AUTHORSHIP IN LEADING MANAGEMENT JOURNALS: REPRESENTATION FROM ASIAN BUSINESS SCHOOLS

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***Abstract**: This study investigates the representation of works by authors affiliated with Asian business schools in top management journals. The results did not indicate strong support for change in the representation of works by such scholars during the study period. Looking at the articles published in the top nine journals in the field of strategic management between the year 1999 and 2006, it was found that scholars affiliated to Asian business schools having North American educational background were more productive compared to those having educational background from elsewhere. The findings also revealed that these scholars prefer to publish more in North America based journals when compared with European based journals; and having coauthors who are affiliated with North American business schools enhances the possibility of publication in top tier management journals.*

[Key Words: Educational background, Asian Business Schools, Management Journals, Coauthors, Publication.]

1. BACKGROUND

Although the field of management literature has been largely dominated by publications from scholars affiliated with the European and North American Universities, this domination is coming under challenges as more and more scholars affiliated with the Asian universities are competing to put their work in the top academic journals. These efforts have been reflected by the more frequent appearances of articles in top management journals by authors from Asian region[1]. This phenomenon implies an important change in management studies globally as the focus of global businesses is shifting towards the emerging economies[2]. Wright et al[3] indicated that there is a need to consider the extent to

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which theories and methodologies used to study strategy in mature, developed economies are suited to the social, political, and economic contexts of emerging economies. This situation offers a unique opportunity for authors affiliated with the Asian business schools to promote their work. They are the ones who are in the thick of the things as far as this issue is concerned. Asia is rising and so are its business schools. The business schools in this region are going through revolutionary changes to catch up with the highly prestigious ones in North America and Europe. Hence, it is the right time for conducting a research examining the representation of Asian business schools in top management journals – a reflection of increase in the contributions and communications from Asian business school affiliated authors in the global management arena.

Until the mid eighties, the top management journals were very much region bound, e.g. U.S.-based journals published mostly topics related to the United States[4]. However, this is no longer the case as there are increased interactions between national economies and the emergence of international management practices[5]. In their study on 30 leading international business journals, Chan *et al*[6] found that there is significant representation from non-US business schools in the editorial body of these journals. From their findings, they concluded that although US institutions are still the dominating force in the development of the international business literature, the non-US business schools are also providing significant contributions. Xu *et al*[7] conducted a similar study but focused on a narrow set of journals (six top journals in the international business arena) and found similar results. In another study conducted on all the articles published in the journals covered by the Thompson ISI database between 1992 and 2005, Mangematin and Badden-Fuller[5] found that there has been a significant decline in the number of articles published by the US business schools in these journals (for details, see Appendix 1).

The above mentioned phenomenon suggests that an increasing number of business researchers from Asia and other regions are competing to publish in good journals. An increasing competition for publication space in top tier journals (most of which are US based) also indicates that the business schools are putting more emphasis on publications in these journals while evaluating academicians for tenure and other related benefits. Starbuck[8] found that this pressure is more on less prestigious schools. Most of the top Asian business schools fall under this category as although they have made significant strides, they still lack sufficient prestige and they are continuously pursuing the objective of achieving the desired level of recognition. Although the general perception is that this trend exists for Asian business schools and is becoming stronger by the day, there is still no research that has been conducted to validate this claim.

In their effort to move upward in the rankings, Asian business schools are recruiting more PhD graduates from North American and European business schools that hold prestigious positions in the field of business research. Compared to the early periods such as the 1970s or the 1980s, scholars in the top Asian business schools with degrees from good North American and European schools have risen significantly. This has happened as the schools became more competitive and the requirement for tenured position in such schools became tougher. There was also an increased supply of Asian origin PhD graduates from the North American and European universities in the recent years which have also facilitated this process. A study is warranted to investigate how this new group of scholars is contributing to the representation of Asian business schools in the top management journals.

On the basis of the above discussion, this report investigates (i) the trend of representation from Asian business schools in top tier business journals, i.e. where most of the high quality papers are submitted (are they being submitted in North American journals or European journals), and (ii) how the educational background and affiliation of coauthor(s) are playing a role in the placement of articles by the authors affiliated with the Asian business schools. Hence, our broad research question is - "What is the trend in Asian Business Schools' representation in top management journals and what are the factors that influence the direction of this trend?"

The sample includes articles published by authors affiliated to Asian business schools in the top nine management journals in the field of strategic management. Although the findings suggest that there is a slight increase in the proportions of articles published by the authors affiliated with the Asian business schools in these journals, the statistical test only provides weak support for this result. The analysis further reveals that there is significant difference in the likelihood of appearance in top management journals between articles with and without co-authorship with North American business school affiliated scholars. Also, among scholars affiliated with Asian business schools, authors with North American background are found to be more productive as their contribution was significantly higher in these journals compared to that of scholars trained elsewhere. The authors from Asian business schools also prefer to publish in North American journals rather than European journals. While attempting to find out the productivity of individual institutions, the study revealed that Singapore-based and Hong Kong-based business schools are most active in management research with the highest number of published articles in top management journals. These universities include reputed ones such as the National University of Singapore, Hong Kong University of Science and Technology, City University of Hong Kong, and Chinese University of Hong Kong.

2. HYPOTHESES DEVELOPMENT

Although the globe is becoming smaller by the day and there is rapid internationalization by firms, the management problems that exist in different contexts are often unique[9] and the way to understand these problems vary significantly. This has resulted in increased level of business research across the world, beyond the prior dominant arena of Europe and North America. Asia is one such key region and there is a great potential for contribution to global management knowledge from researches conducted from an Asian perspective[10]. There is an ever increasing demand for well trained and professional managers to cater to the needs in the emerging economies in the Asian Pacific region. This has resulted in a significant growth in the number of business schools offering MBA programs and all these schools are competing for students. The business school ranking plays a key role in the choice of business schools for the potential entrants and a high ranking also ensures regular flow of donations and funds[11]. Research is considered as one of the most important components while calculating the ranking of business schools. Hence, it is not surprising that there is pressure from the schools on the scholars to emulate the achievements by scholars associated with top US and European business schools[12].

As mentioned by Meyer[10], many of the scholars who are engaging in these researches are educated and trained in the United States. As a result there is a rising tendency to follow the styles used in the US and these scholars who are affiliated with Asian business schools are very keen to find a place in the North American journals for their articles. As found by Tracy and Waldfogel[13], there is a positive relationship between research productivity and salary for the academic scholars affiliated with business schools. So the practical incentive to publish in top tier journals also exists.

Hypotheses 1*: There is significant increase in the proportion of papers published in top management journals by scholars affiliated with Asian business schools between 1999 and 2006.*

The Asian Business Schools have generally been more oriented towards teaching than research, and often they lacked the necessary support in terms of resources and facilities to conduct research[14]. As a result of this inexperience, the researchers often lack confidence regarding their ability to publish in the top tier journals. One way to overcome this problem is to pair up with co-authors who are working in schools where the right kind of research environment exists. Also as many of the scholars who are working in the Asian business schools were trained in North America, their supervisors are predominantly affiliated with North American business schools. These North American trained scholars may also find it more comfortable to pair up with fellow research students they worked with in their PhD program, many of whom end up teaching at the North American Universities. This also opens up an opportunity for these Asian business school affiliated scholars to publish in the prestigious journals in the field of management and strategy. As mentioned by Lau[15], it is very important for the Asian business schools to cooperate with schools from the United States and Europe and pursue more and more collaborative research. This has become a very important aspect for integration of global knowledge in the present era. Hence scholars who would pursue such activities may find their institutions supporting them in these endeavors.

Hypothesis 2 – *The proportion of articles published in the top management journals by authors affiliated with Asian business schools is more when the author(s) have scholar(s) affiliated to North American business schools as coauthor(s) than when the author(s) do not have such scholar(s) as coauthor(s).*

The hiring decision of the business schools have increasingly shown a trend of hiring from North American business schools, as they believe that affiliation with those schools indicates a higher level of productivity. It comes as no surprise as most of the top business schools according to various rankings are situated in North America and the professors in those schools are largely interested to publish in North American Journals. These new group of recruits in the Asian Business Schools, trained in North America, are likely to go for North American journals instead of European and other journals. The benefit of publishing in those journals is also high. As Leung[1] mentioned, the common list of recognized journals in East Asian business schools are similar to such lists in the United States and publication in these journals play a key role in the hiring, tenure and promotion decisions in these schools. Analyzing the continuous improvement in the level of research conducted by scholars affiliated with Asian business schools in regional journals and the rising enthusiasm among scholars working in this region; Pleggenkuhle-Miles *et al*[16] predicted that it is only a matter of time before scholars from Asian business schools will be able to challenge the theories that are developed mostly in the North American contexts. Most likely, places where these debates will take place will be in the top ranked management journals at the global level. Hence, it might be plausible to say that there is an increasing tendency in the mind of scholars affiliated with Asian business schools to publish articles in the highly respected journals, most of which are affiliated with North America based universities or institutes.

Hypothesis 3(a): *Scholars affiliated with Asian business schools are increasing their representation in the North American journals compared to the European journals.*

The educational background and training of the authors is also likely play a role in deciding where their journals are placed. The scholars who were trained in the North American system would be more comfortable publishing in journals that they are more familiar with. These scholars also have good research capability which is reflected by the inclusion of a number of business schools from the Asia-Pacific region in the list of top business schools based on research productivity[1] (Leung, 2007).

Hypothesis 3(b): S*cholars affiliated with Asian Business Schools who obtained their PhDs from North America have higher representation in the top management journals compared to those who obtained PhDs from elsewhere.*

3. METHODOLOGY

The data for this study contain articles written by author(s) affiliated with Asian business schools that were published in 9 leading management journals; 5 first-tier journals and 4 second-tier journals. The time period was from 1999 to 2006. As our source of the journals was mainly the e-versions available in the National University of Singapore library database, we could not go beyond 2006. This is not unnatural as e-versions are generally available after a certain lag, i.e. if the print copy becomes available in 2007, the e-version would become available in 2008 or even later in some cases. The journals were divided into two categories – North America based and European based. The list of journals and the categorization is reported in Table 1. If a journal is an official journal of a university, academy, or society, we take the address of the university, academy, or society to decide the journal's geographic location. Otherwise, we rely on publishers' addresses for the respective journals for categorization purpose. Accordingly, SMJ by Strategic Management Society, AMJ and AMR by Academy of Management, ASQ by Cornell University, Organization Science by INFORMS, JIBS by Academy of International Business, and JOM by Sage Publishing are categorized as North America based journals. We have two European based journals, JOMS published by Blackwell Publishing and JBV by Elsevier. There are two journals (SMJ, JIBS) which are official products of North America based academies or societies but published by European publishers.

Table 1: ***List of journals and their locations***

TIER 1	LOCATION
Academy of Management Journal (AMJ)	***USA***
Academy of Management Review (AMR)	USA
Administrative Science Quarterly (ASQ)	USA
Strategic Management Journal (SMJ)	USA
Organization Science (OS)	USA

TIER 2	LOCATION
Journal of Business Venturing (JBV)	***Europe***
Journal of International Business Studies (JIBS)	USA
Journal of Management (JOM)	USA
Journal of Management Studies (JMS)	Europe

For each of the articles that had at least one author affiliated with an Asian business school, we coded the following information: article title, year, journal title, author(s)' affiliated school(s), author(s)' educational background, and the geographical location of research context(s). There are two cases in which one of the authors was affiliated to banks or consulting companies. We rely on information of the other authors to analyze the data for those cases. Table 2 reported the number of articles by authors affiliated to Asian business schools each year.

Table 2: ***Number of articles by authors affiliated to Asian Business Schools that appeared in the top management journals from 1999 to 2006*** [*]

Journal	1999	2000	2001	2002	2003	2004	2005	2006
Journal of Management	6	3	3	2	1	5	5	4
Journal of Management Studies	6	6	7	7	9	4	10	7
Journal of Business Venturing	1	5	3	3	2	5	3	3
Academy of Management Journal	3	10	8	7	4	6	9	3
Administrative Science Quarterly	1	4	2	2	0	1	3	2
Strategic Management Journal	6	5	8	11	10	6	8	5
Journal of International Business Studies	9	6	6	10	9	5	11	15
Academy of Management Review	1	3	2	4	3	3	8	8
Organization Science	2	2	2	3	6	10	4	4

In our analysis, we mainly used descriptive statistics. However, for testing the hypotheses we used a simple statistical technique, the two-proportion z-test. This

test is used to determine whether the difference between two proportions is significant. The analysis in this study involves comparing four couples of proportions:

(i) The proportion of articles published by authors from Asian business schools in the period of 1999-2002 and that of the period of 2003-2006.
(ii) The proportion of articles published by authors from Asian business schools with U.S. co-authorship and that without U.S. co-authorship.

[*] Includes articles published by authors affiliated with business schools in Australia and New Zealand

(iii) The proportion of articles by scholars affiliated with Asian business schools appeared in the North American journals and that in the European journals.
(iv) The proportion of articles by scholars from Asian Business Schools with PhDs from North America and that by scholars from Asian Business Schools with PhDs from else where.

To illustrate how to conduct a z-test, we explain the test for the first couple of proportions. Suppose we are conducting an imaginative experiment in our mind by randomly selecting an article from the pool of all leading management journals. We call the probability p_1 if it (the selected article) is written by author(s) from Asian business school in the period of 1999-2002 and p_2 for the period of 2003-2006. Here p_1 is the proportion of articles by author(s) from Asian business schools in the pool of leading management journals from 1999-2002 and p_2 is that from 2003-2006. To test the first hypothesis that $p_1 < p_2$, we select a sample of nine journals (in Table 1) among the pool of leading management journals. The test statistic is a z-score (z) defined by the following equation:

$$\bar{z} = \frac{n_1 f_1 + n_2 f_2}{n_1 + n_2}$$

Where

f_1 = 8.17%: sample proportion in period from 1999-2002. It equals the observed number of articles by authors from Asian business schools in nine selected management journals from 1999 to 2002 divided by n_1.
n_1 = 1567: is size of sample for the period from 1999-2002. It includes all articles published in our sample of nine journals from 1999 to 2002.
f_2 = 9.17%: sample proportion in period from 2003-2006.
n_2 = 1744: size of sample for the period from 2003-2006. It includes all articles published in our sample of nine journals from 2003 to 2006.

The z-score follows normal distribution. We compute p-value for z-core in one-tailed test as our null hypothesis is that $p_1 = p_2$ and alternative hypothesis $p_1 < p_2$. Results are reported in Table 4. The other z-tests are conducted similarly in our sample of nine management journals.

4. RESULTS

We first looked at the representation of the Asian business school affiliated authors in the different journals as percentage of the total articles published.

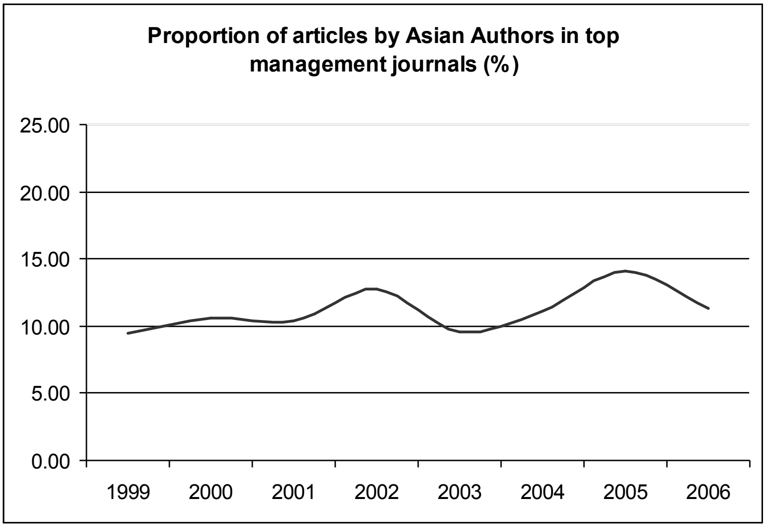
The percentage of articles published by authors from Asian business schools varied in a random fashion and there was no clear trend. We then included articles published by scholars affiliated with business schools in Australia and New Zealand. But even then, we could not identify a clear trend from the tables and the figure.

Table 3: ***Proportion of articles by authors affiliated to Asian Business Schools that appeared in the top management journals from 1999 to 2006 (%)****

Journal	1999	2000	2001	2002	2003	2004	2005	2006
Journal of Management	16.67	6.25	7.89	5.71	2.38	11.63	11.36	10.81
Journal of Management Studies	13.64	12.50	14.89	14.89	10.98	6.78	15.63	9.86
Journal of Business Venturing	4.00	22.73	11.11	10.71	5.13	11.11	8.57	7.50
Academy of Management Journal	6.82	13.33	10.81	9.72	8.00	10.71	12.00	4.69
Administrative Science Quarterly	3.85	16.67	9.09	10.00	0.00	6.25	18.75	12.50
Strategic Management Journal	9.52	7.25	13.11	16.67	12.82	8.70	11.43	7.94
Journal of International Business Studies	20.93	14.63	11.11	21.28	13.04	12.20	23.91	24.19
Academy of Management Review	2.44	6.98	6.90	15.38	8.33	12.00	21.62	17.02
Organization Science	4.08	4.44	4.55	6.82	13.04	19.61	8.16	8.89

If one looks at the overall result (i.e. representation in all nine journals), s/he can see a slightly increasing trend. However, the change is not much as the representation changed from 9.43% in 1999 to 11.36% in 2006.

* Includes articles published by authors affiliated with business schools in Australia and New Zealand



The overall average representation for the period 1999-2006 was 11.17%. This figure again confirmed that there was no significant change in the representation over the years. To confirm more on this issue, we conducted a z-test comparing representation into two sub-samples: sample 1 included articles from year 1999 to 2002 and sample 2 included articles from year 2003 to 2006. Although the result was in line with our prediction in hypothesis one, the support was not as strong as we expected it to be.

We did find good support for our second hypothesis. In line with our argument, the findings indicated that the authors who had scholars from North American affiliated business schools as their coauthors had more representation in the top tier journals compared to the ones who had coauthors from other institutions.

Results further revealed that author(s) affiliated to Asian Business Schools published more in North America based journals than European based journals. Authors from Asian Business Schools represent for 8.96% articles in the North America based journals and this figure is 7.75% for European based journals. However, this support was significant only at $p<0.10$ level. Hence, hypothesis 3a is weakly supported. We found strongly significant support for hypothesis 3b. Scholars working in the Asian business schools who have North American PhDs had higher representation in the top tier journals than the ones who have PhDs obtained from elsewhere (6.40% as compared to 2.45%).

Table 4: *Results of z-tests* (one tailed)

Pairs compared	N	Proportion	Findings	Implication
1999-2002	1567	8.17	p<0.1	Weak support for H1
2003-2006	1744	9.17		
North American Coauthor(s)	3311	4.92	p<0.01	Strong support for H2
Other Coauthor(s)	3311	3.78		
North American Journals	2588	8.96	p<0.1	Weak support for H3(a)
European Journals	723	7.75		
North American background	3311	6.40	p<0.001	Very strong support for H3(b)
Other background	3311	2.45		

We further investigated the representation of individual Asian Business Schools in top management journals. For this analysis we added the universities from Australia and New Zealand to make the list more comprehensive. Table 5 lists 30 Asian Universities/Business Schools which have the highest number of publications in top management journals. As can be seen in table 5, most of these schools are located in Singapore and Hong Kong.

Table 5:
Top 30 Universities in Asia by number of publications

ID (Rank)	Universities	No. of Articles	ID (Rank)	Universities	No. of Articles
1 (1)	Chinese University of Hong Kong	32	16 (15)	Monash University	7
2 (2)	NUS	30	17 (15)	Lingnan University	7
3 (3)	University of New South Wales	25	18 (15)	Hong Kong Baptist University	7
4 (4)	City University of Hong Kong	22	19 (19)	Yonsei University	6
5 (4)	HKUST	22	20 (20)	Peking University	5
6 (6)	University of Hong Kong	20	21 (20)	Victoria University of Wellington	5
7 (7)	Hong Kong Polytechnic University	17	22 (20)	Tel Aviv University	5
8 (8)	University of Melbourne	16	23 (20)	Queensland University of Technology	5
9 (9)	University of Queensland	13	24 (20)	Hebrew University of Jerusalem	5
10 (10)	SMU	12	25 (25)	Korea Advanced Institute of Science and Technology	4
11 (10)	Korea University	12	26 (25)	University of Macau	4
12 (10)	NTU	12	27 (25)	University of Tsukuba	4
13 (13)	Seoul National University	9	28 (28)	University of Sidney	3
14 (14)	INSEAD	8	29 (28)	University of Haifa	3
15 (15)	University of Auckland	7	30 (28)	Hitotsubashi University	3

To have a deeper look at the quality of publication by each University and Business School, we investigated their representation in tier 1 and tier 2 journals. Table 6 lists the top 20 Asian Universities/Business Schools getting highest number of published articles in tier 1 journals. Located at the top three positions in the list are NUS (21 articles), University of New South Wales (18 articles), and HKUST (17 articles). Table 7 lists top 20 Asian Universities/Business Schools getting highest numbers of published articles in tier 2 journals. Located at the top three positions in this list are Chinese University of Hong Kong (21 articles), University of Hong Kong (13 articles), and Hong Kong Polytechnic University (12 articles).

