18%	1327%	20%	21%	17%	14%	25%	14%	14%	9%	16%
MAX	34	191	131	408	877	319	91	1.29	1.20	0.47	0.15	0.22	0.04	0.41	0.47	0.11
MINI	19	72	64	191	572	219	(58)	0.80	0.73	0.31	0.10	0.12	0.03	0.29	0.38	0.07
AGR	0.39	1.20	0.62	0.93	0.53	0.41	-8.26	0.37	0.41	0.26	0.06	0.44	-0.09	-0.16	0.14	-0.28

Sources: Annual & Audited report of the Companies from 2015-2020,

Note: Data Compiled by the researchers

AR= Account Receivable, CA= Current Assets, TA= Total Assets, CL=Current Liabilities, NWC= Net Working Capital

Average current ratios and quick ratios of PGCL are 1.00, and 0.91 which implies that the position of current ratios, as well as quick ratios, are below the standard which shows fewer liquid assets are held in the company although quick ratios are better than the current ratios. The CV indicates low variability and the average growth rate provides a positive growth. Comparing current assets to total assets designate that an average of 39 % are current assets and the growth rate increases year to year which indicates an efficient use of current assets. However, all other ratios such as cash to TAs, A/Rs to TAs, inventories to TAs, cash to CAs, A/Rs to CAs, and inventories to CAs are significantly rising and falling across the study period. These rises and falls in asset structure imply the lack of inconsistency in working capital management.

Karnaphuli Gas Distribution Company Ltd (KGDCL)

Karnaphuli Gas Distribution Company Limited was established in February 2010 by the Government of Bangladesh as a Joint Stock company for the distribution of gas in the greater Chattogram, and Chattogram hill tracts. The position of working capital and liquidity positions are as follows:

Table 4. Statement of Working capital and Liquidity position of KGDCL

Year	Inventories	AR	Cash & Bank	CA	TA	CL	NWC	Current Ratios	Quick Ratios	CA to TA	Cash to TA	AR to TA	Inventories to TA	Cash to CA	AR to CA	Inventor. to CA	
	Figure in crore TK.							Figure in percentage									
2015-16	41	313	339	863	2347	519	344	1.66	1.58	0.37	0.14	0.13	0.02	0.39	0.36	0.05	
2016-17	34	430	335	1268	2860	483	785	2.62	2.55	0.44	0.12	0.15	0.01	0.26	0.34	0.03	
2017-18	44	452	206	1046	2673	345	701	3.03	2.91	0.39	0.08	0.17	0.02	0.20	0.43	0.04	
2018-19	52	604	194	1530	3248	516	1014	2.97	2.87	0.47	0.06	0.19	0.02	0.13	0.39	0.03	
2019-20	69	761	395	1971	3371	424	1547	4.65	4.48	0.58	0.12	0.23	0.02	0.20	0.39	0.04	
AVG	48	512	294	1335	2900	457	878	2.99	2.88	0.45	0.10	0.17	0.02	0.24	0.38	0.04	
STD	14	174	89	434	419	74	445	1.08	1.04	0.08	0.03	0.04	0.00	0.10	0.04	0.01	
CV	28%	34%	30%	32%	14%	16%	51%	36%	36%	19%	33%	21%	19%	42%	9%	21%	
MAX	69	761	395	1971	3371	519	1547	4.65	4.48	0.58	0.14	0.23	0.02	0.39	0.43	0.05	
MINI	34	313	194	863	2347	345	344	1.66	1.58	0.37	0.06	0.13	0.01	0.13	0.34	0.03	
AGR	0.71	1.43	0.16	1.28	0.44	-0.18	3.50	1.80	1.83	0.59	-0.19	0.69	0.19	-0.49	0.07	-0.25	

Sources: Annual & Audited report of the Companies from 2015-2020,

Note: Data Compiled by the researchers

AR= Account Receivable, CA= Current Assets, TA= Total Assets, CL=Current Liabilities, NWC= Net Working Capital