Table 6: Top 20 Universities in Asia by number of publications in Tier 1 Journals

ID (Rank)	University	No. of Publication
1 (1)	NUS	21
2 (2)	University of New South Wales	18
3 (3)	HKUST	17
4 (4)	City University of Hong Kong	11
5 (4)	Chinese University of Hong Kong	11
6 (6)	Korea University	10
7 (6)	INSEAD (Singapore)	8
8 (8)	University of Queensland	7
9 (8)	University of Hong Kong	7
10 (8)	Seoul National University	7
11 (11)	NTU	6
12 (11)	University of Melbourne	6
13 (13)	Hebrew University of Jerusalem	5
14 (13)	Hong Kong Polytechnic University	5
15 (13)	Yonsei University	5
16 (16)	University of Tsukuba	4
17 (16)	Tel Aviv University	4
18 (18)	SMU	3
19 (18)	Peking University	3
20 (18)	Hitotsubashi University	3

Table 7:
Top 20 Universities in Asia by number of publications in tier 2 journals

ID (Rank)	University	No. of Publication
1 (1)	Chinese University of Hong Kong	21
2 (2)	University of Hong Kong	13
3 (3)	Hong Kong Polytechnic University	12
4 (4)	City University of Hong Kong	11
5 (5)	University of Melbourne	10
6 (6)	NUS	9
7 (6)	SMU	9
8 (8)	University of New South Wales	7
9 (8)	University of Auckland	7
10 (8)	Lingnan University	7
11 (11)	NTU	6
12 (11)	University of Queensland	6
13 (13)	Monash University	5
14 (13)	HKUST	5
15 (13)	Hong Kong Baptist University	5
16 (16)	Queensland University of Technology	4
17 (17)	Victoria University of Wellington	3
18 (17)	University of Haifa	3
19 (17)	Massey University	3
20 (20)	Korea University	2

5. DISCUSSION AND CONCLUSION

In general, we have found that there is a slightly rising trend in the proportion of articles published by authors affiliated with the Asian business schools in top management journals. Since the statistical test only provided weak support for this finding, it would be unwise to think that there has been a significant increase in the representation. However, considering the consistency and low variance in representation on a yearly basis, it can be safely said that the trend has become steady. May be the radical shift in the representation happened before our study period. Future research can be geared towards this direction and instead of an eight year window, a twelve or sixteen year window could be used. Our analysis further reveals that there was significant difference in the likelihood of appearance in top management journals between articles with and without North American co-authorships. This comes as no surprise since most of the journals in our sample are North America based and authors affiliated with North American business schools are likely to have more experience, the right kind of training and better level of understanding as far as publishing in these journals are concerned.

We found support for our last two hypotheses. This indicates that educational background of the authors play a key role in their choice of journals. The results further indicate that although the dominance of North American business schools in author representation has reduced over the years, the North America based journals could maintain their position as the prestigious ones in the field of management. The additional analysis that we conducted provided some useful insight into which institutes are most productive in terms of publication in top management journals. This finding can lead to an interesting future research as scholars may try to find out what makes some schools more productive than others.

This paper has several limitations. First, we only examine the top nine management journal in the field of strategic management. Hence, generalization of our findings to other subfield of management such as HRM, OB etc. is risky and our findings should be dealt with care. Future researchers may want to consider a wide range of journals in several management subfields other than strategic management only. Second, we do not examine publication of the authors affiliated to Asian business schools in regional management journals like APJM. Considering the continuous improvement of the regional journals, scholars who might engage in future studies in this area of research may consider incorporating one or two of those journals in the dataset. Third, the time period observed is from 1999-2006. As our reviewers suggested, an extension of this period might yield more robust finding. Future studies should look to extend this time period in both directions.

Our research is, to the best of our knowledge, the first attempt that investigates representation of authors affiliated with Asian business schools in top management journals. We hope this study, in its own small way, will provide a stepping stone for further research in this area.

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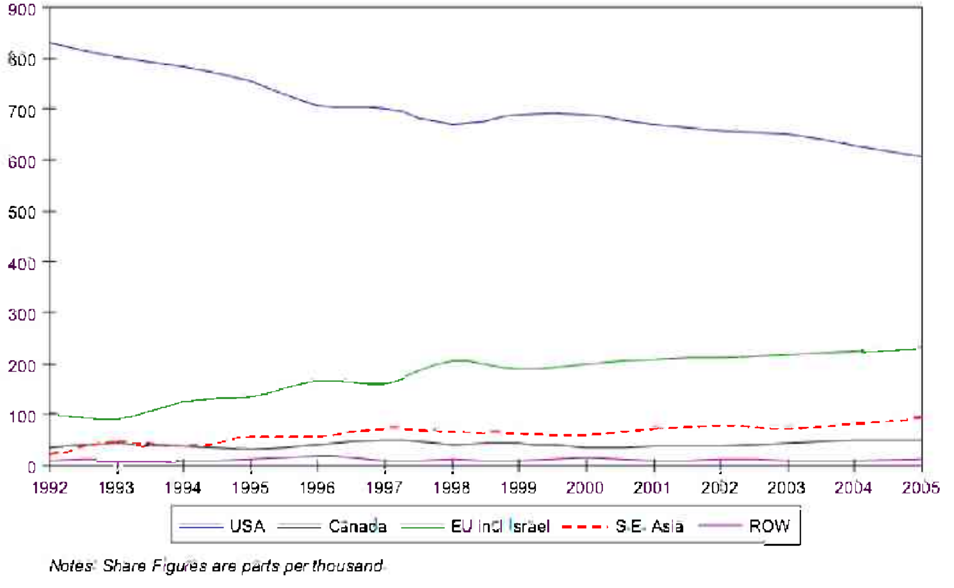
APPENDIX 1



Source: Mangematin and Baden-Fuller (2008)

RESEARCH ON HRM PRACTICES IN BANGLADESH:
A REVIEW OF LITERATURE AND DIRECTIONS FOR FUTURE STUDIES

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Dr. Mohammad Tahlil Azim†
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Abstract: *Though researchers and practitioners are quite curious about the field of HRM in Bangladesh, but they have limited access to the current status of HRM research due to nonexistence of any central database or any electronic warehouse. This study strived to fill the gap by compiling thirty seven research studies conducted so far on HRM practices in Bangladesh. This study also identifies the research gaps with respect to HRM practices in Bangladesh. Finally, the present study proposed some areas where future studies can be carried out.*
[Keywords*: HRM practices, Literature Review, Bangladesh.]*

1. INTRODUCTION

Human resource is the most important out of four basic resources of an organization such as human, physical, financial, and information resources.[1] Proper management of the human resources is also decisive to the success of an organization.[2] Human resource management (HRM) has emerged as a key function in organizations.[3] It refers to the policies and practices involved in carrying out the ‘human resource’ aspects of a management position including human resource planning, job analysis, recruitment, selection, orientation, compensation, performance appraisal, training and development, and labor relations.[4] The purpose of human resource management is to improve the productive contributions of employees to the organizations.[5]

Statement of the Problem and Rationale of the Study

Although HRM practices are requisite in enhancing organizational performance and competitive advantage[6], surprisingly very insufficient number of studies have been conducted on HRM practices in Bangladesh and other developing countries[7].

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In Bangladesh, due to nonexistence of any central database or any electronic warehouse, a researcher has to collect all the research works physically from sources scattered throughout the country.[8] That is why, it is very much thorny for a researcher to collect research works to conduct literature survey for further research in Bangladesh context. Though researchers and practitioners are quite curious about the field of HRM in Bangladesh, they don't know about the current status of HRM research and practice. This study strived to fill the gap by presenting a substantial number of research studies conducted so far in different aspects of HRM in context of Bangladesh. This study would benefit the researchers, practitioners, policy makers, students, and various stakeholders by offering the status of research on HRM practices in Bangladesh. This study would definitely augment the current research and practice of HRM in developing countries by showing the contemporary scenario of HRM in Bangladesh.

2. OBJECTIVES OF THE STUDY

The main purpose of the study is to give an overview of the status of research conducted so far on HRM practices in Bangladesh. The present study has the following specific objectives:

1. To compile the studies conducted so far on HRM practices in context of Bangladesh.
2. To identify the research gaps with respect to HRM practices in Bangladesh.
3. To offer some directions for conducting future research on HRM practices in context of Bangladesh.

3. RESEARCH DESIGN AND METHODOLOGY

The methodology used for this study was literature survey.[9] The study was completely based on compiling the studies conducted so far on HRM practices in Bangladesh. The researchers collected different studies on HRM practices in Bangladesh physically from different libraries, universities, and book stores. In reviewing the literature, both theoretical and empirical studies were taken into consideration. In total, 37 studies were collected for the review. With respect to the major HRM practices[10], the collected studies were categorized into six groups such as overall HRM practices, HR planning, recruitment and selection, training and development, performance appraisal, and industrial relations. Job analysis and compensation were not included as no specific study was found on these two practices. Necessary interpretations were made on the basis of the findings.

4. RESEARCH FINDINGS

The following sections depict the research studies conducted so far on HRM practices in Bangladesh.

4.1 Research on Overall HRM Practices in Bangladesh

Rab explored the personnel (HRM) practices of 24 small enterprises operating in Dhaka.[11] He identified that in case of recruitment, personal contact was the primary means (58%) followed by advertisement in newspaper (21%), walk-in (13%), and company notice board (8%). All the enterprises, except one, used work sample test and interview for the selection of employees. On-the-job training was observed to be the most widely used one. The employee turnover was very low (less than 10%) in 92% of enterprises. Most of the enterprises (87.5%) paid one or more types of allowances in addition to salary. Nearly 7% enterprises paid festival bonus, 20% paid medical allowance, and 20% provided pay increment. A case study was conducted on the overall personnel management (HRM) practices of Khulna Hard Board Mills Ltd.[12] It discussed about the recruitment, selection, training and development, compensation, labor relations, and safety and health. The researcher unearthed different problems related to personnel management practices of the mill such as conflicts in personnel department, disproportionate span of supervision, inappropriate grade, high rate of absenteeism, antagonistic feeling of local workers, inadequate training programs, lack of skill audit, nepotism and favoritism in promotion and selection of employees, poor industrial relations, inadequate compensation, and poor safety and health services.

Shelly examined the roles of human resources, and infrastructure in the industrialization process of Bangladesh.[13] He observed that ineffective human resource management was one of the major problems faced by industrial sector of Bangladesh. Most of the HRM practices such as HR planning, recruitment, selection, promotion, performance appraisal, compensation, incentives, and industrial relations were not performed properly in industries. Mohiuddin and Mahmood studied the transformation of personnel management into human resource management.[14] Based on different empirical and theoretical studies conducted in the western world, the authors distinguished between personnel and human resource management. They also discussed about the impact of HRM practices on organizational performance. Another researcher discussed about the linkage between human resource management and corporate strategy.[15] He also revealed that corporate strategies developed by Michel Porter such as cost leadership, differentiation, and focus strategies had significant impact on HR strategies and practices.

Moyeen and Huq studied HRM practices of 92 medium and large business enterprises (public and private sector) located in Dhaka, Bangladesh.[16] They found that only 62% of surveyed organizations had an HR/IR department. About 96% organizations had training programs. 91% of organizations had performance appraisal system and similar percent of organizations had a system of rewarding the good employees. The least prevalent practice among the surveyed organizations was employee pension plan. The researchers tested two hypotheses and inferred that union status (presence of unions) was associated with some HRM practices and firms' size was found as an important predictor of some of the HRM practices. They also unearthed that HRM was being practiced, either formally or informally, to a greater or lesser extent, in business enterprises regardless of the size. A research study examined the human resource management (HRM) practices of the ready made garments (RMG) enterprises.[17] The study emphasized on improving productivity of garments workers through proper HRM practices to face challenges of globalization. They identified that wage rate and labor productivity of workers in Bangladesh were very low in comparison to competing nations. Furthermore, they discovered that the reasons for the low productivity of laborers were unsystematic recruitment and selection of workers, unavailability of training facilities, inadequate financial facilities, and low motivation level of workers.

Human resource management practices of ten local private manufacturing enterprises listed under Dhaka Stock Exchange (DSE) were examined by Akhter.[18] She covered different aspects of HRM practices of the surveyed manufacturing enterprises such as job description, HR planning, recruitment and selection, orientation, training, promotion, performance appraisal, transfer, salary and wage administration, incentives, and fringe benefits. She also measured correlation between employees' opinions regarding HRM practices in their enterprises and their age, education, and experience. Islam in a study on the HRM practices of small businesses of Bangladesh found that small businesses did not offer reasonable salaries and benefits, training and development opportunities.[19] The author mentioned that due to outdated HR practices, the productivity and motivation level of the employees of small businesses of Bangladesh were very low. Haque and Prince (2003) assessed the HR practices such as training, promotion policy, performance appraisal method, and transfer policies of some private manufacturing industries based in Chittagong.[20] They found that the surveyed companies imparted on-the-job training, vestibule training, apprenticeship training, and class room training to employees. They also found that the surveyed companies filled up vacancies through internal movement. The companies had formal performance appraisal system. Again, the companies were found to have no standing policy regarding transfer. An in-depth study assessed the institutional context of human resource management practices in Bangladesh.[21] The author mentioned that research on HRM did not receive its due attention in Bangladesh. The researcher observed that other than organizational contingencies, the institutional context such as national education and training system, national industrial relations system, regulatory frameworks, and overall societal context had significant influence on the development of HRM practices in Bangladesh.

Hossain, Khan, and Yasmin analyzed the nature of voluntary disclosures about human resource in the annual reports of 40 Bangladeshi companies.[22] They found that contemporary Bangladeshi companies, though not mandatory, were willingly giving various information regarding their human resources in the annual reports. Akand, in a case study, investigated the personnel management practices of Janata Bank.[23] Ernst and Young, and Metropolitan Chamber of Commerce and Industry conducted a survey on HR practices of more than 50 organizations selected from industries (mainly from the private sector) such as Pharma and Healthcare, FMCG, IT, Telecom, Manufacturing, Finance, NGO, Textile/Garments, and Conglomerates.[24] They thoroughly examined talent acquisition, performance management, people development, compensation and benefits, HR strategy and processes, organizational culture, and HR practices for Workmen, staff and other non-managerial employees of the surveyed organization. Uddin, Habib, and Hassan depicted a comparative scenario of HRM practices with respect to the public and the private sector companies of Bangladesh.[25] The study encompassed the HRM practices of Wartsila, one of the private sector power generation companies, and BPBD (Bangladesh Power Development Board), the public sector power generation company. They examined recruitment, selection, training, performance appraisal, and compensation practices of both the firms. The authors concluded that the overall HRM practices of Wartsila very much satisfactory. In contrast, the HRM practices of BPDB were quite inefficient. Huda, Karim, and Ahmed made a study on the HRM practices of 20 NGOs of Bangladesh.[26] It was identified from the study that the HR challenges faced by the NGOs were shortage of qualified candidates, insufficiency of qualified female candidate, poor academic background of applicants in the suburban and rural areas, and the lack of training infrastructure and training need analysis. The first three challenges were related to recruitment.

4.2 Research on HR Planning in Bangladesh

Ahmad and Khalil compared the HR planning practices of two banks - Dutch Bangla Bank Ltd. and Agrani Bank.[27] They observed that none of the banks had any written HR planning. They emphasized on proper recruitment, selection, and training to ensure human efforts in the service of organizational goals. Hossain and Ahmed also analyzed the HR planning practices of CARE, a leading international organization having operations in Bangladesh.[28]

4.3 Research on Recruitment and Selection in Bangladesh

Taher and Arefin examined the recruitment and selection (R and S) process of Bangladesh Open University (BOU).[29] They emphasized on proper R and S because it constitutes the most important features of HRM and the cost of improper R and S is also very high. Finally, they recommended that BOU should set a full fledged HR department with experienced and competent people, formulate HR plans, and introduce computerized HR system to improve the R and S process of BOU. A similar study assessed the recruitment and selection practices of Square Pharmaceuticals Ltd (SPL).[30] SPL practiced both internal and external sources of recruitment. About 60% positions of SPL (which were mainly field level positions) were filled externally through newspaper advertisements. The rest of the positions were filled internally by employee referrals, and references of reputed personnel and senior management. It did not use internet for this purpose. SPL used different tests such as written test, communication skill test, interview, alcohol/drug test, medical check up, reference check, and skill test in selecting right people for the right posts.

4.4 Research on Training and Development in Bangladesh

Islam studied the training and development needs of the managers of the public sector enterprises.[31] He uncovered that the employees of the production management, general administration, and personnel management departments of the public sector enterprises needed extensive training. The author also uncovered the problems related to shortage of adequate number of professional managers in our public sector enterprises with proper knowledge, concepts, and techniques of management. He mentioned that the problem was rooted in the vacuum created by the departure of non-local experienced managers (who used to manage most of our enterprises before liberation), low level of education and training, and lack of experience and expertise. This caused a severe deterioration of economic indicators in our country. Hoque investigated 10 industrial enterprises (5 public and 5 private) located in Chittagong.[32] He found that human resource development (HRD) had positive impact on organizational effectiveness (OE). Ather and Solaiman assessed human resource development (HRD) practices of 50 public and private industrial enterprises located in Chittagong.[33] They found that training needs of the employees of the sample enterprises were identified on the basis of circumstances, corporate objective, new recruitment, introduction of new technology, new assignment by promotion, existing requirement for skill development and improving productivity, requirement for filling present and future vacancies, trend of profit or loss, and comparative study on productivity and output. They further unearthed that 75% of the workers of the sample enterprises went through on-the-job training, followed by 17% apprenticeship training, and the rest 8% vocational training. On the other hand, 95% of the executives of the sample enterprises were trained through job orientation, followed by 40% through job rotation, 35% through understudy method, 32% through workshop, 25% through special courses, 8.5% through seminar, and 5% through case method. In case of workers, the areas of training were industrial relations, safety, machine maintenance, operator orientation, and worker leadership. On the other hand, the areas of training for executives were corporate management, financial management, marketing management, personnel management, security management, and human resource development. Jahur, Absar, and Hossain examined the training programs of two leading NGOs of Bangladesh.[34] They studied the training needs assessment process, training methods, and training effectiveness of BRAC and Proshika. They uncovered that both the NGOs used very sophisticated techniques in assessing training needs. They also found that effectiveness of the training programs offered by the NGOs was very high. Ahmed evaluated the personnel training programs of the public sector manufacturing enterprises of Bangladesh.[35] She categorically pinpointed the problems pertaining to employee training of the public sector industrial firms such as non-existence of training policy and training need assessment, insufficient training budget, too much interference of the respective ministries and the like. Khan and Jahur examined the HRD practices of 38 industrial enterprises of Bangladesh.[36] The study found that the surveyed organizations' HRD programs were not up to date.

4.5 Research on Performance Appraisal in Bangladesh

Hamid and Saifuddin assessed the employee performance appraisal practices of the IFIC Bank.[37] They identified some problems related to the performance appraisal system of the surveyed bank such as trait based appraisal, excessive focus on past performance, and confidentiality in appraisal process that kept appraisees uninformed about their performance. Bhuiyan and Taher studied the different aspects of performance appraisal.[38] They discussed objectives of performance appraisal, linkage between performance appraisal and compensation, formal and informal appraisal. They also described the roles of appraisers and appraisees in performance appraisal. Azim and Haque conducted a survey on the performance appraisal practices of 58 (30 manufacturing and 28 service) organizations in Bangladesh.[39] They found that all the surveyed organizations practice performance appraisal of some type. The study identified that 57.1% companies used performance appraisal annually whereas 42.9% of the samples used performance appraisal bi-annually, quarterly, and monthly. Out of the performance appraisal methods, Management By Objective (MBO) was found to be practiced by most of the companies (58.62%) followed by paired comparison method (31.03%), critical incident method (17.24%), and alternative ranking method (10.34%). Narrative form was found to be least preferred (3.44%). The study further observed that organizations used performance appraisal for different reasons. The most dominant reason behind performance appraisal was to identify candidates for promotion (82.8%) followed by pay raise (69.0%), and training and development (62.1%). Most of the organizations used performance appraisal for taking various important HR decisions. It was found that immediate supervisors conducted the performance appraisal in most of the surveyed organizations (69.0%) followed by self-rating, 360 degree, and rating committee. Another study discussed the employee performance appraisal practices in the banking sector of Bangladesh.[40] The study also explored the gap between the expectations and realities with respect to performance appraisal of employees in the selected banks. The study showed that the overall performance of the banks could be improved by making employees familiar with the performance appraisal tools and by valuing employees' expectations in their performance appraisal process. In a case study, Ahmed and Sultana explored the performance management of ANZ Properties Ltd.[41] They found that performance appraisal was almost informal at ANZ. Though the company had job descriptions for the employees, they did not have any performance evaluation form. Performance appraisal was done by observation and comments of supervisors. The company used comparative approach to judge performance of one employee against others. Based on comparison, the employees were ranked. The company relied on managers or supervisors to get performance information of the employees. At ANZ, performance feedback was not given on individual basis unless any complaint or negative comment had been raised against an employee. The best performers did not usually get any formal feedback. However, the poor performers used to get a time limit to improve their performance otherwise terminated.