Table 4 exhibits the working capital and liquidity position of Karnaphuli Gas Distribution Company Ltd. The average total assets, current assets, current liabilities, and net working Capital are BDT.2900 crores, BDT. 1335 crores, BDT. 457 crores TK. 6177 crores, BDT. 878 crores respectively and the coefficient of variation (CV) are 14%, 32%, 16%, and 51% respectively. The variations of total assets, current assets, and current liabilities are at a satisfactory level but net working capital is merely satisfiable (51%) which indicates moderate variability. The average current ratios and quick ratios of TGTDC are 2.99 and 2.88 which implies that the position of current ratios as well as quick ratios, are in the position of above standard. Therefore, the liquidity position of the company is highly satisfactory which shows excess assets are held in the company. CV indicates moderate variability and the average growth rate provides positive growth. Comparing current assets to total assets designate that an average of 45 % are current assets and the growth rate increases year to year which indicates inefficient use of current assets. However, all other ratios such as cash to TAs, A/Rs to TAs, inventories to TAs, cash to CAs, A/Rs to CAs, and inventories to CAs are raised and fell in asset structure implying the lack of inconsistency of working capital management.

3.2 Motaal's Comprehensive Test of Liquidity

Motaal prescribes a model of comprehensive test to determine the soundness of a firm about the liquidity position based on the three ratios following their rank and combination of ranks.

$$A. \text{ Working capital (WC) to Current Asset Ratio} = \frac{\text{Working Capital}}{\text{Current Assets}} \times 100$$

$$B. \text{ Inventory to Current Asset Ratio} = \frac{\text{Inventory}}{\text{Current Assets}} \times 100$$

$$C. \text{ Liquid Assets (LA) to Current Asset Ratio} = \frac{\text{Liquid Assets}}{\text{Current Assets}} \times 100$$

Table 5. Summary of Motaal's Comprehensive Test of Liquidity Model

Company	Variable 1		Variable 2		Variable 3		Total Rank	Ultimate Rank
	Working Capital to Current Assets	Rank	Inventory to Current Assets	Rank	Liquid Assets to Current Assets	Rank		
TGTDCL	23.02%	2	2.20%	1	97.80%	1	4	1
JGTDSL	-7.12%	4	3.15%	2	96.85%	2	8	3
PGCL	-3.07%	3	9.20%	4	90.80%	4	11	4
KGDCL	62.71%	1	3.70%	3	96.30%	3	7	2

Sources: Annual & Audited report of the Companies from 2015-2020.

Note: Data Compiled by the researchers

The higher the value of both working capitals to current asset ratio and liquid resources to current asset ratio, relatively the more favorable will the liquidity position of a firm and vice-versa be. On the other hand, the lower the value of the stock to current assets ratio, relatively the more favorable will be the liquidity position of the firm. The ranking of the above three ratios of a firm over some time is done in their order of preferences. Finally, the ultimate ranking is done based on the principle that the lower the points scored, the more favorable will the liquidity position and vice-versa be (Panigrahi, 2013).

From the above Table 5, it is noted that the position of Titas gas transmission and Distribution company ltd. is the best position according to Motaal's Comprehensive test of liquidity and is designated in the first position in the liquidity position (98%) which means that highest current assets are on hand and the second position is positioned by the Karnaphuli Gas Distribution Company Ltd (KGDCL) and this company holds 63% working capital as well as 96% of liquid assets. Next, Jalalabad Gas Transmission and Distribution System Limited (JGTDSL) holds the 3rd position in the liquidity position compared to the others whereas the position of working capital is negative although the company is ranked in 2nd position in inventory holding. The Pashchimanchal Gas Company Ltd. (PGCL) holds the most unfavourable liquidity position among the selected gas distribution companies in Bangladesh.