4.6 Research on Industrial Relations in Bangladesh

Khan studied industrial relations in Bangladesh with special emphasis on trade unionism.[42] The time frame of his study was from 1971 to 1984 with the influences of two colonial periods — British and Pakistani periods. Rahman examined the labor management relations in the Crescent Jute Mills, Khulna.[43] He found the presence of strain between workers and management, labor discontentment, hostile attitude of workers towards management and vice versa in the mill. He also observed that job dissatisfaction was very high among the employees of the mill. Overall labor-management relation was very poor. A similar study also investigated the labor rations of some selected industries of Chittagong.[44] Another study made by Rahman assessed the influence of labor-management relations on improving productivity in the context of Bangladesh.[45] He described various aspects of labor legislation, labor practices, wages, productivity, and labor relations of Bangladesh. Taher examined the roles played by the various governments of Bangladesh in context of industrial relations during 1972-1992.[46] He also described industrial relations in two colonial phases – British and Pakistani periods. He found that governments in different periods played significant roles in shaping industrial relations of Bangladesh. Ahmed studied current features and trends of industrial relations (IR) system in Bangladesh and outlined the future challenges facing the IR paradigms in context to globalization.[47] He mentioned that the highly confrontational and unfriendly scenario of IR in Bangladesh needed to be changed to meet the requirements of modern world in order to intensify industrial productivity and employment generation. Taher and Hossain identified that the reasons for deteriorating labor-management relations in Bangladesh were: conflicting government decisions, anomalies of labor laws, delay in settling disputes and grievances, and attitudes of employers.[48] They recommended some measures to be taken for improving industrial relations such as democratic practices in society and in the industry; positive roles of the government; mutual trust and respect among state, workers, and employers; non-interference of political parties; development of efficient and honest trade union leadership; training and orientation for workers; only one trade union in each enterprise; reasonable pay structure and benefits; and favorable labor laws and policies.

4.7 Research Gaps and Directions for Future Research

The above literature survey reveals that like other developing countries, HRM as an area of research has not received proper attention in Bangladesh. Though, both review type and empirical type of studies were carried out, empirical studies primarily used descriptive statistics such as mean, percentage. Only 5 studies (see reference no. 16, 18, 27, 32, & 36) compiled in this study used inferential statistics in the data analysis. Research studies were conducted more on manufacturing firms than on the service oriented firms. Only two studies researched the HRM practices of small firms. Industrial relations and training received highest attention out of all HRM practices as the areas of research. Performance appraisal has also been found to be an attractive area of research. No specific study has been found on job analysis and compensation. Studies showing the relationship between HRM practices and organizational performance have not yet carried out in Bangladesh context. It is also evident from the above review of literature that except a few articles on different HRM practices, a limited number of in-depth studies have been conducted so far on human resource management practices in context of Bangladesh.

As human resource management practices have not been studied extensively in Bangladesh, therefore, there are a number of areas where future studies can be directed such as:

- Studies can be undertaken to portray the HRM practices of small and medium enterprises(SMEs) of Bangladesh
- Case studies may be undertaken on HRM practices of different organizations for thorough analysis.
- In-depth studies may be conducted to evaluate the impact of HRM practices on organizational performance through using associational and difference inferential statistics.
- Studies may be carried out on HRM practices of service sector enterprises.
- Studies may be carried out to portray the comparative scenario of HRM practices with respect to public and private sector of Bangladesh.
- More studies may be undertaken on least investigated areas of HRM in Bangladesh such as job analysis, compensation management, HR planning, career development, safety and health, HR audit, and HR research.

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DECISION SUPPORT SYSTEM:
Applying Artificial Intelligence in Managers' Decisions for Increasing Efficiency

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***Abstract**: Managers face complex and dynamic situations, while making decisions. They need to make efficient decisions for the organizations. Use of information technology along with the artificial intelligence may add a very effective dimension in their job. Decision support systems (DSS) tell how a manager can apply artificial intelligence in decision making for increasing their efficiency.*

[**Key Words**: decision, skills, efficiency, programmed and non-programmed, semi-structured, information, systems, models, artificial intelligence]

1. INTRODUCTION

As a manager, a person has to plan, organize, lead and control all the activities of the respective division or even the organization. Planning is the most prior task of managers. Without proper plans, expected goals cannot be achieved; and plans are successfully implemented through wise, accurate and timely decisions. Actually decision making is an integral part of planning.

The success of a manager mainly depends on his/her efficiency in decision making. Decision making is such a crucial thing that the managers have to give the most attention. We know about the three major skills[1] required of managers: conceptual and design skill, human skill and technical skill. This conceptual and design skill is highly essential for making timely and accurate decisions.

Managers are to take two types of decisions: programmed and non-programmed[2]. A programmed decision that is fairly structured or recurs with some frequency (or both); while a non-programmed decision is relatively unstructured and occurs much less often than a programmed decision.

So, the managers are to be very careful in case of non-programmed decisions. Business environment is changing very frequently due to globalization, technological advancements, competitions, economic conditions, demands and tastes of customers etc.; and all these are making the decision process very complicated. And it is clear that because of such changes, managers are to take

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non-programmed decisions very frequently. So, a manager should be well equipped with the new trends and intention in business arena. To be successful in non-programmed decisions, managers must need accurate and timely information as well as conceptual and design skill at the highest level.

Suppose a manager is very sound in conceptual and design skill, but s/he has not sufficient, timely and accurate information to face a non-programmed decision situation; what will happen? Will s/he succeed? Lack of information the manager will fail to solve the situation. Therefore, it is clear that only managerial skills do not ensure proper decision making, obviously, information plays a vital role.

Again think that a manager has accurate, timely and plenty of information, but not properly managed and in a much unstructured way to analyze and use, what will happen? Though having all the resources (information and skills), the manager will again fail to have to proper decision. Therefore, having information is not only enough for good decisions, it is necessary to manage those information in such a way that the managers can easily use them and can get the highest benefit in decision making.

Therefore, information should be gathered in structured forms or systems so that they can be analyze and use in a friendly manner. Here, the role of information systems introduces.

1.2 INFORMATION SYSTEMS

Information systems are those systems that deal with information. These systems ensure the availability of accurate, timely and essential information to the managers at different levels of the organizations.

Information systems can be defined as interrelated components working together to collect, process, store, and disseminate information to support planning, decision-making, coordination, control, analysis, and visualization in an organization[3]. Information systems contain information about significant people, places, and things within the organization or in the environment surrounding it.

An ideal information system usually collect and input of data resources, processing of data into information, output information product, storage of data resources and control the systems performance. All these activities helps managers in taking decision regarding their markets, investments, human resources, purchases, research and development, and business diversifications. These systems are often termed as management information systems or MIS.

1.3 ROLE OF INFORMATION SYSTEMS OR MIS IN DECISION MAKING

Through an information system, structured information are collected, processed and presented before the managers[4]. Thus, the managers are updated with changes and other issues necessary to take decisions. Such system just plays a supportive role as a digital clerk. It states the current situation and updates and changes. Managers are responsible to use them properly with their skills and wisdom.

So, such information system or MIS, whatever is called, is a tool to decision makers. It does not ensure the proper decision if the managers fail to use their skills and wisdom. For example, a production manager can easily know the availability resources (time, raw material, human resources etc.), profit contribution of different products and market demand of them from a structured information system. But if s/he fails to decide how many of different product/item to be produced, due to complicacy in estimation and calculations the organization will face a loss. Though the organization is providing sufficient, accurate and timely information to its managers, but due to use of intelligence, managers cannot take proper decisions. It is very usual that though managers are very sound in their position, but due to some complicated calculation and predictions, they are not getting expected results. But what will happen, if machine gives the decisions? It is proven that machines can calculate, estimate and predict without error, because they are programmed in that way. Just think about calculator; it can calculate continuously without error, but human will mistake when calculate manually for a long complicated period. It does not mean than machines are intelligent then human, because human are creating machines. But once human sets some logic and algorithms, machines work almost without error.

So, if information system can provide decisions with the help of artificial intelligence, it would be easier for managers to work on that. So, some computer systems should be developed that will apply some models on information to find the decisions. Thus the thinking about decision support system introduced. Decision support system or DSS is such an information or computer system that provides decisions, using data from MIS and analytical models with the help of artificial intelligence. This system just use the reasoning capabilities of human, in pre-determined structures, and through artificial intelligence systems provides necessary and accurate information.

2. DECISION SUPPORT SYSTEM (DSS)

No doubt that DSS is a totally computerized system, especially software, operated by artificial intelligence that provides decisions to the decision makers. Not necessarily that it will be a high cost or huge project, many simple and small DSS are often found, used by managers to have the most accurate decisions. Main thing is to use it in a proper way.

Decision support system can be defined as information system at the management level of an organization that combines data, sophisticated analytical models, and user-friendly software to support unstructured and semi-structured decision-making[5].

Decision support systems couple the intellectual resources of individuals with the capabilities of computer to improve the quality of decisions[6]. It is a computer-based support system for management decision makers who deal with semi-structured problems.

The DSS is under user control from early inception to final implementation and daily use. DSS are linked closely to existing corporate information flows. Often, however, DSS are isolated from major organizational information systems. DSS tend to be stand-alone systems, developed by end-user divisions or group not under central IS control, although it is obviously better if they are integrated into organizational systems when this is a functional requirement.

In simplest terms, DSS is such a mechanism that integrates information and decision models through sophisticated computer software, so that the end-users easily get the right decisions. Question is how it works?

2.1 HOW DSS WORK?

How does a calculator work? One inputs digits and gives algorithmic directions, and the machine provides answers. Very simple to say, but what occurs at the behind? That machine is well pre-programmed with logics and algorithms along with different scientific functions. When a person just puts accurate data and calls specific function to operate, it provides accurate and errorless result without any boringness. Just in that way, DSS works. Users put/arrange necessary data from TPS (Transaction Processing Systems) and/or MIS into a computer software, run a procedure (which is pre-set) and get the results; formula of decision support systems. Here, obviously some artificial intelligence analyzing those data with the procedure in a moment to find the solution.

DSS assist managers of different levels and functional areas in such decision situations which are unique, rapidly changing and not clearly specified in advance. They address problems where the procedure to get the solution may not be fully predefined in advance; and so, DSS is very helpful for managers in semi-structured decision situation. DSS usually use data from TPS and MIS (both are internal data sources), but in some cases, they collect information from external sources, such as economic trends, political factors, weather forecasts and changes, current share prices, competitors' offers and prices etc.

It is very clear that DSS have much more analytical capabilities than any other information systems. They are built explicitly with a variety of models to analyze data[7], or they condense large amounts of data into a form in which they can be analyzed by managers.

2.2 MODEL-DRIVEN DSS VS. DATA-DRIVEN DSS

Decision support systems can be classified into two categories; model-driven DSS and data-driven DSS[8]. Model driven DSS are primarily stand-alone systems that use some-type of model to perform "what-if" and other kinds of analyses; whereas data-driven DSS support decision making by allowing users to extract and analyze useful information that was previously buried in large databases.

Information of various categories; e.g. marketing and sales, financial, production, maintenance, purchase, research human resource etc., are collected through different systems and stored in some databases in predefined structure. Finally, the whole databases become very large. Though they have all necessary information, the decision makers face problem to find and focus on required information. Data-driven DSS is such a system that enables decision makers to extract necessary information. It may be an indexing system or search engine that easily meets the information requirements through computer software. For example, data-driven DSS can help a department store that has thousands of transactions daily, to find out the lowest product from its huge product line through search tool with computer software. Such DSS only help in finding the required data/fact, but not give any complete decision. But the story of model-driven DSS is something different and vast.

Through the model-driven DSS, the decision makers are allowed to use different analytical models on their huge databases to perform sensitivity analysis, statistical analysis, financial analysis etc. to get the accurate decisions. A computer software is developed where the necessary analytical models are built-in and the databases are linked with that software. Users arrange the necessary information, may through TPS (Transaction Processing System), MIS or even data-driven DSS, in that software and apply models to get decisions. Thus, the model-driven DSS work. American airlines use such model-driven DSS to set price and select route for their aircrafts. They have the information about the pressure of passengers in different routes, competitors' prices and cost involved in those routes. They use the information in DSS with relative models, and get the most competitive price and profitable routes.

Therefore, model-driven DSS is more effective in comparing to data-driven DSS for getting decisions. Artificial intelligence is widely used in model-driven DSS. The models that are used in such system are pre-set with logic and algorithms. This intelligent system just finds the accurate decisions through artificial human brain.

2.3 WHY TO USE ARTIFICIAL INTELLIGENCE IN DSS?

Artificial intelligence refers to an effort to develop machines that can reasons, behave, compare, and conceptualize. Successful artificial intelligence systems are based on human expertise, knowledge, and selected reasoning patterns[9].

No doubt that human brain is more powerful than machines. Human can store data thousands time more than machines. But problem is in recalling. Machines can recall data instantly, this is very important. Again, machines can calculate huge numbers simultaneously without any error, which is tough for human. Human get tired, whereas machines do not. For these reasons, machines are more accurate and dependable.

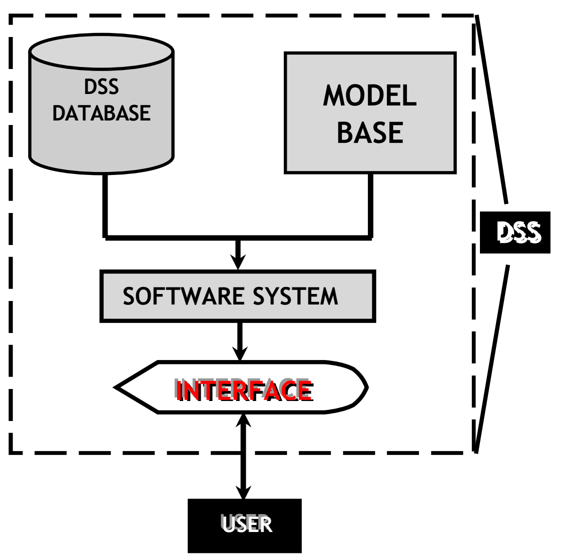
Four important capabilities are involved in human intelligence: reasoning, behavior, the use of analogy, and the creation and use of concepts[10]. A successful artificial intelligence can capture these capabilities. As said earlier, these systems are based on human expertise and reasoning pattern. Human sets logic for the most expected situations/conditions, defines the exact reasoning pattern for those and enriches with knowledge and expertise so that the machines can behave like human. Thus the artificial intelligence becomes very useful in decision support systems.

A manager with good conceptual and design skills cannot be always successful in decision making due some human like lacking; e.g. poor recalling, poor capabilities to use logic continuously. But if s/he gets the assistance of artificial intelligence, the problems can be overcome. This is the main reason behind the use of artificial intelligence in decision making though decision support systems[11].

Moreover, the model-driven DSS use extensive artificial intelligence, because such systems are based on different models. And these all models are developed and shaped for using with different data in different conditions by the human. Human cannot deal with different models simultaneously for decision making, but artificial intelligence enables DSS to do the same without error for the perfectionist in decision making.

3. DECISION SUPPORT SYSTEM MODEL

Different authors have developed different models of DSS. A very simple model of DSS is depicted bellow[12].



As the model shows, it has three major components; model base, DSS database, and software system. Users use the system through an interface.

DSS DATABASE

A collection of current or historical data from a number of applications or groups, organized for easy access by a range of applications[13]. The DSS database management systems protect integrity of data while controlling the processing that keeps the data current; it also saves historical data.

DSS do not create or update data, for that is not their purpose. Rather, they use live organizational data (from such systems as production and sales) so that individuals and groups are able to make decisions based upon actual conditions.

MODEL BASE

Model base is the collection of mathematical and analytical models that can easily be made accessible to the DSS users.

A model is an abstract representation that illustrates the components or relationships of a phenomenon[14]. A model can be a physical model (such as a model airplane), a mathematical model (such as an equation), or a verbal model (such as a description of a procedure to write up an order).

Perhaps the most common models available in model bases are libraries of statistical models. Such libraries usually contain the full range of expected statistical functions including means, medians, deviations, and scatter plots[15]. The software has the ability to project future outcomes by analyzing a series of data. Statistical modeling software can be used to help establish relationships, such as relating product sales to differences in age, income, or other factors between communities.

Among the most widely used models sensitivity-analysis[16] models that ask "what-if" questions repeatedly to determine the impact of changes in one or more factors on outcomes.

DSS SOFTWARE SYSTEM

The DSS software system permits easy interaction between the users of the system and the DSS database and the model base[17]. The DSS software system manages the creation, storage, and retrieval of models in the model base and integrates them with the data in the DSS database. The DSS software system also provides a graphic, easy to use, flexible user-interface that supports the dialogue between the user and the Decision Support Systems[18].

INTERACTION OF SOFTWARE SYSTEM WITH ARTIFICIAL INTELLIGENCE

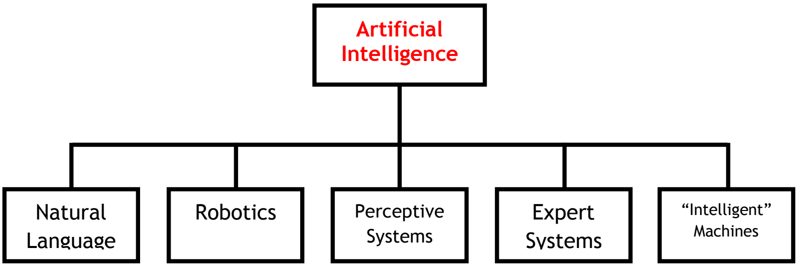
This software system is developed with the help of artificial intelligence. The software applies models on relevant data and gets the results. The software customizes the necessary models using artificial intelligence and then users decide which model is to use for the specific data to get the desired results. Thus, artificial intelligence is used in DSS.

4. ARTIFICIAL INTELLIGENCE

Artificial Intelligence is commonly defined as the effort to develop computer-based systems (both hardware and software) that behave as humans[19].

Such systems would be able to learn natural languages, accomplish coordinated physical tasks (robotics), utilize a perceptual apparatus that informs their physical behavior and language (visual and oral perception systems), and emulate human expertise and decision-making (expert systems)[20].

Such systems would also exhibit logic, reasoning, intuition, and the just plain common-sense qualities that we associate with human beings. Elements of artificial intelligence family are given bellow[21]:



Use of one or combination of two or more elements from the family enables the managers to make accurate decisions.

5. AN EXAMPLE

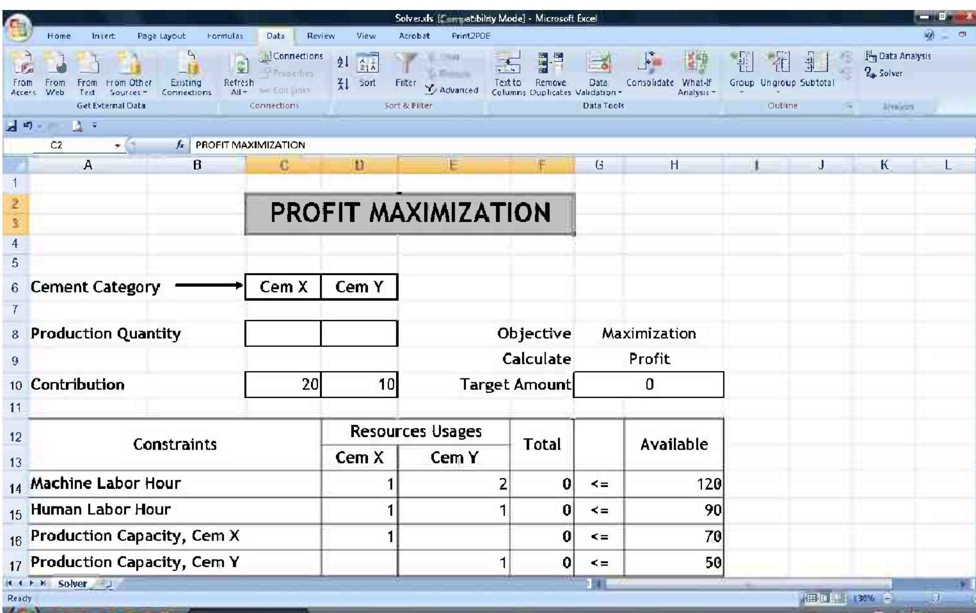
This is a story of a cement manufacturing company. The company manufactures cements of two categories; Cement X and Cement Y. Each bag of X contributes Taka 20 to the profit while Y contributes Taka 10. So, it is clear that as more as cement X is sold per day, the profit will be maximum. But due to the following constraints, the company is unable to sell cement X only:

- Daily machine hour available is 120; where 1 hour is required for each bag of X and 2 for Y.
- Daily labor hour available is 90; where both X and Y requires 1 hour each.
- The daily production capacity of X and Y are 70 and 20 respectively.

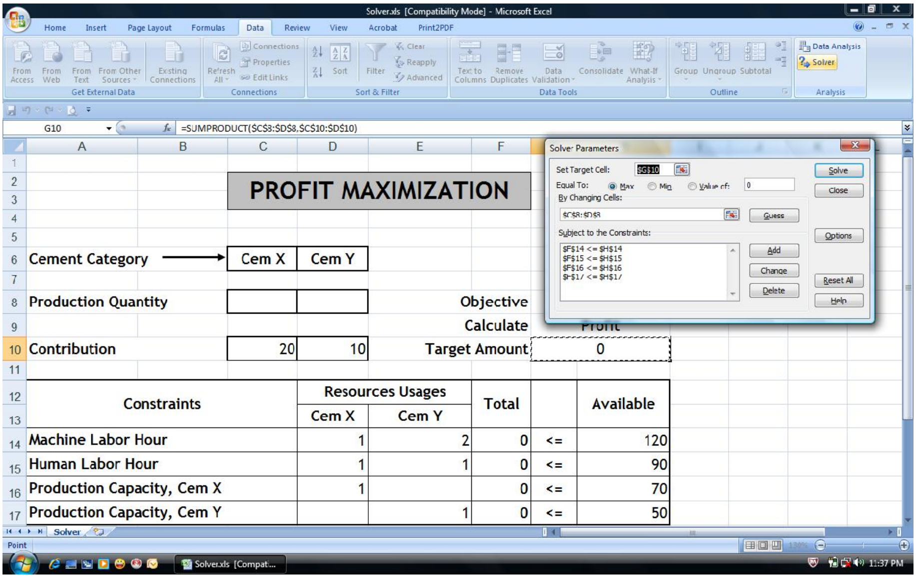
Under this circumstance, the company has to decide how many of cement X and cement Y to be produced to maximize the daily profit.

To solve the above decision problem, the production manager of the company decides to use a DSS for the efficient decision.

The manager arranged all the data in MS Excel (Figure-01). First s/he created to different column for two categories. S/he put the contribution to profit but left the cells blank for adjusting the required quantities of two separate cements. Then s/he arranged all the three constraints and put necessary formula (sumproduct function) in the total usages cells and in targeted profit cell according to model.

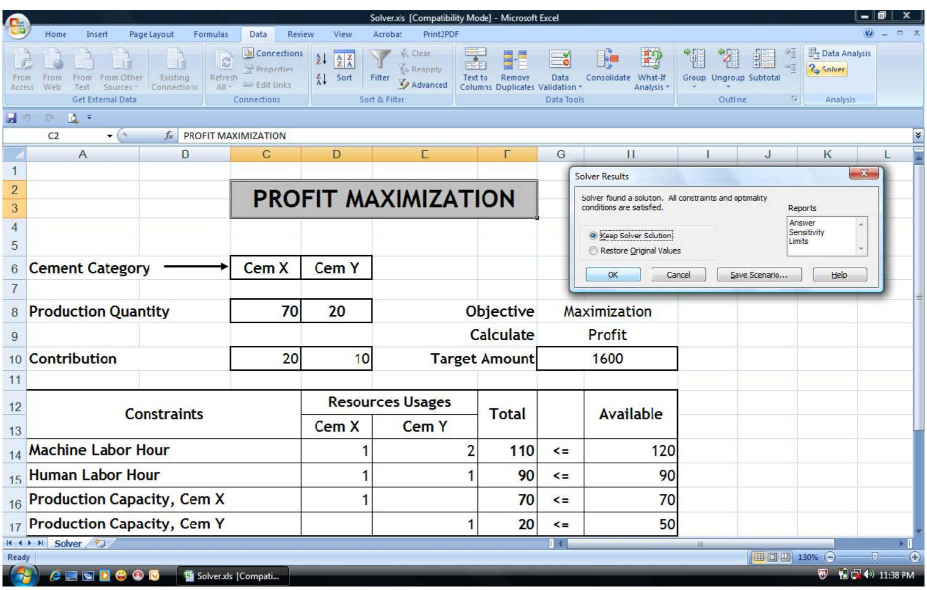


After arranging all the things, s/he applied solver (a tool for solving linear programming issues) according to figure-02 in following page.

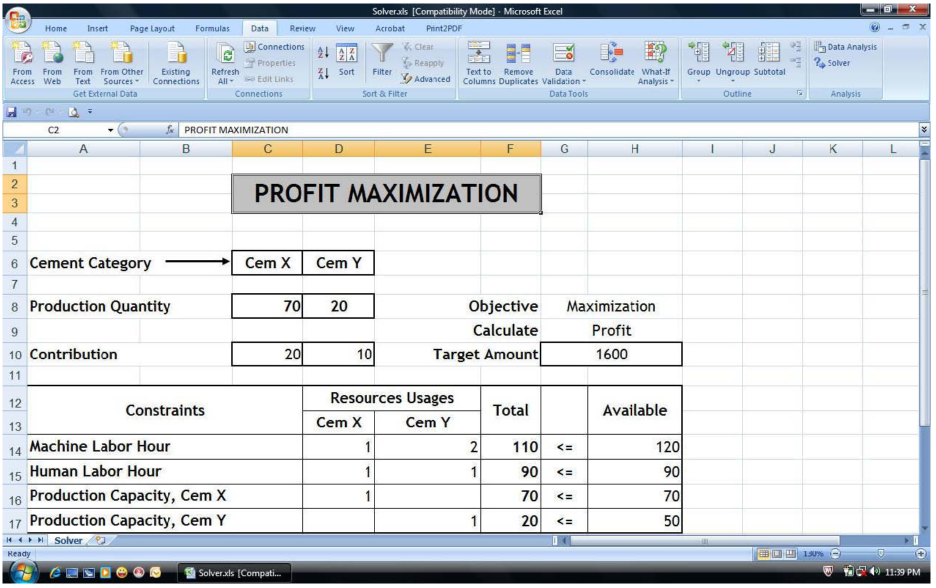


Then s/he defined target cell for the maximum profit, cells for adjusting required quantities, and finally added all the production constraints, and clicked on **Solve**.

After that the following figure (figure-03) appeared.



When s/he clicked on "Keep Solver Solution", the following figure (figure-04) appeared.



Finally, the manager got the decision to produce 70 bags of X and 20 bags of Y to get the maximum profit in a day, i.e. Taka 1,600.

Thus a DSS can provide managers with efficient decision with the help of models using artificial intelligence.

6. LIMITATIONS OF USING DSS MODEL

Though decision support systems help managers in efficient decision making, sometimes due to usages of models make the whole decision process complicated and often results in errors. Such drawbacks are caused due to following factors[22]:

MODEL COMPLEXITY

Models used in DSS are often very complex and demand high analytical capabilities to handle. There may be hundreds of alternative decisions, which may take years to evaluate. A model evaluates those alternatives within few seconds, so it is clear enough that how complex jobs are executed through models.

COST OF BUILDING MODEL

An automated decision system often requires huge investment, which may be unaffordable to the organizations.

ERRORS IN MODELS

Errors in data, or errors in equations, or misrepresentation or interpretation of data, equations and outputs may result in a wrong decision.

7. CONCLUSION

Both information and models affect the managers in making efficient decisions. A manager is successful when s/he is able to manage semi-structured and unstructured decision situations. No doubt that information is the primary requirement of the managers for solving the said problems. They need sufficient, timely and organized information for the efficient decisions.

But only information may limit managers in decision making, if the situations are too complex and dynamic. Then the managers need something more with the information. Such something may be models of decision making that can be used with the help of artificial intelligence.

The decision support systems are all about the usages of artificial intelligence in decision models in a computer system that generates the most effective decisions. Though there are few limitations of DSS, but the proper uses of it ensure the efficiency in decision making.

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SME FINANCING AND ITS IMPACT ON FINANCIAL PERFORMANCE: A CASE STUDY ON DHAKA BANK LTD

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1. INTRODUCTION

Bangladesh is recognized as one of the most densely populated, least developed and agro-based countries in the world. In different international ranking published in the newspaper, Bangladesh occupies a very well position in corruption. But once, Bangladesh was famous for her glorious past too like in producing silk clothes. Thus, there are many opportunities to transform the problematic areas of Bangladesh into prospects. The name of one of the ways of transformation can be SME.

1.1 BACKGROUND

According to Ahmed (2006), SME development, one of the instruments of employment and income generation, human development and poverty alleviation, export promotion, stimulation of private ownership, competition and entrepreneurship and hence the driving forces behind the growth of a vibrant industrial market economy, has generated considerable interest among the policymakers, academics, business circle and the international donor agencies in recent times. The concept of SME is not new in Bangladesh but there is a lack of consciousness among people especially among most financial institutions in regards of cooperation.

Small and medium enterprises (SMEs) have long been considered as the principal driving force of the economy of Bangladesh. The biggest impediment to SMEs is the lack of sufficient capital needed to operate business. Most businesses often have to start with their own savings or by borrowing from friends and relatives, with bank financing coming later. Banks remain extremely reluctant to lend to small scale entrepreneurs who do not have any startup equity, despite sound business models. A World Bank (WB) paper titled “Bank financing for SMEs around the world”, which used data from 91 banks from 45 countries, reports banks are less exposed and charge higher interest rates and fees to SMEs relative to large firms. A number of studies using firm-level survey data have shown that SMEs not only perceive access to finance and the cost of credit to be greater obstacles than large firms do, but these factors also constrain SME performance more than in large firms. However, the WB found through its survey of banks that most banks (80 percent or more), independent of where they operate and of ownership type, perceive the SME segment to be large with good prospects (The Daily Star, April 17, 2009).

Dhaka Bank Limited is one of the well –reputed private commercial banks in Bangladesh that started SME financing from the year 2003.The current study attempts to explore the current situation of SME financing through performance analysis and if there is any impact of SME financing on the financial performance of Dhaka Bank Limited.

1.2 STATEMENT OF PROBLEM

In the industrial sector, the Small and Medium Enterprise (SME) is widely believed to be the potential engine of economic growth of Bangladesh. According to the National Private Sector Survey of Enterprises in Bangladesh(2003), the SME sector accounts for around 40 percent of gross manufacturing output,80 percent of industrial employment, and 25 percent of the total labor force in this economy. The survey estimated that micro, small, and medium enterprises contributed around 20–25 percent of GDP. The sector was found to encompass about 79,754 establishments, of which 93.6 percent were small and 6.4 percent medium (ADB, 2004). Despite the significant contribution of SME sector to the economy, this sector has been seriously suffering from the limited access to financial services. The enterprises in this sector are not small enough to get credit facilities from MFIs and at the same time not large enough to get loans from formal financial institutions. (Bangladesh Bank, 2006).

Investment is very much essential for the growth of any industry and increased facilities in obtaining credits can enhance that growth. Finance is needed at the starting phase of a business as well as at the enduring phases. The entrepreneurs require mainly three types of finances, namely- (i) equity capital - to finance assets at the start of a business; (ii) debts – to refinance assets; and (iii) working capital – to maintain the day-to-day activities. However, the access to financing is recognized as the leading obstacle to SSI growth in Bangladesh, alike most other developing and under-developed countries (Rubayat, 2009).According to one statistics published by Bangladesh Bank, out of total SME loan outstanding, the stake of private commercial banks are decreased from 18.11% in December 2008 to 16.33% in December 2009(Bangladesh Bank Monthly Update, February, 2010).

Again, according to a statistics published in The Daily Star on December, 03, 2010, the amounts of disbursed loan in the SME sector were more than Tk.10,000 crore, more than Tk. 12,000 crore and about to Tk. 14,000 crore in January-March,April-June and July-September quarters respectively that indicates, though the amount of loan disbursement is increasing, yet, the rate is very sluggish.

Bangladesh Bank annual report for fiscal 2006-07 revealed that, higher growth of the Small and Medium Enterprises (SMEs) can help cut poverty to a satisfactory level by eliminating various prejudices against labour intensive and creating jobs for the skilled manpower in the SME sector. The report said, the key reasons behind the SMEs are not entering into manufacturing are financial constrains, dismal state of utilities, technology and policy discriminations. On the others hand, banks and others financial institutions generally prefer large enterprise clients because of lower transition costs, and greater availability of collateral (The New Nation, January 02, 2008).Though Bangladesh Bank has taken different schemes and is refinancing private commercial banks at lower rate from its IDA and ADB fund to lend SME, not all banks are yet interested in SME lending because of several excuses like lack of collaterals, higher management cost in monitoring SME loan etc.

In a seminar on "Present and Future of SME Banking" held in Dhaka, FBCCI administrator Syed Manzur Elahi said that, private commercial banks would have to largely shift toward providing small and medium-sized loans given the risks associated with corporate banking. He also said that, corporate banking is profitable, but risks remain. If a corporate loan gets defaulted, it may involve Tk 1.0 billion that a private bank can hardly afford. On the other hand, a small or medium enterprise takes loans of manageable size. So, private banks will ultimately have to attach increased importance to SME banking (The Financial Express, January 17, 2008).

Thus, this study has tried to explore the current situation of SME financing through performance analysis in Dhaka Bank Limited (DBL), and if there is any impact of SME financing on the financial performance of Dhaka Bank Limited.

1.3 PURPOSE OF THE STUDY

The broad purpose of this report is to explore the current scenario of SME financing through performance analysis in Dhaka Bank Limited and if there is any impact of SME financing on the financial performance of Dhaka Bank Limited (DBL). Moreover, some specific purposes of this exploratory research are –

1. To identify the present situation of SME financing in Bangladesh
2. To know the growth, trend and contribution of SME financing in total loan outstanding, total costs of fund, total interest income, total non-performing loan and total number of borrowers for five year from year 2005 to year 2009
3. To find out if there is any significant difference between the mean of ROA of before and after the introduction of SME in DBL's lending portfolio
4. To sketch the problems and issues related to SME lending by DBL and finally,
5. To suggest steps to improve further in SME lending by DBL

1.4 METHODOLOGY

1.4.1 Sources of Data

Both primary and secondary sources were used for collecting information.

1.4.2 Methods of Data Collection

Different methods were followed for collecting information under primary and secondary sources. These are:

1.4.2.1Primary Sources

For primary sources of information, direct observation, face to face in depth Interview, and telephone interview were conducted.

1.4.2.2 Secondary Sources

For secondary information, SME related journals and articles of Government/ Non-government organizations and previous works on the related issues of SME were utilized.

1.4.3 Instruments for Collecting Information

For in-depth interview, information were collected through unstructured questionnaire and for published data, different search engines like Google scholar, yahoo etc., searching in the library etc. were done.

1.4.4 Selection of Interviewee

For the purpose of this report, relevant personnel from the management team were selected on the basis of the work experience in Dhaka Bank Ltd. for the interview. Also, those who are and were directly involved in credit division and in SME lending in Dhaka Bank Limited SME units and in Dhaka Bank Local Office, such as credit officers of DBL Local Office,SME unit and credit operation division, Head of SME unit etc. were taken under consideration for interview.

1.4.5 Sample Selection

To see if there is any impact of SME financing on financial performance of DBL, data have been divided into two major groups. One is, Return on Assets (ROA) of the years before the introduction of SME financing in DBL's total lending portfolio and ROA of the years after the introduction of SME financing. A sample of 5 years are selected to observe the impact analysis of SME financing on the total financial performance of DBL.The ROAs of year 1998 to year 2002 have been selected for pre SME financing study and ROAs of year 2005 to year 2009 have been selected for post SME financing study. Here the samples are called independent samples because observation has been done on ROA of Dhaka Bank Limited at two different points of time.

1.4.6. Data Analysis

Collected data are analyzed by using MS. Excel 2007 and to find out if there is any impact of SME financing in the financial performance of Dhaka Bank Limited, independent samples t-test has been done through SPSS 12, to show whether there is any impact of SME financing on ROA.

1.5 HYPOTHESES

In order to know whether any significant impact of SME financing is there in the financial performance of Dhaka Bank Limited, ROA is used to measure DBL's financial performance and following null and alternative hypotheses are initiated:

H_0: There is no impact of SME financing on ROA of Dhaka Bank Limited.

H_1: There is a significant impact of SME financing on ROA of Dhaka Bank Limited.

1.6 SCOPE

This study has been done on the SME lending performance of Dhaka Bank Limited. Only the supplier side is considered for analysis in this study.

1.7 LIMITATIONS

Two limitations were there in carrying out this study.

- One of the obstacles was availability of limited information. The concept of SME is, though not new, but the implementation of it is yet to be structured in Dhaka Bank. Though Dhaka Bank started SME lending from 2003, negligible exposure were found in SME in initial years. If at least ten years' data would be available, post-SME financing analysis would be done more meaningfully and trend of SME lending in DBL would be much understandable. Again, Dhaka Bank Limited itself started its operation from June 1995.If at least 10 years' data would be available,pre-SME financing study would be done more meaningfully and hypothesis testing would be much more accurate and understandable.

- Getting appointment of top level management such as the board of directors was not possible because of their inflexible schedule.

2. LITERATURE REVIEW

2.1 SME Banking

In the SME sector of Bangladesh, studies done by foreign and national experts undertook some of the notable ones are; Uddin (2008), Chowdhury (2007), Miah (2006), Ahmed (2004). Uddin (2008) has stated that the economic efficiency and overall performance of the SMEs especially in the developing countries are considerably dependent upon macroeconomic policy environment and specific promotion policies pursued for their benefit.

Ahmed (2004), based on estimates of BSCIC, suggests that currently there are more than 600,000 small and cottage enterprise in Bangladesh. However more than 3 million micro enterprises are also in operation. In SME taskforce report (2006), it has been argued that manufacturing industries or enterprises are synonymous with small and cottage industries. SEDF (2003) reports that, more than 90% of all industrial units are SMEs. According to Chowdhury (2007) , in context of Bangladesh, SME is characterized by low capitalization and limited assets, geographical diversity and high mortality, poor credit knowledge, very limited access to formal source of credit, cash intensity in transactions, very limited record keeping habit, poor financial disclosure on account of tax issues, high risk perception has led to high borrowing costs.

The recent study of SEDF (2006) reinforces the earlier findings that SMEs have limited access to bank financing. It shows that about two third of the SMEs did not approach for banks for loans. Most of them approached Banks for Working Capital Loans. Not all of them were granted loans. It takes about two months on an average to get loan sanctioned. The findings of SEDF (2006) reinforces that finance is a major constraint (SME Taskforce Report 2006).Research has shown that access to external finance is the most significant factor contributing to the growth of small firms (Brown et al., 2003). Unlike large firms that have ready access both to debt and equity markets, the small firms have nowhere else to go but the banks

In the commercial banking industry there is a growing recognition that SMEs not only represent a viable market segment but that their needs are different and frequently underserved (Kai, 2009). The study reported here identifies the factors that SMEs (specifically, home building contractors) consider in selecting a banking partner.

2.2 Loan Outstanding

Molyneux and Thorton(1992), applying the model used by Bourke(1989) undertook the study to banks in a eighteen European countries. They used standardized accounting data published by the International bank credit Analysis Ltd (IBCL) to account for differences in accounting policies. The results show strong positive relationship between concentration of total loan outstanding that is bank's asset and the interest income.Ali Abdula (1994) on the other hand, using two accounting measures of banks performance (return on assets and return on equity) in Bahrain commercial banks found out that, bank size measured by total loan outstanding and individual products' loan to total loan ratio directly related to the bank's profitability.

2.3 Interest Income

Elizabeth (2004) and Diamond (1989) have revealed that, interest income is one of the major tools to measure the financial performance of commercials banks. They have also mentioned that, the higher the interest income, the lower is the cost of fund and the lower is the cost of fund, the more cost effective is the bank.Again, Stein(2002) and Tarawneh(2006) have mentioned that, besides net income, interest income is important for private commercial banks in performance analysis because, interest income reveals the profit generating ability of commercial banks as loan is the main income generating asset for banks.

2.4 Cost of Fund

The bank's relative cost of funds should positively influence profitability (Evan off and Fortiers, 1998; and Agu(1992)). Also, the greater the cost of funds, the lower the profit rate (Agu, 1992). Hays,Lurgio and Gilbert(2009) examined small and medium sized banks from the early 1970's until deregulation occurred in the early 1980's. They found that, profitable banks had lower interest and non interest expense than less profitable banks. In addition, the more profitable banks had lower cost of funds, greater use of transactions deposits, more marketable securities and higher capital levels. High performance banks during this period made higher quality loans, held proportionately more capital, invested more in securities (especially long-term) and relied on lower cost funding sources compared with the average small bank.

2.5 Nonperforming Loan

Bank performance may determine the risk taking behavior of managers. Banks with high profitability are less pressured to revenue creation and thus less constrained to engage in risky credit offerings. However, inefficient banks are tempted to grant and to engage in more uncertain credits to defend their profitability and meet the prudential rules imposed by the monetary authorities (Boudriga,Boulila Taktak,Jellouli;2009). Godlewski (2004) using the return on assets (ROA) as a proxy for performance, shows that banks profitability negatively impacts the level of nonperforming loans ratio. Ford and Oslon (1978) asserted that the elements beyond the control of management contribute modestly in the banks rate of return. They reported that the financial determinants of high performance banks are: interest on deposit that is cost of deposit, individual product loan to total loans, income from loan, loan loss provision to earning asset etc.

2.6 Number of Borrowers

A study by Sinkey (2002) reveals that, banks should utilize their relationship in order to get good bunch of borrowers because no matter what the amount is, the highest number of borrowers ensures bank's service quality and future good financial performance. Again Tarawneh (2006) in his study on financial performance of commercial banks has mentioned that number of borrower is one of the important factors to measure financial performance of commercial banks. Diamond (1989) and Diamond (1991) have examined the role of reputation acquired in banking relationships. In Diamond's model, the adverse selection and moral hazard problems in the pool of potential borrowers result in initially high equilibrium interest rates. Over time, some borrowers default and others repay their loans. As the banking relationship develops, the payment histories accumulate to form reputations, which reduce the lender's adverse selection and moral hazard problems. This process results in lower interest rates to firms acquiring reputations as non defaulting borrowers. Thus, number of borrower is vital for present and future financial performance of commercial banks.

2.7 ROA (Return on Assets)

Hays, Lurgio and Gilbert (2009) have mentioned in their study that, Banks' performance can be measured by return on assets (ROA).In their study, the situation was to measure community bank's performance after the "Subprime Crisis" .The determinants of performance of Greek banks during the period of EU financial integration (1990-2002) has been examined by Kosmidou (2008). He used an unbalanced pooled time series dataset of 23 banks. For bank performance measurement, he used the ratio of return on assets (ROA). Banking sector in Saudi Arabia has been examined by Ahmed and Khababa (1999). Among the three measures used in evaluating banks' performance, one the measures was ROA.

Wum et al.,(2007) investigated the impact of factors such as: financial development measured by financial interrelation ratio(FIR), the level of moneterization measured by M2/ GDP and the level of capitalization, size, age of the bank, business orientation measured by the ratio of non-interest income, and per capita GDP on the Chinese commercial banks. The results indicated that the higher the levels of financial development, the better ROA performance for banks. The results also indicated a positive impact of per capita GDP on bank performance. However, a negative impact of size and business orientation on the ROA was found. In their study,Wum et al.(2007) used ROA to measure the financial performance of commercial banks.Unal et al., (2007) conducted a comparative performance analysis between the Turkish state-owned and private commercial banks during the period 1997-2006. They used net profit-loss, return on assets (ROA) and return on equity as proxies to measure profitability.