4. Findings

After analysing the collected data, it is revealed that on the average of total assets, TGTDCL which is the oldest and large gas Distribution Company in Bangladesh occupies the best position followed by KGDCL, and JGTDSL while the lowest position is PGCL. According

to an average of current assets, TGTDCCL occupies the best position followed by KGDCL, and JGTDSL and the lowest position is PGCL. Data reveals that in the case of current liabilities, TGTDCCL is the highest liabilities holder among the selected companies followed by JGTDSL, KGDCL, and the lowest current dues are in the PGCL. Regarding networking capital among the companies, TGTDCCL occupies the highest place, KGDCL is in the second place, and PGCL is in the third place, and it is noted that JGTDSL holds the lowest position whereas the average net working capital is negative. Among the selected gas distribution company in Bangladesh, KGDCL is in a sound position according to average current ratios (2.99:1), and quick ratios (2.88:1) which is a position above standard (2:1 & 1:1) and other companies face a lack of liquidity.

Based on the average of the current assets to total assets, TGTDCCL occupies the best position followed by KGDCL, and JGTDSL and the lowest position is PGCL. The rate of the current assets is 39% -54% indicating huge current assets are held by the company which may be invested in the profitable sectors and increase the profitability. The rate of inventory to total assets and currents is almost 2% to 9% which implies that maximum inventories (liquid gas) are sold. It is noted that KGDCL and PGCL hold huge cash, and cash equivalents assets compared to the current assets, and 35% of the current assets of PGCL are cash whereas 24% of KGDCL. From the perspective of account receivables to total assets, TGTDCCL occupies the highest position followed by KGDCL and PGCL which indicates that all sales are made on credit and a huge amount of account receivables are not collected on due time. Based on account receivables to current assets, it is indicated that 51% of current assets are in the form of account receivables which is not a good sign entirely. According to Motaal's Comprehensive Test of Liquidity, TGTDCCL is in the best position in the field of liquidity, succeeding by KGDCL, and PGCL holds the worst position among the selected Gas distribution company.

5. Conclusion and Recommendation

Working capital plays an important role in achieving the organisation's goals because of its effects on the company's day-to-day operation which directs the business profitability (success or failure) and liquidity. The present study found that the scenario of networking capital level of JGTDSL, and PGCL is not satisfactory although in the first three years their net working capital is negative while the level of working capital on the other two companies maintains a satisfactory level. Based on the overall analysis KGDCL's position of solvency, and liquidity position is sound compared to the other four companies. According to Motaal's comprehensive test of liquidity, TGTDCCL places the highest position of liquidity because it holds 54% of current assets compared to total assets and KGDC holds the second position, and PGCL is in the last place among the companies.

Based on the findings, suggestions for better working capital management for the companies are outlined as follows; 1) JGTDSL and PGCL should maintain their current assets in comparison with current liabilities because negative working capital indicates poor liquidity or it can be implied that the company is overburdened with current liabilities, which is not good in an emergency situation; 2) Except for KGDCL, the other all three companies must try to increase current ratios, and quick ratios by reducing the current

liabilities to achieve the standard solvency, and liquidity position; 3) The management of TGDCL should convert current assets to fixed assets by investing in the profitable sectors to earn profit and reduce the risk of inflation, recessions, and etc.; 4) The Account receivables should be collected within the stipulated time, and reduce the risk of provision of uncollectable especially TGDCL for holding 27% of total assets as receivable which indicates working capital is locked in the customer's hand; 5) The authority of KGDCL and PGCL should reduce cash and cash equivalent assets because excessive cash faces the risk of devaluation, inflation, and rescissions; 6) Proper administration of net current assets should be indispensable for the smooth running of the business. At the same time maximisation of assets with minimisation of liabilities should be preserved; 6) Appropriate symphony of working capital components should always be maintained. Thus, all of the companies should try to reduce the fluctuations of the selected ratios such as CA to TAs, Cash to TAs, A/Rs to TAs, Inv. to TAs, Cash to CAs, A/R to CAs, and Inv. to CAs.

Due to the availability of data, only data of five financial years are taken into consideration to assess the efficiency of working capital management based on secondary data. Primary data may be taken for future research to find out the real situations, and logical background from the management of the companies regarding the holding of liquid assets instead of investing in fixed assets for generating revenues.

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