3. SME IN BANGLADESH: PRESENT SCENARIO

3.1 Defining Small and Medium Enterprises (SME) in Bangladesh

The Small and Medium Enterprises worldwide are recognized as engines of economic growth. The commonly perceived merits often emphasized for their promotion especially in the developing countries like Bangladesh include their relatively high labor intensity, dependence on indigenous skills and technology, contributions to entrepreneurship development and innovativeness and growth of industrial linkages.

Definition

According to the latest circular of Bangladesh Bank (Date – 26/05/2008), the definition of Small & Medium Enterprise sector is given below:

Small Enterprises – Small enterprises refer to those enterprises which are not any Public Limited Companies and which fulfill the following criteria-
Service Concern- Having an investment of Tk. 50,000 to Tk. 50, 00,000 excluding land & building and / or employing up to 25 workers.

Business Concern - Having an investment of Tk. 50,000 to Tk. 50, 00,000 excluding land & building and / or employing up to 25 workers.
Manufacturing Concern - Having an investment of Tk. 50,000 to Tk. 1,50,00,000 excluding land & building and / or employing up to 50 workers.

Medium Enterprises – Medium enterprises refer to those enterprises which are not any Public Limited Companies and which fulfill the following criteria-
Service Concern- Having an investment of Tk. 50,00,000 to Tk. 10,00,00,000 excluding land & building and / or employing up to 50 workers.
*Business Conce*rn - Having an investment of Tk. 50,00,000 to Tk. 10,00,00,000 excluding land & building and / or employing up to 50 workers.
Manufacturing Concern - Having an investment of Tk. 1,50,00,000 to Tk.20,00,00,000 excluding land & building and / or employing up to 150 workers.
SMEs in Bangladesh are also defined for purposes of industrial policies by Ministry of Industries (MOI). Historically, this definition has been in terms of fixed investment brackets, and a dual mode definition is in place, separate for manufacturing establishments, and service establishments.
According to the Industrial policy 2005, small and medium enterprises shall be categorized using the following definitions:

a. Manufacturing enterprise

***Small enterprise* –** an enterprise should be treated as small if, in current market prices, the replacement cost of plant, machinery and other parts / components, fixtures, support utility, and associated technical services by way of capitalized costs (of turnkey consultancy services, for example), etc, excluding land and building, were to be up to tk. 15 million;

Medium enterprise - an enterprise would be treated as medium if, in current market prices, the replacement cost of plant, machinery and other parts / components, fixtures, support utility,and associated technical services by way of capitalized costs (such as turnkey consultancy services), etc, excluding land and building, were to be up to tk. 100 million;

b. Non-manufacturing enterprise

Small enterprise – an enterprise should be treated as small if it has less than 25 workers, in full time equivalents;

Medium enterprise - an enterprise would be treated as medium if it has between 25 and 100 employees
The Industrial Policy 1999 provides the following size classification scheme of the industries:

Large Industry: Employs more than 100 workers and/or has capital assets in excess of Tk. 30 Crore.

Medium Industry: Employs between 50 and 99 workers and/or has fixed capital assets in excess of Tk. 10 Crore but less than Tk. 30 Crore.

Small Industry: Employs less than 50 workers and/or have capital assets less than Tk.10 Crore.

Cottage Industry: Engaged in manufacturing activities with mostly family members.

3.2 Constraints in the Growth of SMEs

Alam (2006) observed that availability of finance is a major constraint to formation and growth of SMEs in Bangladesh. Banks are unwilling to expand their SME credit portfolio because they do not consider SME lending an attractive and profitable undertaking. This is so because SMEs are regarded as high risk borrowers because of their low capitalization insufficient assets and their inability to comply with collateral requirements of the banks. Administrative costs are also higher because close monitoring and supervision the SME operation becomes necessary. A study (2004) by Micro Industries Development Assistance and Services (MIDAS) revealed that sources of finance are mostly friends and family member in case of SME. MIDAS tried to identify the sources of funds of SMEs. These are:

Table 1: Sources of Fund for SMEs in Bangladesh

Sources of funds	Percentage of finance
Informal sector	41%
Family members	20%(interest free) 4% (with interest)
NGO	17%
Bank	18%

Source: *MIDAS (2004)*

According to Hallberg (2002), a stable macro-economy, an open trade and investment regime, and a competitive financial sector are argued to be most essential ingredients for a vibrant private sector. But with a law and order situation below the optimum level, corruption well above the level of acceptance and unstable political situation, the domestic environment of Bangladesh do not come to any help, rather hinders the prosperity of SME in this country.

In a paper by Montoo(2006), titled *The Role of Private Sector in Bangladesh*, 25 issues were identified as impediments to growth of the SME sector. The issues are-lack of long-term capital availability through banking channels; lack of long-term capital in the capital market and bond market, dumping of products, largely by smuggling, inefficient support infrastructure, widespread tariff anomalies; high customs' duties; complicated and cumbersome customs procedures, aggravated by extensive arbitrary powers exercised by customs officers; low productivity and a highly politicized labour sector; inconsistency among different government policy statements; an inefficient and corrupt judicial system; widespread corruption; political instability, leading to frequent strikes; high interest rates in the banking sector; a lack of credible statistics; lack of transparency and accountability in government decision making; lack of an appropriate education system to support an industrial economy; too many holidays;a slow process of deregulation and privatization; lack of an industry-friendly social and political environment; lack of good governance; lack of regulatory bodies; an uneven playing field between the private sector and the public sector; lack of local technology; lack of research and development; Government control on public utilities.

Again, according to Ahmed and Chowdhury (2009), at present SME sector is facing a lot of problems in Bangladesh. The author mentioned some of the following constraints that are creating obstacles on the way of SME growth:

a) Resource Scarcity

In Bangladesh scarcity of raw materials deters the ability of SME to be export oriented and limits its ability to reach to more advanced stages of international business. Also, a high rate of duty is placed in the import of basic raw materials for SMEs (The Daily Star, June 4, 2010).

b) High Employee Turnover

Due to limited growth of SME, most of the skilled employees leave SMEs. Levy (2003) observed that SMEs are knowledge creators but poor at knowledge retention.

c) Absence of Modern Technology

One of the main barriers for the development of SME in Bangladesh is inadequate technologies. Many SMEs have failed to adopt modern technology.

d) Poor Physical Infrastructure

Inadequate supply of necessary utilities like electricity, water, roads and highways hinder the growth of SME sector. Moreover unfavorable geographical conditions increase the transportation cost.

e) Financial Constraints

Availability of finance hinders the growth of SMEs in Bangladesh. Bangladeshi bank considers SMEs as high risk borrowers because of their inability to comply with the bank's collateral requirements. Only about 15-20% of the owners of SMEs own any immovable property. Bankers issue loan on the basis of ownership of immovable property as collateral risk. As a result it automatically excludes rest 80% SME's from the list of privileged clients of the banks. Whatever collateral SME's can manage gets used up in talking the term loan leaving them with no means to seek working capital loans from banks. Because of low access to institutional financing SME's rely on inefficient financing services from informal sources.

f) Lack of Uniform Definition

In Bangladesh, the definition of SME has changed overtime in different industrial policy announced by the government in different year. Absence of uniform definition makes the formulation and implementation of SME policy difficult.

g) Lack of Information

Miah (2006) has observed that SMEs have very limited use of information technology (IT). Accounting package is used by 1-2% of the SMEs. The use of computers is revealed by say 15% of the SMEs, while the use of the internet for business purposes applies to say 8-10% of SMEs.

h) Lack of Entrepreneurship Skills

Conservative attitude towards risk, lack of vision, ability to make plan and implementing those hinder the growth of SME in Bangladesh.

i) Participation of Women Entrepreneurs

Equality of opportunity is a major problem for SME. Female entrepreneurs are treated discriminately. They are not well represented in business organization. Government does not provide adequate institutional assistance for women entrepreneurs.

j) Access to Market and Lack of Awareness Regarding the Importance of Marketing Tool

For SME, owing a retail space is very expensive in the major cities in Bangladesh. As a result many customers are not interested to buy products and services from SMEs because they cannot judge the quality until they physically examine the product. In most of the cases, SMEs in Bangladesh are not able to use the Integrated Marketing Communication (IMC) tools. But these tools play the role of important stimulus to motivate the customers and retain them. The country does not have enough marketing capability and resources to invest in marketing.

k) Bureaucracy

Wang (1995) observed that the inadequate government supports are top ranking constraints for SMEs. Unnecessary layers of Bureaucracy and red-taps reduce the competitiveness of SME and raising the cost of transactions and operations.

l) Absence of Transparent Legal System

The absence of an effective and transparent legal system discourages SMEs in exploring into risky ventures of business. There are a number of unnecessary formal requirements to start and run business that create high compliance costs and become barriers to SME development, growth and market entry.

m) Lack of Commitment to Innovation and Customer Satisfaction

Ernesto (2005) stated that to keep in pace with international competition, firms of all size are challenged to improve and innovate their products processes constantly. But in Bangladesh, SMEs are still not relating the importance of satisfying and retaining customers by offering novel and desired benefits.

n) Lack of Quality Assurance

Govt. has failed to frame a national quality policy, provide adequate support systems and establish a national quality certification authority. As a consequence SME of Bangladesh has failed to ensure the quality of their products and services both in local and international market.

o) Lack of Research and Development Facilities

It is observed that investment in R&D is still negligible in SME sector.

p) Fierce Competition with the Cheaper Foreign Goods

Fierce competition with the cheaper goods of China, Taiwan, Korea, India, and Thailand also poses threat to SME in Bangladesh.

3.3 Contribution of SME in the Economy of Bangladesh

In 2003, the International Consultancy Group (ICG) of the UK, in collaboration with the Micro Industries Development Assistance and Services (MIDAS), conducted the National Private Sector Survey of Enterprises in Bangladesh. The survey results drew the conclusion that there were approximately 6 million Small and Medium Enterprises (SMEs), which included enterprises with up to 100 workers employing a total of 31 million people, equivalent to 40 % of the population of the country of age 15 years and above. The survey also found that the industrial structure of SMEs consisted of primarily wholesale and retail trade and repairs (40 per cent), production and sale of agricultural goods (22 percent), services (15 percent), and manufacturing only (14 per cent). Thus the survey brought out the fact that the large untapped potential for expansion in manufacture and production could be exploited (or contributing more significantly to the national economy (Ahmed& Chowdhury, 2009).

Table 2: Contribution of SME to GDP of Bangladesh

Numbers of workers	Total Contribution to GDP (Taka)	Percentage of Total contribution
0-1	193 996 555 714	26
2-5	379 663 897 358	51
6-10	73 120 983 681	10
11-20	45 183 240 157	6
21-50	33 960 498 076	5
51-100	15 138 922 373	2
Total	**741 064 097 360**	**100**

Source: *ICG/MIDAS Survey, 2003* ***Note:*** *US $ 1 = BDT 69.00*

The above table 2 shows the contribution of SME in the GDP of Bangladesh, according to a survey of MIDAS(2003).Another imperative findings of the survey under discussion was that, SMEs contributed BDT 741 ($ 12.5) billion i.e. nearly 25 per cent of the GDP (BDT 2,996 billion) in 2003. It is reflected from this survey that enterprises employing 2-5 workers contribute 51 percent share of the total SME contribution to the economy, followed by 26 percent by those having only one worker and 10 per cent by those having 6-10 workers. For LDCs like Bangladesh, SMEs are a highly cost-effective route for industrial development.

It is observed from table 2 that micro enterprises run by up to 10 workers contribute the most which is 87% of the total contribution from SMEs to GDP of Bangladesh. It is also observed that micro enterprises run by more than 21 workers contribute about 7% of total contribution from SME to GDP of Bangladesh.

The following table 3 provides the information regarding sector wise contribution of SMEs to GDP. It is reflected from the table that manufacturing sector contributes the highest contribution in GDP i.e., 38%. It is also observed from the table that agriculture and wholesale and retail sector contribute more than 22 percent each in the GDP of Bangladesh.

Table 3: Sector wise contribution of SME in GDP of Bangladesh (Tk.)

Sector	Total Contribution to GDP (Tk.)	% of Total Contribution
Agriculture	177 729 637 637	24
Fishing	32 872 674 464	4
Manufacturing	282 344 700 575	38
Construction	7 196 460 200	1
Wholesale and Retail trade and Repairs	171 335 861 390	23
Hotels and Restaurants	28 599 263 975	3
Transport, Storage and Communication	8 950 171 356	1
Real state, Renting and Business activities	13 771 436 794	2
Education	151 808 506	1
Health and Social Work	2 743 049 893	1
Other Service activities	15 632 094 785	2
Total	**741 327 159 609**	**100**

***Source**: ICG/MIDAS Survey, 2004* ***Note:** US $ 1 = BDT 69.00*

According to the above table 3, it is clear that, other than agriculture, manufacturing and wholesale and retail trading business, other sectors have minimal contribution. Thus, there are lots of opportunities to develop other sectors in SMEs.

Table 4: Growth Pattern of SME

Year	Growth Percentage of Small Enterprises
2001-2002	7.69
2002-2003	7.21
2003-2004	7.45
2004-2005	7.93
2005-2006	9.21
2006-2007	10.28

***Source:** Bangladesh Economic Review 2006-2007*

The above table 4 shows the growth pattern of SME. It is observed that during 2001-2002 to 2004-2005 in every financial year the growth rate of SME is about

7%. In 2005-2006 the growth rate was 9.21%. The highest growth was in 2006-2007 i.e., 10.28%

Table 5: Growth Pattern of Manufacturing Sector

Year	Growth Percentage of Manufacturing Sector
1972-2005	6.4
2001-02	5.48
2002-03	6.75
2003-04	7.10
2004-05	8.19
2005-06	10.77
2006-07	11.19
2015	Expected Growth 15

Source: *Bangladesh Economic Review 2006-2007*

The above table 5 shows the growth pattern of manufacturing sector. It is observed that the average growth during 1972 to 2005 was 6.4%. During 2001-2002 to 2006-2007 the highest growth was in year 2006-07 i.e., 11.19%. It is also observed that during 2002-2003 to 2005-2006 in every financial year the growth of manufacturing sector was more than 6%.

4. BACKGROUND OF DHAKA BANK LIMITED (DBL)

The economy of Bangladesh has been experiencing a rapid growth since the '90s. Industrial and agricultural development, international trade, inflow of expatriate Bangladeshi workers' remittance, local and foreign investments in construction, communication, power, food processing and service enterprises ushered in an era of economic activities. Urbanization and lifestyle changes concurrent with the economic development created a demand for banking products and services to support the new initiatives as well as to channelize consumer investments in a profitable manner. A group of highly acclaimed businessmen of the country grouped together to responded to this need and established Dhaka Bank Limited in the year 1995.

Dhaka Bank Limited is a scheduled bank that was incorporated under the Companies Act 1994.It started its operation on July 1995 with a target to play the vital role on the socioeconomic development of the country. Within this short time the bank has been successful in positioning itself as progressive and dynamic financial institution in the country. This is now widely acclaimed by the business community, from small entrepreneur to big merchant and conglomerates, including top rated corporate and foreign investors, for modern and innovative ideas and financial solution. Aiming at offering commercial banking service to the customers' door around the country, The Bank has 50 branches across the country and a wide network of correspondents all over the world through its foreign correspondents. The Bank has plans to open more branches in the current fiscal year to expand the network.

5. PERFORMANCE ANALYSIS OF SME AND ITS IMPACT ON FINANCIAL PERFORMANCE OF DHAKA BANK LIMITED (DBL)

5.1 Performance Analysis of SME in terms of Loan Outstanding, Interest Income, Cost of Fund, Nonperforming Loan and Number of Borrowers

SME has already been integrated in the lending portfolio of Dhaka Bank Limited since the year 2003.The management of Dhaka Bank believes that, though DBL has pursued conservative policy in business expansion till now, it is quite aggressive in SME banking since the year of SME's inception in the product portfolio. Thus, to prove DBL management's belief, it is necessary to identify the contribution SME lending has put in the total financial performance of DBL.For performance analysis of SME, five crucial parameters are selected. These are –

- Loan Outstanding
- Interest Income
- Cost of Fund
- Non Performing Loan
- Number of Borrowers

A five year time period starting from year 2005 to 2009 has been selected to recognize the contribution of SME in total financial performance of DBL.

5.1.1 Loan Outstanding

Loans are the main assets of commercial banks. In case of Dhaka Bank also, there is no question of dissimilarity. The higher the amount of loan outstanding, the higher is the possibility of interest income and at the same time, the higher is possibility of loan default. Yet, the higher amount of loan outstanding reflects the relationship building ability of a bank. It also reflects the business expansion of a bank.

From a five year study on the loan outstanding performance of Dhaka bank Limited, an increase in the amount of loan outstanding is observed. The year-end amounts of SME loan outstanding and total loan outstanding from year 2005 to year 2009 are mentioned in the following table. According to the table, though the amount of SME loan outstanding have been increased, the amount of total loan outstanding were not increased in the same rate as of SME.It means, over the five years,DBL has started focusing on SME and may be some other areas of lending did not get more attention. As a result, overall loan outstanding were increased at a slow rate.

Dhaka Bank started SME lending from the year 2003.Yet, year 2005 can be observed as a depressing year for SME loan outstanding compared to the total amount of loan outstanding. Following table 6 shows the year-end amount of SME loan outstanding and total loan outstanding from year 2005 to 2009.

Table 6: SME Loan Outstanding, Total Loan Outstanding the Contribution of SME Loan Outstanding in Total Loan Outstanding

Figure in Million Tk.

Types	Years				
	2005	**2006**	**2007**	**2008**	**2009**
Total Loan Outstanding	23,372	34,049	39,972	49,698	52,910
SME Loan Outstanding	45	252.54	752.96	1,766.75	2,366.8
SME Loan Outstanding as % of Total Loan Outstanding	0.19%	0.74%	1.88%	3.55%	4.47%

Source: *Secondary*

From the above table, it is revealed that only tk. 45 million SME loans were outstanding in the year ended at 2005 that was only 0.19% of total outstanding loan amounting tk. 23,372 million. In the year end at 2006, the SME loan outstanding amount was suddenly soared to tk. 252.54 million that is noticeable.In year 2006, the growth in SME loan outstanding was 461.20% that is astonishing. But the growth in total loan outstanding amount was steady as it was just 45.68% more than from the previous year compared to the growth of SME loan outstanding. In 2006, the SME loan outstanding was 0.74% of total outstanding loan, having a 289.47 %[{(0.74%-0.19%)/0.19%}*100%=289.47%] enhancing contribution in % of total loan outstanding.

Again, in the year 2007, the growth of both SME and total loan outstanding were lower than those of the year 2006.Though SME loan outstanding was increased by 198.15% (amounting tk. 500.42 million) to Tk. 752.96 million in year 2007, total loan outstanding was increased by only 17.40 %(amounting Tk. 5923 million) to Tk. 39,972 million from Tk. 34,049 million in year 2006.Again,the growth of SME loan outstanding in year 2007 was 57.035% [{(461.20%-198.15%)/461.20%}*100%=57.035%] lower than the growth of SME loan outstanding in year 2006. The growth of total loan outstanding was 61.91% [{(45.68%-17.40%)/45.68%}*100%=61.91%] lower than the growth of total loan outstanding in year 2006.

The contribution of SME loan outstanding in total loan outstanding has also been increased in a decreasing manner. The contribution of SME loan outstanding was 1.88% in total loan outstanding which was higher than that of the previous year. But the percentage (%) increase in the contribution was 154.05 %[(1.88%-0.74%)/0.74%* 100%=154.05%] that was lower by 135.42 %(289.47%-154.05%=135.42%) than the contribution change of year 2006.

In the year 2008, the growth in SME loan outstanding was further lower. Compared to the year 2007; year 2008 can be documented with a suppressing growth of 134.64 %(amounting tk. 1013.79 million) reaching to tk. 1766.75 million in SME loan outstanding but a 24.33 % growth(amounting tk. 9726 million) reaching to Tk.49,698 million in total loan outstanding. In the year 2008,SME loan outstanding growth was 32.05% [{(198.15%-134.64%)/198.15%}*100%=32.05%] lower than the growth of that in year 2007 and total loan outstanding attained a 39.83 %[{(24.33%-17.40%)/17.40%}*100%=39.83%] higher growth than that of the year 2007 that was a positive sign. The involvement of SME loan outstanding was 3.55% in total loan outstanding in the year 2008 that was 88.83 %[{(3.55%-1.88%)/1.88%}*100%= 88.83%] higher than the previous year's contribution.

In order to find out the share of SME loan outstanding in total loan outstanding in the year 2009, it is found from table 6 that SME loan outstanding grew by only 33.96% (amounting tk. 600.05 million) getting to Tk. 2366.8 million that was 4.47% of the total loan outstanding which grew by only 6.46% (amounting tk. 3212 million) getting to tk. 52,910 million. The growth of SME loan outstanding in year 2009 was 74.78% [{(134.64%-33.96%)/134.64%}*100%=74.78%] lower than the growth of SME loan outstanding in year 2008.Again,in year 2009 the growth of total loan outstanding was 73.44% [{(24.33%-6.46%)/24.33%}*100%=73.44%] lower than the growth of total loan outstanding in year 2008.

5.1.2 Interest Income

As loan is the most vital asset for a commercial bank or lending is the primary service of commercial banks, the prime source of income of a commercial bank is interest income from loan outstanding. This is of no exception for Dhaka Bank also. The interest income from SME loan outstanding over the years and interest income on the total loan outstanding from the year 2005 to 2009.A five year period starting from year 2005 to 2009 has been selected for analysis.

According to the table 7, DBL earned 6.75 million tk. interest incomes from SME lending in the year 2005 that was 0.23% of the total interest income amounting Tk. 2897 million. Again, in the year 2006, the interest income from SME lending jumped to tk. 40.41 million contributing a share of 0.93% in total interest income amounting tk. 4342 million.

Table 7: Interest Income from SME Loan, Interest Income from Total Loan and Contribution of SME Interest Income in Total Interest Income

Figure in Million Tk.

Types	Years				
	2005	**2006**	**2007**	**2008**	**2009**
Interest Income from Total Loan	2,897	4,342	5,636	7,171	7,466
Interest Income from SME Loan	6.75	40.41	120.47	300.35	390.52
SME Income as % of Total Interest Income	0.23%	0.93%	2.14%	4.19%	5.23%

Source: *Secondary*

A jumped growth trend in interest income from SME can be proved for the year 2006.Similar to the SME loan outstanding growth mood in the year 2006; interest income from SME achieved a 498.66 %[{(40.41-6.75)/6.75}*100%=498.66%] growth on its previous year's income. But the rate of growth in total interest income was diminutive compared to the growth rate in SME interest income. In year 2006, growth rate of interest income from total loan outstanding over the year was 49.88% only. In year 2006, the contribution of interest income from SME in total interest income rose by 304.35 %[{(0.93%-0.23%)/0.23%}*100%=304.35%] that was a positive sign of contribution.

In the year 2007, interest income from SME attained a lower growth than that of the year 2006.Though the amount of interest income from SME increased, yet, a 198.15% growth (amounting tk. 80.06 million) was supporting to the year 2007 amount (reaching to the amount 120.47 million tk.) that was 60.26% [{(498.66 %-198.15%)/498.66%}*100%=60.26%] lower than that of the previous year. In year 2007, interest income from SME was 2.14% of total interest income amounting tk. 5636 million, that was130.11% higher [{(2.14%- 0.93%)/0.93%}*100%=130.11%] than the contribution SME interest income made on total income in 2006.But, the growth of SME interest income contribution to total interest income in year 2007 was lower by 57.25% [{(304.35%-130.11%)/304.35%}*100%=57.25%] than the growth in contribution of SME interest income to total interest income of the year 2006.

In year 2008, the interest income from SME loan outstanding over the year increased by 149.31 %(amounting tk. 179.88 million) to tk. 300.35 million that grabbed 4.19% share in total interest income of DBL.But the enhancement of total interest income on loan outstanding in 2008 was only 27.24%(amounting tk. 1535 million) reaching to tk. 7171 million. The contribution of SME interest income to total interest income rose by 95.79% only [{(4.19%-2.14%)/2.14%}*100%=95.79%] that was 34.32 %(130.11%-95.79%=34.32%) lesser than the contribution growth of the year 2007.Again, in year 2009, a 30.02% increase in interest income reaching to tk. 390.52 million generated by SME loan can be observed in the above table.This SME interest income held 5.23% of total interest income generated by total loan outstanding over the year 2009.Though SME interest income increased by 30.02%, total interest income grew by only a minimal rate of 4.11% reaching to tk. 7466 million. The contribution of SME interest income to total interest income was higher by 24.82% [{(5.23%-4.19%)/4.19%}*100%=24.82%] in year 2009,that was again lower by 70.97% (95.79%-24.82%=70.97%) than the contribution growth of the year 2008.

5.1.3 Cost of Fund

Cost is one of the main concerns for business organizations that work to make profit. If cost is higher compared to revenue, profit will be lower and vice versa. It is true for Dhaka Bank also whish is a profit making service organization. To measure the financial performance of a commercial bank, cost of fund is one of the pivotal issues because commercial banks' prime source of fund is deposits collected from general public and different business organizations. The rate of interest that commercial banks provide to the depositors creates main expense for the banks. Some overhead costs are added with the interest rate paid to the depositors and thus banks calculate their cost of fund for a particular year. Banks therefore apply the cost of fund rate on their loan outstanding over the year to obtain the taka amount of cost of fund for their different lending product. Thus the formula for calculating cost of fund is:

Average Cost of Fund= Average rate of Interest paid to the Depositors + Rate of Overhead Cost

Cost of Fund (Volume) = Avg. Rate of Cost of Fund x Total Loan Outstanding at the year-end

The above formula is provided by the Dhaka Bank Limited where they have not included the cost of equity capital. Dhaka Bank does not include equity capital in calculating their cost of fund. The reasons given by the management of DBL are, firstly, it is DBL's policy to calculate cost of fund to recognize profits from different lending product as the portion of equity capital is very negligible compared to the other source components of total fund available.Secondly,it is the policy of Bangladesh Bank for the foreign private banks(FPB) to deposit the entire amount of equity capital in Bangladesh Bank where the FPBs are unable to utilize the equity capital.Though,there is no written policy for the private commercial banks(PCB) to put their entire equity capital,yet,PCBs have to put certain amount of their depository capital as CRR(cash reserve ratio) and SLR(Statutory Liquidity Reserve) in Bangladesh Bank that is equal or higher than the total amount of equity capital.Thirdly,the amount of equity capital is very lower or negligible compared to deposit that is the major source of fund.

All the commercial banks that finance SMEs get some sort of refinancing from Bangladesh Bank. The rule is, a commercial bank can claim to get refinancing facilities from Bangladesh Bank based on the amount that are taken by customers as SME loan from that commercial bank. According to Bangladesh Bank SME refinancing scheme, the commercial banks get the claimed amount of SME loan outstanding at a bank rate of 5%.As per the rule, Dhaka Bank also gets refinancing facilities from Bangladesh bank but only few amounts of the claimed are collected from Bangladesh Bank at a rate of 5%.

Table 8: Refinanced Amount in SME Loan Outstanding

Figure in Million Tk.

	Year				
	2005	**2006**	**2007**	**2008**	**2009**
SME Loan Outstanding	45.00	252.54	752.96	1,766.75	2,366.80
Refinanced Loan Outstanding	0	0	27	155.87	235.73
Refinanced Loan outstanding % of total outstanding	0.00%	0.00%	3.59%	8.82%	9.96%

Source: *Secondary*

The above table 8 shows the amount of year-end SME loan outstanding, year-end refinanced amount of loan outstanding and refinanced amount of loan as % of total SME loan outstanding.

According to table 8, it is apparent that, in year 2005 and 2006, there was no refinancing amount outstanding on total SME loan outstanding. Thus, Dhaka banks had to bear normal cost of fund on their SME loan outstanding. In year 2007, 2008 and 2009, Dhaka bank has some amount of refinancing amount outstanding that was amounting tk. 27 million, tk. 155.87 million and tk. 235.73 million respectively. The refinancing amounts outstanding in those years were 3.59%, 8.82% and 9.96% of SME loan outstanding at the year-end of 2007, 2008 and 2009 respectively. Thus, for the portion of refinanced amounts, cost of funds were comparatively lower than bank's overall cost of fund.

Following table 9 shows the amount of cost of fund in SME loan and the amount of cost of fund in total loan from year 2005 to 2009.According to the table, in year 2005, the volume of cost of fund in SME loan outstanding was found to be tk. 4.58 million that was 0.19% of cost of fund in total loan outstanding amounting to tk. 2376.93 million. A swelling growth was existing in the year 2006 in cost of fund of year-end SME loan outstanding.

Table 9: Cost of fund for SME Loan, Cost of Fund for Total Loan and Contribution of SME Cost of Fund in Total Cost of Fund

Figure in Million Tk.

	Years				
	2005	**2006**	**2007**	**2008**	**2009**
Cost of Fund(Vol.) for Total Loan	2,376.93	3,806.68	4,516.84	5,730.18	5,788.35
Cost of Fund(Vol.) for SME Loan	4.58	28.23	84.01	196.85	250.25
Cost of Fund(SME) as % of Total Cost of Fund	0.19%	0.74%	1.86%	3.44%	4.32%

Source: *Secondary*

As per the above table 9, it is revealed that, in the year 2006, the cost of fund for SME loan outstanding was bumped in to tk. 28.23 million having a growth of 516.93% over and above the amount of cost of fund of SME in year 2005.Compared to that, the cost of fund for total loan outstanding attained only a 60.15% growth (amounting tk. 1429.75 million) and reached to taka 3806.68 million. In the year 2006, though cost of fund of SME had higher growth, still, in total cost of fund, it was able to grip only 0.74% share that was 289.47%.[{(0.74%-0.19%)/0.19%}*100%= 289.47%] higher than that of the share on total cost of fund in year 2005.

In the year 2007, the growth rate of SME cost of fund was 197.56 %(amounting tk. 55.78 million) than that of the cost of fund volume for SME in previous year

2006.The SME cost of fund amounting to Tk. 84.01million thus achieved a share of 1.86% in the total cost of fund amounting tk. 4516.84 million in year 2007.The cost of fund for SME grew a lower of 61.78 % [{(516.93%-197.56%)/516.93%}*100%=61.78%] in year 2007 compared to the growth of the year 2006.Also,the growth in contribution that SME cost of fund made in total cost of fund in 2007 was lower by 138.12%{(1.86%-0.74%)/0.74%}*100%=151.35%;(289.47%-151.35%=138.12%)] compared to the contribution growth made in year 2006. On the other hand, total cost of fund grew by only 18.66 %(amounting tk. 710.16 million) and reached to tk. 4516.84 million. In year 2007, total cost of fund grew lesser by 68.98% [{(60.15%-18.66%)/60.15%}*100%=68.98%] from the growth of that in the year 2006.
It has been divulged in year 2008 that, the cost of fund for SME attained a growth of 134.31% (amounting tk. 112.84 million) over the year 2007 amount and reached to tk. 196.85 million. The total cost of fund in year 2008 enjoyed a bit higher growth of 26.86% that was 43.94% [{(26.86%-18.66%)/18.66%}*100%=43.94%] higher than the growth of that in year 2007.In comparing cost of fund contribution of SME in total cost of fund, it is found that, in year 2008, SME cost of fund grasped a 3.44% share in total cost of fund that was 84.95% [{(3.44%-1.86%)/1.86%}*100%=84.95%] higher than the contribution of year 2007.Yet, the SME cost of fund contribution growth made in year 2008 was lower by 66.40% (151.35%- 84.95%) than the contribution growth made in the year 2007.

Lastly, in year 2009, the growth in SME cost of fund was 27.13 %(by tk. 53.4 million) reaching to tk. 250.25 million that was 79.80% [{(134.31%-27.13%)/134.31%}*100%= 79.80%] lower than the growth in SME cost of fund in year 2008..The growth in total cost of fund in year 2009 was only 1.02%(by tk. 58.17 million) reaching to tk. 5788.35 million, that was lower by 96.20% [{(26.86%-1.02%)/26.86%}*100%=96.20%] compared to the growth achieved in the year 2008.The SME cost of fund grabbed a 4.32% share in total cost of fund in year 2009 that was 25.58% [{(4.32%-3.44%)/3.44%}*100%=25.58%] higher than the contribution made in year 2008.But contribution growth made by SME cost of fund to total cost of fund in 2009 was lower by 59.37%(84.95%-25.58%=59.37%) than that of the growth made in year 2008.

According to the above table and elucidation, it is clear that the cost of fund for SME grew a somewhat steady manner though the increase in the growth in SME cost of fund was higher in initial years. It can be easily commented that, the contribution of SME cost of fund was increasing in the total cost of fund in year 2005 to 2009.

5.1.4 Non-Performing Loan

A non-performing loan is a loan that is in default or close to being in default that is, a loan that is not earning income and: (1) full payment of principal and/or interest is no longer anticipated, (2) principal or interest is 90 days or more delinquent, or (3) the maturity date has passed and payment in full has not been made. *(source:www.wikipedia.com)*

According to Bangladesh Bank vide BRPD circular No.07 dated 03.11.04, regulation no. 13, the non-performing loan is divided into four categories. These are:

a) SMA or Specially mentioned Account
b) SS or Substandard Loan
c) DF or Doubtful Loan
d) BL or Bad and Loss

Generally, interests on loan outstanding are calculated on daily basis but are charged to the clients' loan account on quarterly basis. But bank when calculating total interest income, applies per annum interest rate on the year end or 31st December loan outstanding.

SMA or Specially mentioned Account

When interest on loan or principal amount of loan is not paid by the borrower by 90 days from the due date, that loan account is called specially mentioned account or SMA.

SS or Substandard Loan

When interest on loan or principal amount of loan is not paid by the borrower by180 days from the due date, that loan account is called substandard account or SS.

DF or Doubtful Loan

When interest on loan or principal amount of loan is not paid by the borrower by 270 days from the due date, that loan account is called doubtful loan account.

BL or Bad and Loss

When interest on loan or principal amount of loan is not paid by the borrower by 1 year or more from the due date, that loan account is called bad and loss account.

Banks generally maintain certain amount of provision in fear of having non-performing loan. But bank has to write-off that bad and loss loan by debiting provisioned amount for that particular loan.

The following table 10 states the total amount of non-performing loan and amount of non-performing loan in SME from year 2005 to year 2009. According to the following table, the total amount of non-performing loan was tk. 351 million and surprisingly, there was no non-performing loan in SME in the year 2005.In the second year of study that is, in year 2006, though the amount of non-performing loan grew by 57.83% (amounting tk. 203 million) compared to the year 2005 and reached to tk. 554 million, the non-performing loan in SME was absent.Thus,both in year 2005 and year 2006, the contribution of SME in total non-performing loan was nothing or "zero" which is a noticeable point.

Table 10: Non-Performing Loan in SME, Total Non-Performing Loan and Contribution of SME Non Performing Loan in Total Non Performing Loan

Figure in Million Tk.

Types	Years				
	2005	**2006**	**2007**	**2008**	**2009**
Total Non Performing Loan (NPL)	351	554	1,258	1,908	2,946
Non Performing Loan (NPL) in SME	0.00	0.00	5.00	17.10	100.00
NPL(SME) as % of Total NPL	0.00%	0.00%	0.40%	0.90%	3.39%

***Source:** Secondary*

In the year 2007, the total amount of non-performing loan grew by 127.08% or by tk. 704 million and reached to tk. 1258 million. The growth in total non-performing loan in year 2007 was 119.75% [{(127.08%-57.83%)/57.83%}*100%=119.75%] higher than that of the year 2006.As there was no non-performing loan in SME, the growth in SME non-performing loan was absent from the schedule. But from year 2007, SME non-performing loan started to contribute in the total non-performing loan and in 2007 the contribution was 0.40%.

A growth of 242% was experienced in SME non-performing loan in the year 2008.In year 2008, SME non-performing loan increased by amounting tk. 12.1 million and reached to tk. 17.10 million. On the other hand, a lower percentage increase was there in total non-performing loan in year 2008 compared to the year 2007.In 2008, a 51.67% increase (amounting 650 million tk.) in total non-performing loan was found that was 59.34% [{(127.08%-51.67%)/127.08%}*100%=59.34%] lower than the growth of year 2007.The contribution of SME non-performing loan in total non-performing loan was 0.90% that was 125%[{(0.90%-0.40%)/0.40%}*100%=125%] higher than the contribution % in the year 2007.

In the year 2009, a 484.80 %(amounting 82.9 million) increase in non-performing loan was revealed in SME that was tk. 100 million. This growth of increase was 100% [{(484.80%-242.00%)/242.00%}*100%=100%) higher than the growth of increase in SME non-performing loan in the year 2008.Again, the growth in total non-performing loan was 54.40% (amounting 1038 million tk.) in year 2009 and the amount of total non-performing loan reached to tk.2946 million. The growth in total non-performing loan was 5.28% [{(54.40%-51.67%)/51.67%}*100%=5.28%] higher than the growth of that in year 2008.In the year 2009, the contribution of SME non-performing loan to total non-performing loan was 3.39% that was 276.67% [{(3.39%-0.90%)/0.90%}*100%=276.67%] higher than the contribution made in year 2008.Again, the 276.67% growth in the contribution made by SME non-performing loan in total non-performing loan was higher by 151.67% (276.67%-125%=151.67%) than that of the contribution made by SME in year 2008.

From the above table 10, it has already been exposed that the growth of SME non-performing loan and total non-performing loan were not smooth. Rather, in case of SME, the first two years of study faced a vacuum growth as there were no nonperforming loan in year 2005 and year 2006.After that, in year 2007, a small amount of loan in SME was non-performing that was a good sign but as the year passed by, from 2008, non-performing loan started to shadow SME in an increasing manner that was quite upsetting for Dhaka Bank. The disrupting rate of increase in total non-performing loan and the year-by-year higher contribution of SME non-performing loan to total non-performing loan are really alarming for Dhaka Bank.

5.1.5 Number of Borrowers

It is ultimate the customer or client or borrower who is the "Golden Goose" for commercial banks because from borrower comes income. As commercial banks are profit organization, profit is the ultimate goal. This profit or net income is one of the crucial ways to prove that the firm is performing well. But the business of the bank is other way around. Following table 11 shows the number of borrowers in SME loan and the number of borrowers in total loan from the year 2005 to 2009.According to the following table, there were 116 numbers of SME borrowers and 9358 number of total loan borrowers in Dhaka Bank Limited in the year 2005.

Table 11: Number of Borrowers in SME Loan, Number of Borrowers in Total Loan and Contribution of SME Borrowers in Total Number of Borrowers

Figure in Number

Types	Year				
	2005	**2006**	**2007**	**2008**	**2009**
Total Number of Borrower	9,358	12,649	15,420	22,751	27,572
Number of Borrower in SME Loan	116	443	1,282	1,475	1,600
No. of SME Borrower in Total No. of Borrower	1.24%	3.50%	8.31%	6.48%	5.80%

Source: *Secondary*

In the year 2005, the contribution that SME made in terms of number of borrowers was 1.24% in total number of borrowers. Again, in year 2006, the number of SME borrowers grew by 282% and reached to 443 numbers. But the growth in total number of borrowers was much depressing because it grew only by 35% and reached to 12,649 numbers. In year 2006, the contribution made by SME to total number of borrowers was 3.50% that was 182.26% [{(3.5%-1.24%)/1.24%}*100%=182.26%] higher than the previous year's contribution.

In the year 2007, total number of borrowers grew by only 22% reaching to 15,420 numbers. The growth in total number of borrowers was 37.14% [{(35%-22%)/35%}*100%=37.14%] lower than the growth of that in the year 2006.Again, the number of SME borrowers grew by 189% reaching to 1,282 numbers that was 32.98% [{(282%-189%)/282%}*100%=32.98%] lower than the growth of that in the previous year. The contribution of SME borrowers in total number of borrowers was 8.31% that was 137.43% [{(8.31%-3.50%)/3.50%}*100%=137.43%] higher than that of the contribution made in year 2006.Thus, the contribution growth in year 2007 was 44.83%[182.26% -137.43%=44.83%] lower than the contribution growth of SME borrower in total number of borrowers in year 2006.

In the year 2008, a huge fall in the growth of number of borrowers in SME was present. As per the above table, SME number of borrowers grew by only 15% in 2008 and reached to 1,475 numbers. The growth in 2008 was 92.06% [{(189%-15%)/189%}*100%=92.06%] lower than the previous year's growth in number of SME borrowers. Again, the growth of total number of borrowers was a bit higher than the previous year's growth. In 2008, total number of borrower grew by 48% (by 7,331 numbers) to 22,751 numbers of borrowers. The growth in total number of borrower was 118% [{(48%-22%)/22%}*100%=118%] higher than that of the previous year's growth. The contribution made by SME number of borrowers in total number of borrowers in 2008 was 6.48% that was lower by 22.02% [{(8.31%-6.48%)/8.315%}*100%=22.02%] that the previous year's contribution.

In the year 2009, the number of SME borrowers grew further low than the growth achieved in year 2008.The number of SME borrowers grew by only 8% and reached to 1600 numbers in 2009 that was 46.67%[{(15%-8%)/15%}*100%=46.67%] lower than the growth of that of year 2008.Again the total number of borrowers also grew by only 21 % (4,821 numbers) to 27,572 numbers in 2009 that was 56.25% [{(48%-21%)/48%}*100%=56.25%] lower than the growth of that in the year 2008.The contribution made by SME number of borrowers in total number of borrowers was 5.80% that was lower by 10.49% [{(6.48%-5.80%)/6.48%}*100%=10.49%] than that of the contribution made by SME borrowers in 2008.

According to the above table and clarification, the total number of borrowers are increasing at a fluctuating rate from year 2005 to year 2009.An increasing trend is revealed in the SME number of borrowers from year 2005 to year 2009.But the growth of increase was slower in those years.

Besides the above five parameters to analyze the performance of SME financing, based on the different articles' reference, ROA has been used to measure the financial performance of the bank as a whole. As the hypothesis is related to the study of ROA of pre SME financing period from year 1998 to year 2002 and post SME financing period from year 2005 to year 2009, both periods' ROA analyses have been done in the following to understand the situation of ROAs, their growths and their trends in pre SME financing and post SME financing period.

5.2 Return on Assets (ROA) Analysis

ROA or return on assets in the ratio of net income and average total assets. Tarawneh (2006), and Townsend et.al (2001) have shown that ROA can be used as the measure of financial performance of a private commercial bank. In other study of Elizabeth (2004), ROA is used as a measure of financial performance of private commercial banks. Thus in this study also, ROA is used as the prime measure of financial performance of Dhaka Bank Limited. Following table 12 and table 13 shows the ROA values for year 1998 to 2002 and year 2005 to year 2009 respectively.

Table 12: ROA from Year 1998 to Year 2002

	Year				(Figure in %)
	1998	**1999**	**2000**	**2001**	**2002**
ROA	0.69	0.99	1.49	1.52	1.23

Source: *Secondary*

According to table 12, ROA of Dhaka Bank was increasing from year 1998 to year 2001 but in year 2002, ROA was decreased a bit. Correlating to table 12, figure 1 shows the growth of ROA of Dhaka Bank from year 1999 to year 2002.

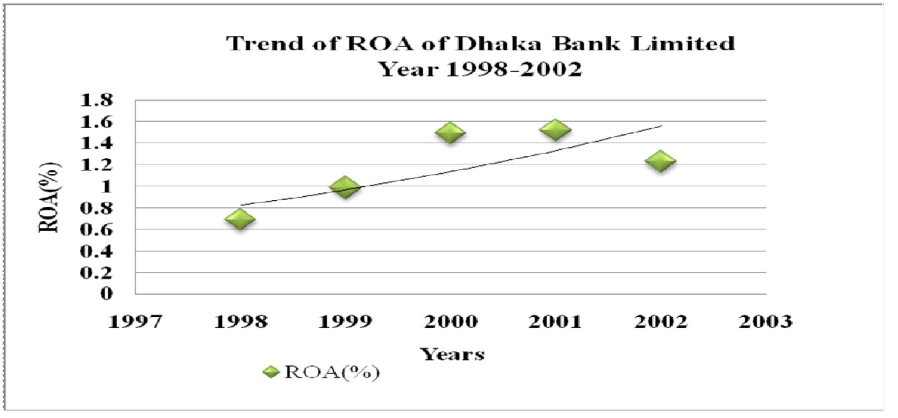

Figure 1: Trend of ROA of DBL (Year 1998 - Year 2002)

The above figure 1 shows the trend of ROA from the year 1998 to year 2002.According to the above trend graph, an increasing or upward movement is revealed in ROA from year 1998 to year 2002.Though the trend line has touched only one point of ROA in year 1999, other points are not that much far away than the trend line. Though, the ROA of year 2002 grew in a decelerating mood compared to the growth of ROA in other years from 1998 to 2002, the trend line is showing an accelerative progress in those years.

Table 13: ROA from Year 2005 to Year 2009

	Year	(Figure in %)			
	2005	**2006**	**2007**	**2008**	**2009**
ROA	1.4	1.22	1.23	1.18	1.29

Source: Secondary

The above table 13 shows the ROAs from the year 2005 to year 2009.According to the above table, the ROA figures were both increased and decreased over the year 2005 to year 2009.For e.g., in the year 2005, the ROA was 1.4% but the ROA decreased in year 2006 and reached to 1.22%.Again, in 2007, ROA was 1.23% but in 2008, ROA decreased to 1.18% and so on.

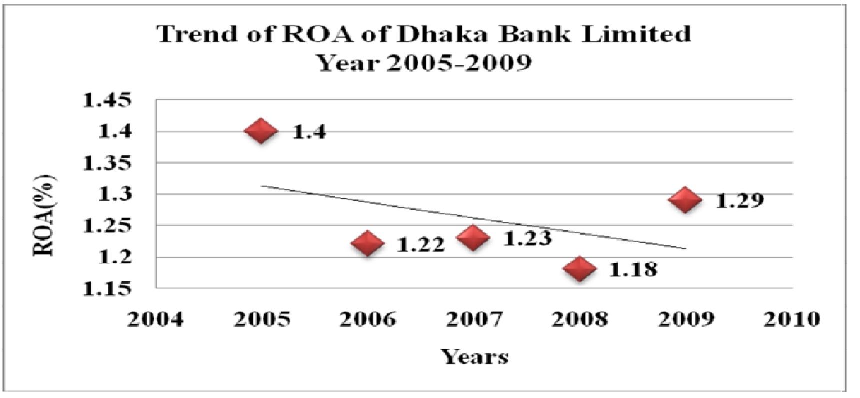

Figure 2: Trend of ROA of DBL(Year 2005 - Year 2009) Source: Secondary

The above figure shows the trend of ROA from the year 2005 to year 2009.If all the points on the above figure 2 would be added, a curvy movement could be found. But the trend line did not touch any single point and reveals a decreasing trend in the value of ROAs from a 2005 -2009 period. Among all the outliers, the nearest point of the trend line is the ROA value of the year 2007.

5.3 Hypothesis Testing

For testing the hypothesis mentioned in chapter 1, analysis of "Independent Sample t-test" has been done with ROA of Year 1998 to Year 2002 and ROA of Year 2005 to Year 2009 respectively with SPSS 12 .The result are shown below through table 14 and table 15.:

Table 14: Group Statistics

	Introduction of SME financing	N	Mean	Std. Deviation	Std. Error Mean
ROA	ROA without SME financing	5	1.1840	.35011	.15658
	ROA with SME financing	5	1.2640	.08562	.03829

Table 15: Independent Samples Test

	t-test for Equality of Means					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	-.496	8	.633	.0800	.16119	-.45170	.29170
Equal variances not assumed	-.496	4.477	.643	-.0800	.16119	-.50935	.34935

According to the above tables of SPSS outputs, the “sig value” that is also called “p-value” is 0.633.

According to the above table 15, the α value is 0.05 and sig value or p value is 0.633 which is greater than α value. That is the null hypothesis is accepted. Therefore, based on the above analysis, it can be proved that, there is no significant impact of SME financing on the financial performance of Dhaka Bank Limited.

6. FINDINGS

An analysis has been done on the SME financing situation of Dhaka Bank from year 2005 to year 2009 in terms of loan outstanding, interest income, cost of fund, non performing loan and number of borrowers and the impact of SME financing in the financial performance of Dhaka Bank. To analyze the impact of SME financing, an “Independent Sample t-test” has been done to know if there is any difference of the financial performance of Dhaka Bank represented by ROA before the introduction of SME financing in the lending portfolio and after the introduction of SME financing in the lending portfolio. From the analysis, following observations are found:

i. Both the total loan outstanding and SME loan outstanding grew positively from the year 2005 to year 2009 but in both cases, the growth rates were decreasing.SME loan outstanding grew at a rate higher than that of total loan outstanding. The contributions of SME in terms of loan outstanding increased throughout the 2005-2009 year period but, the contribution was negligible such as 0.19% in the year 2005.

ii. Similar to loan outstanding, both the interest income from SME loan outstanding and total loan outstanding grew positively throughout the study period but at a decreasing rate. In this case also, interest income from SME loan outstanding grew at a higher rate than that of total loan outstanding. The contribution of SME interest income to total interest income grew positively in the study period but, the percentages were very low such as 0.23% in year 2005.

iii. In the first two years of the study period, no refinanced amount was outstanding but after that from year 2007, refinanced amount was there and the cost of fund for SME loan outstanding and total loan outstanding grew positively but at a decreasing rate that was a good sign. The contributions of cost of fund for SME loan to total cost of fund were increasing but the contribution were negligible such as 1.86% in year 2007.

iv. In the first two years of study period, though there was no nonperforming loan(NPL) in SME , still the total NPL grew positively at a fluctuating rate that is, in some years, total NPL increased while in other years total NPL decreased that is a alarming sign. Again, from year 2007, SME started to contribute insignificantly in NPL and the growth rate of NPL of SME was increasing positively that was again alarming and the growth rate of SME NPL was higher than that of total NPL.

v. The number of SME borrowers though started to increase at a good rate for example-the growth rate was 282% in year 2006.But year by year of the study period, the growth rate decreased. The growth rates of total number of borrowers were not steady i,e, in some year the growth rate increased while in other years the growth rate decreased. The involvement of SME in terms of number of borrowers revealed a surprising trend. Till the year 2007, the contribution of SME increased in total number of borrowers though not significantly for example-in year 2005, the contribution of SME to total number of borrowers was 1.24%.From year 2008, the contribution started to decrease. That is, SME borrowers were not increased as expected.

vi. Though the interest income from SME increased positively because of increasing SME loan outstanding, due to the presence of high growth rate of NPL in SME sector and lower growth rates of number of borrowers, the interest income increased at a decreasing rate.

vii. As the higher or positively growing SME loan outstanding triggered to higher or positively growing the cost of fund for SME, due to the presence of refinancing facility of Bangladesh bank, the cost of fund grew at a decreasing rate. As the cost of fund increased positively, the interest income though increased, but did not increase at expected rate.

viii. Again, because of refinancing facility, the growth in cost of fund for SME was positive yet decreasing. The DBL management commented that, they did not get the full amount of SME loan outstanding claimed to Bangladesh Bank. As a result, the cost of fund did not decrease at a rate that should be happened. Therefore, the interest income from SME grew at a positive yet decreasing rate.

ix. Besides higher SME loan outstanding, another reason for positive yet decreasing growth rate of interest income can be the higher interest rates in initial years and lower interest rates in later years of the study period charged by DBL on SME loan products.

x. After the global financial turmoil, when the corporations especially the foreign currency earning sectors were under high pressure, the Government of Bangladesh started to focus more on SME by which the Govt. tried to boost up the economy. Again, Bangladesh Bank provided a clear definition for SME for the banks, emphasized on decreasing the lending rate for SMEs and started to refinance SME program to inspire banks. Other donor agencies for example-USAID started to refinance SME by providing bad and loss loan to different banks that have arrangements with them. The resulting situation is, DBL started to increase its SME loan outstanding and the interest income automatically started to increase. But due to different problems in SME financing (that are described in details in the next chapter) such as collateral problems, information insufficiency etc., the loan disbursement did not increase as expected. Relating to this, the total numbers of borrower increased at a fluctuating rate and the interest income increased at a decreasing rate.

xi. From year 1993 to 2001, ROA increased but in year 2002, ROA decreased. Again, from year 2005 to 2009, ROA followed wavy pattern that means, in some years, ROA increased while in other years ROA decreased. It means, from year 2005 to 2009, as it has already been shown that, the total loan outstanding, interest income, cost of fund, total NPL increased, NI might not be increased proportionately to total loan outstanding. As a result, in the formula of ROA=NI/Average Total Assets, the denominator increased at a much higher rate than the numerator in some years. That is why, in some years, ROAs increased and in other years ROAs decreased.

xii. From the impact analysis, it is found that, the sig. value or p value is greater than the α value. That indicates, there is no significant difference between ROAs of before and after the introduction of SME financing in the lending portfolio. Thus, it is proved that, there is no significant impact of SME financing on the total financial performance of Dhaka Bank Limited.

7. PROBLEMS ENCOUNTERED BY DHAKA BANK LIMITED IN SME FINANCING

The problems encountered by Dhaka Bank Limited in financing the Small and Medium Enterprises (SME) are as follows:

a) Problems in SME Definition

There is no universally accepted definition of small and medium industries. The Industrial Policy 1999 and the definition provided by Bangladesh Bank do not explain the rationale for the choice of the particular size classification scheme adopted by it. The classification schemes also suffer from some ambiguities. It is not clear from the definition which category an enterprise will belong to if the size of its capital assets and workforce fall into two different categories. For example, if an enterprise employ 75 workers and has Tk. 1 Crore worth of fixed assets should it be ranked as a small or a medium enterprise?

The definition also ignores capital intensity or automation. Some industries may be highly automated with heavy expenditure in fixed capital (say in excess of Tk. 100 Crore), but employ fewer than 100 workers, whereas some other enterprise, such as readymade garments, may employ more than 500 workers with an investment in fixed capital of less than Tk. 15 Crore. If we go by employment criterion, then the garment industry would be regarded as a large enterprise and the textile industry as a medium enterprise. But if we use the fixed capital criteria we shall reach the opposite conclusion. If we want to use both criteria simultaneously it will not be possible to classify them at all.

Another problem with the Industrial Policy 1999 definition is that fixed capital includes land. Unit price of land varies depending on location. Thus the value of fixed assets of two industrial factories, one located in, say, Dhaka metropolitan area and the other in a rural area will vary enormously because the land value in Dhaka could easily be 100 times more than that in a rural area outside of Dhaka city. Hence, two identical factories with identical buildings, machinery and workforce could be classified differently simply because of land value. Since the value of land does not play any direct role in production, it may be excluded from the calculation of fixed assets. In that case the value of fixed assets will be invariant to the firm's geographic location.

b) Insufficient Collaterals Provided by SMEs

SMEs are regarded as high-risk borrowers because of their low capitalization, insufficient assets and their inability to comply with collateral requirements of the bank. Generally, the small enterprise entrepreneurs are middle class or lower middle-class people who starts their business by borrowing from private money lenders named as "Mohajon", borrowing from friends, borrowing from cooperative societies or from banks. In case of bank borrowing, collateral is needed. In most of the cases, the entrepreneurs are obliged to put their stocks in trade as collateral and any other fixed assets(for e.g.-land, building etc.) as they do not have own land or other fixed assets. Stocks are regularly bought and sold and counted as secondary temporary collateral by the Bank. Thus, DBL faces collateral problems regarding SME financing.

c) Insufficient Information Provided by SMEs Entrepreneurs

In some cases, the SME entrepreneurs are not properly educated to maintain sufficient accounting records of their organization. Some of the SMEs are managed by entrepreneurs themselves with 2 to 5 employees who are in some cases, poor relatives or are family members of the entrepreneur. These entrepreneurs count only the sales of goods and cost of goods sold on daily basis but not in the proper way.Sometimes, these SMEs do not have TIN numbers and other necessary information. Thus, it becomes difficult by DBL branch officials to collect formal documents and financial statements from the client that support sanction and disbursement of SME loan.Also,for the lack of sufficient information, it becomes difficult for DBL to predict loan repayment ability by SMEs.Thus, the non-availability of client's detailed information is another type of obstacle faced by DBL.

d) Information Asymmetry

Sometimes, the SME clients provide misinformation to get bank loan. But when bank officials go for visit of both business and collateral provided; they find information regarding businesses and or collaterals that do not match with the information provided. This misinformation is vulnerable for DBL because if nonpayment of loan installment occurs, bank will have weak support for loan recovery that might cause the loan to be uncollectible. But in case of corporation, banks have cross matching with CIB report and other business reputation and corporations provide sufficient collateral to get loan. In case of nonpayment, bank will have strong support regarding corporate loan.

e) Lack of SME Clients' Experience in Business

To predict future sales, business experience is necessary. Also, to verify the projected sales, market reputation is necessary for which business experience is vital. As little capital is required to start a small business such as commodity business, stitching business etc. , anyone can start business at any time in Bangladesh now. Though the concept of SME is not new, it is still in an emerging stage in our country. As a result, many people are becoming inspired and are staring their businesses in an adhoc basis. For this, many new enterprises are rising and financing these SMEs is vulnerable for DBL in that, these entrepreneurs do not have enough business experience and many of them are totally novice in business. So, the sales and working capital projection verification for financing and loan repayment becomes somewhat susceptible for DBL.This is another reason for DBL that create impediment in SME financing.

f) Higher Competition among Similar Businesses

The business that requires minimal capital with little knowledge can be copied easily by others. This is true for SMEs also. It happens regularly that, a business financed by one bank is copied by other in the same place. As a result ,the sales of the first business is decreased as other entrepreneurs are providing same product with less price.So,the bank that financed the first business is at risk of repayment of loan. This is one of the problems encountered by DBL in SME financing.

g) Ignorance and Inability to Express the Need of Loan

In some cases, the SME clients have lack of knowledge and awareness about the SME loans. According to an article of Bangladesh Women Chamber of Commerce and Industry (BWCCI) (2008), a statistics has been revealed for women entrepreneurs that is, in terms of educational level of women entrepreneurs, 10.9% have post graduation degree, 16.8% are graduates, 26.7% have higher secondary education, 34.7% have secondary school level education and 6.9% have minimum primary education. Only 4% of women entrepreneurs interviewed have no formal education but some of them mentioned that they could read and write. As many of the SME entrepreneurs have lack of business experience, they cannot predict the working capital need for their businesses. For this, when the entrepreneurs need loan, they make a hurry to borrow capital from local money lenders or from relatives and friends to avoid their embarrassment with the bank loan.So,when,the sales representatives of the bank go for marketing bank's product, many SME businesses cannot express their needs and purpose for capital. That is another problem faced by DBL.

h) Higher Processing Cost

It is not feasible to monitor and maintain SME with the large corporate clients. Close monitoring and supervision the SME operation is necessary for all times rather than the corporate loan because, SME businesses are not as structured as large or corporate businesses. Thus the overall processing or serving cost is comparatively higher than the large scale loans, because to get the same profit (in terms of total amount) from corporate loan, the SME Financing Unit of DBL has to process quite a large number of SME loans as these are small scale loans in terms of loan amount. Also, in case of recovery, bank officials have to monitor more SME clients compared to the similar amount of loan recovery from a corporate client. So, more time, workforce and money are required to process SME loans rather than processing corporate loan.

i) Lengthy Loan Disbursement Process

Again, the loan delivery channels are highly centralized. It means, the branches gather the necessary particulars from the client and send it to the SME Financing Unit in the Head Office. The SME Financing Unit in the Head Office does the final approval and CPC (Central Processing Centre) provides final limit sanction of all SME loans. This increases not only the processing cost but also the serving time of any SME loan.

j) Shortage of Manpower and Lack of Proper Training

For a large amount of loan, DBL has to serve higher number of SME clients compared to the number of corporate clients. Also, many of the SME entrepreneurs in Bangladesh have lack of proper education. To make the entrepreneurs understand about the requirement, terms and conditions of getting SME loan, DBL officials need more time and efficiency that requires specific training. Also, more specific officials are needed for processing and monitoring SME which is not there in DBL.Currenly, DBL has only 6 SME centers and one kiosk is different semi-urban and urban areas of Bangladesh. Thus, DBL suffers from manpower shortage and lack of training for SME lending that create obstacle in SME lending.

k) Dispersion of SME Clusters

DBL has financed in "Lungi" stitching in Belkuchi of Sirajgonj.There is a community on Belkuchi of Sirajgonj for stitching cotton sarees,lungi etc.If the number of businesses is adequate to reach at breakeven point of opening and fulfilling branch cost, it is feasible to open branch or sales center .In Bangladesh the SME clusters are dispersed in different districts. SME sector has been declared as thrust sector, it is still expanding and for this, it is costly to open a sales center or kiosk where there is not sufficient number of SME businesses in one kilometer of the SME branch to finance in order to reach at break-even point. This is another reason that deters DBL in financing SME as sufficient number of SME centers cannot be opened.

8. RECOMMENDATIONS

As a premier role player in the economy by direct involvement in money supply and raising the capital for business, the Banks are in a significant position for expanding and development of the SMEs in Bangladesh. Dhaka Bank Limited is pretty aware of this responsibility and has already stepped in to the field by extending finance this sector. Though currently, the SME unit of DBL is facing various problems in financing SMEs, the Bank is enthusiastic about the expansion of lending in SME sector and to improve it gradually in a short period.

Some of these problems like collection of necessary paper documents from the SME clients and poor legal framework that is the definition problem cannot be overcome that easily. Since the SME clients are mostly small-scale entrepreneurs, they do not maintain audited or organized financial statements like that of the corporate clients. Therefore, this problem with the documents will always be there till the development of the education level in mass population. Again, the SME Financing Unit of the Bank has nothing to do with the poor legal framework of SME financing. This is the sole responsibility of the policy makers to develop a proper legal framework for financing SMEs.

Considering the findings of this report and present market scenario the following steps can be recommended to catalyze the expansion of SME finance in Dhaka Bank Limited with a more developed and structured network:

a) Introduction of More Branches

The requirements and aspects of SME loan are quite different from that of corporate loan. The large branches are concentrated on generating high volume of profit from a single unit of business in order to match their business target. So, SME financing is not worthwhile from their perspective. But considering the risk involvement and net profit aspects in terms of input and output ratio from a single unit the SME loan is really feasible and attractive for the small, semi-urban and rural branches. So the Bank should expand more SME finance through these branches in order to make them profitable for the Bank.

b) Decentralization of Loan Sanction and Utilization of Multiple Channels

One of the problems faced by DBL is, the lengthy time and high cost in processing SME loan. In order to reduce the high cost and time of processing, DBL should take the following steps:

- ✓ DBL should develop various delivery channels and thus decentralizing the delivery channels, so that branches can process and deliver SME loans by themselves.

- ✓ DBL should utilize multiple channels to collect necessary information of the client before the processing of loan.

c) Introduction of Small SME Centers, KIOSKS

Dhaka Bank Limited should open many small booths, KIOSKS or SME Centers around the country for promotional purpose and for processing the SME loans. It can reach to the customers in the rural and semi-urban areas through these booths. In the big city like Dhaka and Chittagong where the branches are focused to the corporate clients, DBL can service the SME loans by setting up the small SME centers that can cover the most of specific community in a particular area. Places like Islampur, Bangshal, Aminbazar have huge unexploited demand for SME loan that can be met easily by establishing booths in these areas because in Islampur and Bangshal there are different types of retail business such as trading of electric parts, readymade garments etc. DBL should set up alternative channels of distribution like booths are essential for market penetration and as a competitive advantage over other institutions. It should be mentioned that though booths cannot work as branch but booths can be operated with minimum investment and operational cost. As the loan size is small it does not require assigning higher ranked officials for marketing and operating the Loan. The officers to senior officer level officials are good enough for this purpose so the administrative cost will also be low for this product.

d) Recruitment of Aggressive Sales Force

A pool of aggressive sales force focused on SME client hunting, SME loan processing should be increased. Specific marketing strategies should be developed to compete with other banks or financial institutions that provide SME financing facilities. Private Banks like BRAC Bank, Prime Bank Limited, Eastern Bank Limited and foreign Bank Standard Chartered Bank have already established their sales force in this regard. The sales force can be contractual in nature that will lessen the administrative cost because a regular official incurs fixed salary with other benefits costs. DBL has already this type of sales force for marketing and expanding the personal loan, Home Loan and Car Loan products.

e) Proper Monitoring

DBL should assign specific officers in the branches for monitoring and maintaining the SME finance and can arrange incentives for best performers. The concept for "Relationship Officer" for the SME loan should be built up who will not only look after the portfolio but also the lending mix closely with the SME business community to understand their need and make them aware of the benefit of SME loan in the Bank.

f) Arrangement of Training for Employees
DBL should recruit more officials who are interested in building their career in SME lending and adequate training should be arranged for the personnel who work with SME lending. Proper training should be provided to the branch employees so that they can understand the need of the customer and make the appropriate service available to them. The SME sales force should be properly trained and educated about the product and the market.

g) Arrangement of Training for the SME Entrepreneurs
Moreover DBL can arrange training on SME loan problems and solution for the SME clients to make the clients knowledgeable and to create awareness about SME loans. This special arrangement can create unique competitive advantage for DBL and more SME clients can be attracted and with the thorough interaction with them, the current problems that are encountered by DBL mentioned in chapter 10 can be solved with a mutual understanding that will on the other hand enhance the reputation of DBL.

h) Organization of Promotional Activities
DBL should take steps to promote SME loan to SME business persons. According to an article on The Daily Star dated 28.06.2010,many SME business persons are not informed about SME loan provided by banks in the Northern part of Bangladesh.Thus,DBL might arrange advertisements in radio and televisions and should print posters and banners mentioning the advantages of SME loan taken from DBL and provide those in the rural areas. These promotional activities might help a lot to DBL to get more SME clients.

i) Inauguration of Research and Development Wing
Dhaka Bank Limited should inaugurate research and development wing that will perform extensive research on SME to identify the problems in SME financing and to develop the SME financing more as the time is coming for SMEs to reign in Bangladesh.

9.0 Conclusion

The SMEs are worldwide recognized as engines of economic growth. The commonly perceived merits often emphasized for their promotion especially in the developing countries like Bangladesh include their relatively high labor intensity, dependence on indigenous skills and technology, contributions to entrepreneurship development and innovativeness and growth of industrial linkages. The case for fostering SME growth in Bangladesh is certain as these industries offer bright prospects for creating large-scale employment and income earning opportunities at relatively low cost for the unemployed especially in the rural areas strengthening the efforts towards achieving high and sustainable economic growth which are critically important prerequisites for setting off poverty and socio-economic deprivation. Moreover, the Government is more serious about the SME sectors' development as govt. has allocated nearly 75% of the total industrial development budget and is likely to facilitate the SMEs with substantial duty cuts on the import of basic raw materials. From the above analyses and statistical presentation, it is already clear that, till now, SME financing has no significant impact on the total financial performance of Dhaka Bank Limited. The problems for SME financing and probable solutions are also given in the study. Thus, it is the time to wait and see the steps that DBL will take. The bottom line is not only the profit, but also to build better relationship with SME clients that is the generator of golden eggs. It is expected that, the golden eggs will eliminate the poverty from Bangladesh by developing the economy through the circulation of its value and its radiance in the life of the people.

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GLOBAL FINANCIAL INTEGRATION AND ECONOMIC GROWTH IN BANGLADESH: AN EMPIRICAL ANALYSIS

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ABSTRACT*: The major objective of this paper is to examine the impact of globalization and financial integration in the Bangladesh economy. Global financial integration has substantially increased in recent decades. Initially, it manifested in growing capital flows between developed countries. In response to the removal of capital controls, financial innovation and technological progress, financial integration has subsequently spread to emerging countries. To estimate the effect the nominal GDP has been regressed on the financial variables and trade openness. First we have checked the stationary properties of the data by the widely used Augmented Dickey Fuller test a multiple regression model has estimated. The regression result shows that globalization and financial integration has positive impact on the economic growth of Bangladesh.*

1. INTRODUCTION

Globalization refers to the increased interconnectedness of nation states through networks of trade, travel and communication. Some basic economic theory (primarily related to trade and capital flows) can explain how global integration affects economic performance. There are essentially two types of economic effects. The first is a one-time effect on welfare that results from moving from a closed economy to a relatively open economy. The second is the effect on long-term growth performance - a permanent change in the rate of growth following greater openness.

Overall economic well-being increases with greater openness to trade simply by increasing the total production of goods and services available for consumption. Economists recognize there may be welfare losses for some individuals due to market-dictated changes in income distribution. Even in the scenario with economic losers, it is theoretically possible to make everyone better off by some policy-induced form of income redistribution. In reality this is not easily

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practicable. But greater openness can only explain an increase in intra-country income disparity; it does not explain the increase in differences in income levels between the rich and the poor regions of the world. So how does trade affect economic growth? Is the effect different for rich and poor countries?

Global financial integration has substantially increased in recent decades. Initially, it manifested in growing capital flows between developed countries. In response to the removal of capital controls, financial innovation and technological progress, financial integration has subsequently spread to emerging countries. Gross and net capital flows between developed and emerging economics have increased. Financial integration has also been evident in frequently high correlations between asset yields or prices, particularly for certain asset classes such as high-yield corporate bonds and sovereign bonds and equities in developed and emerging markets.

Financial integration is the process through which a country's financial markets become more integrated with those in other countries or with those in the rest of the world. It implies the elimination of barriers for foreign financial institutions from some (or all) countries to operate or offer cross-border financial services in others. This may imply linking banking, equity and other types of financial markets.

Financial integration can be achieved in a number of ways. It may emerge as a result of formal efforts to integrate financial markets with particular pertness typically those that share membership in a regional integration agreement (RIA). Integration in this sense may involve eliminating restrictions to cross-border financial operations by firms from countries in the same RIA, as well as harmonizing rules, taxes and regulations between the member countries.

Financial integration can also emerge in the absence of explicit agreements. Such forms of integration as foreign bank entry into domestic markets, foreign participation in insurance markets and pension funds, securities trading abroad, and direct borrowing of domestic firms in international markets – all of which have occurred in many countries like – Latin America and the Caribbean, without the developing world, this type of integration in the region has primarily been with the developed world. The two different forms of integration are in some ways related. A formal financial integration agreement, for example, may require harmonizing certain regulations that govern financial markets. Similarly, in order to integrate de facto with the financial markets of the world, a country may redefine its own regulatory set up and converge toward international standards, thus becoming more attractive to foreign financial institutions, even without the need for an explicit agreement.

The volume of international financial flows increased significantly in the mid-1980s, and the pace of increase has further accelerated in the 2000s in the wake of financial liberalization in many countries. International financial flows are sometimes considered as a virtue, since they are expected to enhance economic growth through technology transfer, resource reallocation, and capital accumulation. At the same time, they are sometimes blamed for increasing a country's vulnerability to international financial crises, which tend to occur during periods of sudden reversals in international capital flows.

2. RATIONALE OF THE STUDY

Though, many economists, researchers and individuals empirically examined this issue i.e., globalization and financial integration in various countries like – Latin American countries (Argentina, Chile, Colombia, Brazil, Paraguay etc.) the Caribbean countries, South Korea, Middle-Eastern developing countries, India etc. But in Bangladesh only a few studies have been undertaken by the Bangladesh Bank on this issue because of their obligations.

Globalization and financial integration might help to attract foreign investors and stimulate domestic investment; financial integration may imply that emerging financial markets are more vulnerable to certain types of shocks, and that it may be difficult in some instance to find suitable instruments to manage these shocks. Packer and Wool-bridge (2003), identified greater financial integration may amplify volatility in foreign exchange markets and this effect may be heightened by the introduction of modern risk management techniques. Despite the potential benefits of foreign bank penetration in the developing countries, some analysts like – Goldberg (2001), Mester (1997) have suggested that increased foreign bank penetration in developing countries might reduce access to credit to some segments of the market, particularly small and medium sized firms that heavily depend on bank financing. They also found that, in general foreign banks are large and organizationally complex financial institutions that find it difficult to lend to informational opaque small and medium-sized firms. For this reason, I would like to examine on this issue i.e., globalization and financial integration by empirical study in the context of Bangladesh.

3. OBJECTIVE OF THE STUDY

The main objective of the study is to find out the impact of globalization on financial integration in Bangladesh. For this reason, I would like to examine and measures the state of external financial openness as well as financial integration of Bangladesh and the impact of external policy changes and financial integration on the economic growth of Bangladesh. The another objective of the study to focuses on the experiences of crisis affected economies for identifying vulnerabilities of reforming Bangladesh under free capital mobility in near future, in connection all of these I would like to assesses the present situation of the export and import volume i.e. trade balance, the effect of foreign bank penetration in the domestic markets, foreign banks, efficiency and regulatory standards, credit and deposit stability, foreign banks and market segmentation, conditions of domestic banks, government bond and security market development ,current account, export growth and foreign exchange reserves, fiscal balance and good governance etc.

4. LITERATURE REVIEW

Many argue that increased integration with global financial markets has been key in imposing market discipline on policymakers, and has helped to improve the quality of macroeconomic management. In addition, financial integration in emerging market countries has been driven by a belief that it would increase growth and reduce volatility. But the recent comprehensive study by Prasad et al (2003) finds the empirical evidence are disappointing as well as sobering. First, even with a systematic examination of the evidence, it is difficult to establish a robust relationship between financial integration and growth. Second, there is little evidence that financial integration has help to stabilize fluctuations in consumption relative to income. This could have been expected because theory suggests that financial integration would tend to pool risks across borders. In fact, for countries that are still at an early stage of integration, volatility of consumption relative to income has actually increased.

In a perfect neoclassical textbook world, there are good arguments for a positive growth impact of integration with the international capital market, especially for developing countries. By tapping the pool of global savings capital-poor countries could free themselves of a binding constraint on economic growth – lack of capital. Closer financial integration could also strengthen domestic financial systems leading to more investment, more efficient allocation of capital and higher growth (Levine, 2001). On a global level, the efficient allocation of capital and international risk sharing would be promoted (Obstfeld, 1994). However, arguments against the economic wisdom of openness to global capital flows have also been put forward. Financial integration does not have to be welfare enhancing in the presence of other distortions such as trade barriers and weak institutions, or if information asymmetries affect the proper working of the international financial market (Bhagwati 1998; Stiglitz, 2000).

Despite a rich body of contributions, the empirical literature is still inconclusive with regard to the financial integration-growth nexus. Empirical work by Grilli and Milesi-Ferretti (1995), Kraay (1998), Edison et al. (2002) and Fratzscher and Bussière (2004) has not confirmed a robust long-term impact of financial openness on growth. Their results have mirrored the early and well-known study by Rodrik (1998, p. 9) who concluded that "*capital controls are essentially uncorrelated with long-term economic performance*". On the other side of the spectrum are studies that find support for a relationship between openness to the global capital market and economic growth such as Quinn (1997), Bekaert (2001), and Edwards (2001). More recent research has aimed to throw more light on the question whether the positive growth impact of financial integration depends on third factors such as a sound institutional framework, but the results remained mixed at best (Edison et al., 2002; Klein, 2005). Detailed reviews of the literature on financial openness and growth have been given by Eichengreen (2002) and Edison et al. (2004), we thus content ourselves with this brief review. A balanced summary of empirical research on the issue has been given in a study by the research department of the International Monetary Fund (IMF), one of the main proponents of capital account liberalization in the 1990s:

Theoretical models have identified a number of channels through which international financial integration can promote economic growth in developing countries... However, there is as yet no clear and robust empirical proof that the effect is quantitatively significant. (Prasad et al., 2003, p.1)

A financial market of a member country, which is well integrated into the global financial market represents a key feature in this respect because it improves the stability against economic and financial vulnerability and enhances economic growth (Pagano, 1993, Schularick and Steger, 2006). The world capital markets have become more and more integrated in the last 30 years, although some exceptions and some dispersion across countries and sectors have to be acknowledged (e.g. Bekaert and Harvey, 1995; Carrieri, Errunza and Hogan, 2007). Empirical evidence of a deeper integration of both equity and bond markets has been delivered for the Euro area (Baele and Ferrando, 2005; Beakaert; Hodrick and Zhang, 2008). Particularly just before the introduction of the Euro, the capital markets of the countries which finally entered the monetary union became more integrated, not at least due to the reduction of exchange rate volatility and the convergence of monetary policies (Fratzscher, 2002). For the Central and Eastern European countries (CEECs) a steadily enforcing integration process into global financial markets can also be observed (Chelley-Steeley, 2005, for Hungary, Poland and the Czech Republic). In these economies, the integration took place to both global and European capital markets.

Some authors have argued that short-term policy variables like the budget deficit and the inflation rate need to be included (Edison et al., 2002). Others have opted to control for a smaller set of long-run determinants of economic growth mirroring the results of Barro and Sala-I-Martin (1992) and the robustness analyses by Levine and Renelt (1992). In particular, the inclusion of the investment ratio has proved problematic. Klein and Olivei (2001), Edison et al. (2002), McLean and Shrestsha (2002), Eichengreen and Leblang (2003), Obstfeld and Taylor (2003), Bekaert et al. (2004) did not include it, on grounds of potential endogeneity. Other authors such as Rodrik (1998), Arteta et al. (2001), Edwards (2001) and Klein (2005) explicitly control for different investment ratios at the beginning of the observation period. We follow an intermediate strategy and employ three different empirical models. The first excludes the investment ratio, whereas the second and the third include it, controlling for its potential endogeneity. Since the investment ratio is one of the most important explanatory determinants of long-run growth, we hold that it should be included, at least in some specifications, to test the sensitivity of the results.

In 2003 the McKinsey Global Institute analyzed the effect of multinational companies (MNCs) on productivity in multiple industries in four large developing countries (Brazil, Mexico China, and India). In almost all cases, investments in developing countries by multinational companies fostered innovation and productivity increases. Therefore, barriers to foreign investment and trade can create a competitive disadvantage for industry in developing nations. On the other hand, targeted incentives, by creating distortions, rarely have a positive effect and often create harmful unintended consequences. The policy implication is that "governments can more effectively grow MNC investments by putting the basic building blocks of productivity in place, through strengthened power, transportation, and legal infrastructures, and the enactment and enforcement of clear and consistent official policies."

In a gloomier account, globalization may be linked to increased turmoil in the financial markets of developing countries. The third generation model of currency crises (Paul Krugman) is partly attributable to contagion -- the phenomenon where crises in one country set off a similar crisis in another. Contagion has increased with greater integration of financial markets. The frequency and severity of such financial crises increased particularly during the turbo-charged period of globalization that began in the early 1990s. Mexico (1995), Southeast Asia (1997), Russia (1998), Brazil (1998), Turkey (2000, 2001), and Argentina (2001) have all experienced crises stemming from high levels of external indebtedness and sharp reversals in capital flows. These characteristics are directly attributable to the tighter integration of financial markets. Many proponents of globalization would argue that the problem does not lie in globalization, but in the absence of an international financial architecture that mitigates the effects of such crises.

There is substantial narrative evidence from economic history that highlights the contribution European capital made to economic growth of peripheral economies before 1914 (Feis, 1965; Woodruff, 1966). The degree of international financial integration reached before 1914 was truly impressive. In the decades before WW1, gross foreign investments in relation to gross domestic product (GDP) in 1913 stood at about 200 percent in Argentina, Chile and South Africa, and at or above 100 percent in countries such as Brazil, Mexico, Egypt, and Malaysia – actually about twice as high as the corresponding figures at the end of the 1990s (Twomey, 2000). Not only North and South America were well integrated into the international capital market. Southern and Eastern Europe, Africa and Asia all attracted considerable amounts of capital (Stone, 1999). European investors financed American railroads, Argentinean farms, sewerage systems in the Middle East, ports in Asia and telegraph networks in Africa. From the historical narrative, it would appear that integration into the global capital market could have been an important growth driver. But does this narrative stand up to detailed econometric investigation of a broad cross-country sample?

Contemporary research on the growth effects of international financial integration has typically regressed the growth rate of real per capita GDP growth on a measure for the degree of international financial integration plus a vector of control variables which proxy fundamental growth drivers such as human capital and initial GDP per capita as a neoclassical convergence term. However, the models employed in previous studies differed in two important respects: On the one hand with regard to the measures for the degree of financial integration, on the other with regard to the vector of control variables. Both issues need to be addressed briefly.

Financial integration – or financial openness as it has also been called in analogy to openness to trade in goods – has on the one hand been measured by the extent to which legal barriers impede the free flow of capital (Quinn, 1997; Rodrik, 1998). On the other hand, along the lines of the empirical literature on trade openness and growth – in which trade openness is typically measured by the value of traded goods and services over GDP – one can argue that financial openness should be measured quantitatively. Kraay (1998) and Edison et al. (2004) have looked at various measures of gross capital flows and stocks over GDP as quantitative indicators for the degree of international financial integration.

Eichengreen (2001) and Edison et al. (2004) discuss the advantages of both approaches. Clearly, the choice of the indicator is not only a question of convenience and data availability. For example, a country may operate capital controls, but they could be leaky or selective so that despite formal legal barriers, the actual degree of international financial integration could be quite substantial. Using a quantitative measure for the degree of integration would in this case seem to improve greatly as it would show a high degree of openness to international capital. However, in their comprehensive study Edison et al. (2002) test virtually all available indicators, rule-based as well as quantitative, but find no robust evidence for a positive growth effect of either one for the period 1980 to 2000.

5. DATA AND METHODOLOGY OF THE STUDY

This study is based on secondary data collected from various published sources mainly Bangladesh Bank, Bangladesh Bureau of Statistics, Bangladesh Economic Review and Securities and Exchange Commission. To explore the linkage between globalization and financial integration in Bangladesh, I shall attempt to implement time series econometric technique. By this technique it will explore the linkage among gross domestic product, domestic credit flow, broad money (M2), bank deposit, private credit, export and import.

6.0 Analysis of the result

First we examine the time series properties of the variables by the Augmented Dickey Fuller test. This test result has been found by using econometric software E-views. The result is as follows:

Table 1: Unit Root Test (Augmented Dickey Fuller Test)

Variables	Levels	First Difference
Gdp	1.23	3.77**
Dc	1.56	4.76**
M2	0.987	2.98***
Bd	0.78	4,78*
Pc	0.657	3.45**
Exp	0.456	5.34*
Imp	1.43	3.45**

*Note: *** means significant at 10% level.*
*** means significant at 5% level.*
** means significant at 1% level.*

The table shows that all the variables are nonstationary at their levels but stationary at first differences. Thus we can regress first differences of gdp on the considered variables.

The estimated regression equation is as follows:

$$\begin{array}{l} gdp = 8.08 + .004\, dc + .03\, m2 + .0023\, bd + .0005\, pc + .10 \exp + .08\, imp \\ \qquad\quad (2.56) \quad (5.8) \qquad (4.09) \qquad (2.13) \qquad (3.45) \qquad (2.87) \qquad (3.54) \\ \qquad\quad R^2 = 0.87 \qquad adjR^2 = 0.78 \qquad DW = 2.12 \qquad F = 28.78 \end{array}$$

The regression result is quite satisfactory, as the variables have desired sign. The coefficient of determination and adjusted coefficient of determination shows that the regression model fits the data very well. The Durbin Watson statistic implies that there is no autocorrelation. The F statistic also implies the overall significance of the model. The implication of the result is that globalization and financial integration plays crucial role in the enhancement of gross domestic product in Bangladesh.

7. CONCLUDING REMARKS

Considerable empirical effort has been devoted to investigate whether international financial integration boosts economic growth. The overall result of these studies, which primarily focused on Bangladesh economy, there are positive indications of growth effect of globalization and financial integration. The main opportunities of globalization for Bangladesh lie in the potential for wealth-creation through export led growth and the benefits of expanded international trade of goods, services, access to new technologies, ideas, and institutional designs in the global market place. However , globalization brings along also serious problems and tensions that need to be managed in appropriate ways. Global business cycles give rise to considerable macroeconomic volatility at the national level. In this paper, we observed that, overall growth scenario improved and financial sectors deepened in the inflow of last two decades. However, domestic savings and investments remained at much lower levels in global perspective.

Debates on globalization tend to elicit vehemently extreme views on its economic impact. Such discussions are frequently followed by related, and confusing, debates on trade policy and economic development. Most of these discourses are unproductive because they are poorly informed and incorrectly framed. Essentially, globalization offers policymakers a wide range of options for national economic policies and the optimal solution depends on individual country characteristics. The confusion surrounding these issues is partly the result of ambiguous empirical evidence regarding the economic effects of globalization, but mostly because some basic issues germane to globalization are not widely appreciated.

The lesson for policymakers in countries like Bangladesh is that trade policy should not form the basis of an overall growth and development strategy. A country's development strategy must be constructed around country-specific characteristics in a manner that efficaciously manages the trends associated with globalization; this does not necessarily dictate greater economic integration through increased trade and capital flows. Two shining examples of countries that benefited from conscious efforts to restrain the forces of integration are Chile (following its stabilization plan in the 1970s) and Malaysia (following the Asian Crisis), countries that instituted draconian capital controls. Globalization is an inescapable reality that offers choices for national economic policies; these polices must be made consistent within a framework of principles that appreciate individual country characteristics. If policymakers are able to maintain these perspectives, the best of times are indeed ahead of us.

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