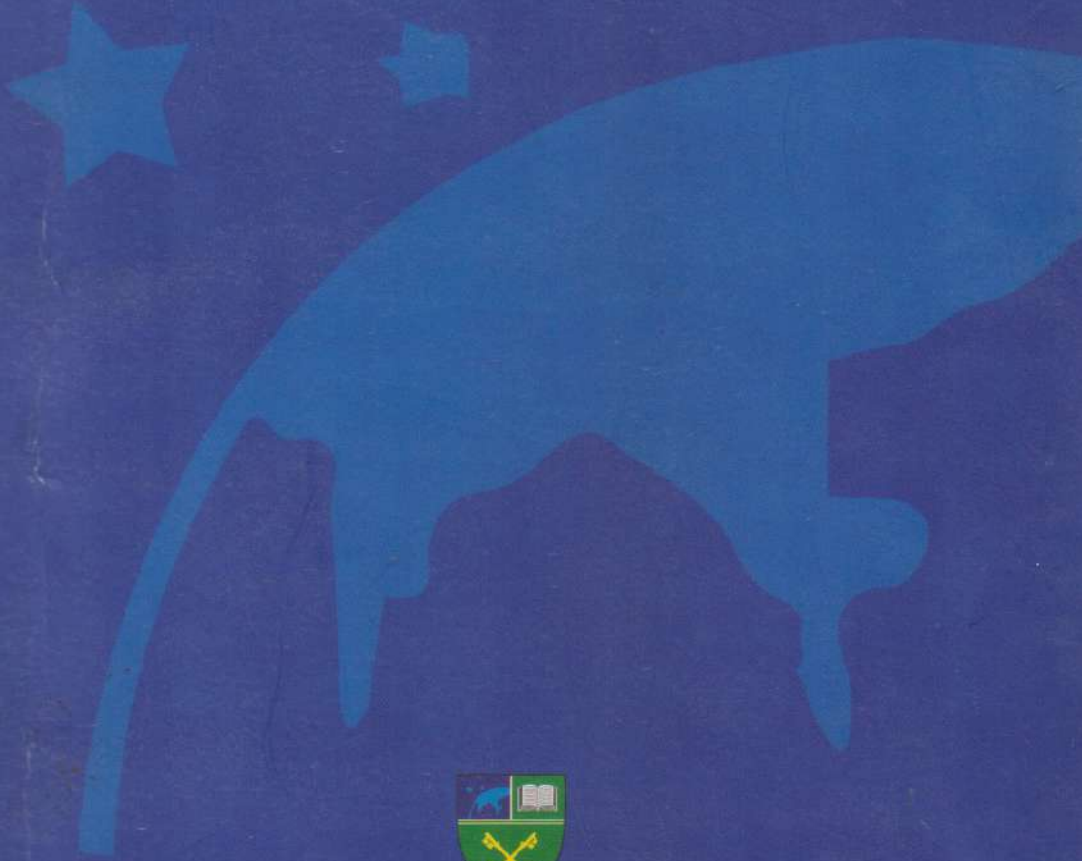


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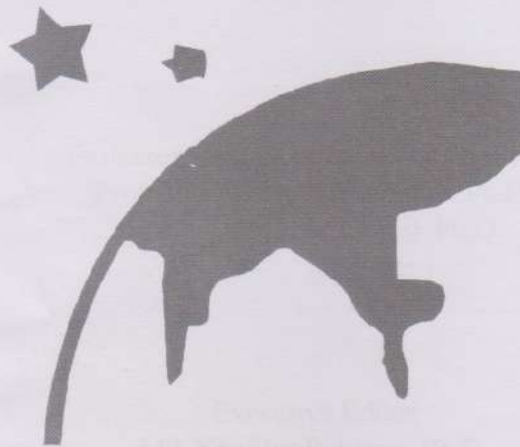


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## **Personnel Management Reform in Singapore: Can Developing Countries Draw Lessons from it?**

Syed Giasuddin Ahmed\*

### **Abstract**

*Personnel management reforms initiated by Singapore in 1995 were designed to ensure due "executive" responsibility in its civil service personnel management system. The goal has been to achieve a condition of 'unity of command' and 'unified direction' under a 'hierarchical' central civil service organ, i.e. Public Service Division (PSD), located in the Prime Minister's Office. Under the post-reform arrangement, the PSD was assigned to regulate the national civil service. Handling matters of 'general' civil service management include policy oversight and coordination of the newly created 31 personnel boards, staff development and training, service conditions of the Schemes of Service, and pay and related research. Again, coordinating and supervising personnel management functions within individual ministries include coordination of annual graduate recruitment programmes and departmental promotions. Top line managers in individual ministries have been especially encouraged to treat personnel management as a key function. They have been called upon to adopt henceforth a hand-on pro-active approach towards managing the personnel. In short, the declared policy intent of reforms put into effect is that those directly responsible for carrying out the task of public service must be left free to judge the adequacy of the temper and the quality of the tools to be employed in that job. However, such independent bodies as the Public Service Commission and the Legal Service Commission have been retained primarily to deal with selective senior level appointments and promotions, employee appeals and discipline, and to act as watch-dogs in maintaining merit system and employee rights. Although the reformed personnel management in Singapore has distinctive features of an improved new system, developing countries like Bangladesh interested in emulating the system must wait until its efficacy is proven in operational terms.*

### **Introduction**

Macroeconomic indicators of development in Singapore in the decades since 1960 clearly show remarkable country performances. From what was merely a centre of entrepot trade,

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\* Syed Giasuddin Ahmed, Ph.D, a Professor of Public Administration, University of Dhaka, Bangladesh. This article is an abridged version of a monograph with the same title which was submitted by the author to the Institute of Southeast Asian Studies (ISEAS) of Singapore in February 1999 on completion of a field research carried out in Singapore during the period from November 1998 to January 1999 under the sponsorship of the Ford Foundation.

dependent much on its nearby neighbours for economic viability, the first generation leaders (1959-1990) of independent Singapore transformed this island-state into one of the four newly industrialised economies (NIEs) in Southeast Asia. Modern Singapore is also adorned by such other labels as "Little Tiger", "Mini dragon" or a "High-performing Asian Economy" (HPAE). In one of the study reports of the World Bank, released in 1993, on the achievements of the eight HPAEs – in policy management and economic growth in particular, Singapore was referred to in glowing terms as a case of "East Asian Miracle" (World Bank 1993, 1).

More specifically, anyone probing Singapore's development indicators in US dollar terms, over the years from 1960 to 1996, can find out that its GNP per capita increased more than 15-fold from \$1,973 in 1960 to \$30,550 in 1996, while the average annual growth rates of GNP per capita were 6.7% between 1960 and 1969, 6.9% (1970-79), and 6.1% (1980-1993). Economic growths during the early 1990s in particular were remarkable. Propped up by an annual average growth rate of over 8 percent, Singapore's per capita income grew from US\$12,462 in 1990 to US\$20,415 in 1994 (Soon and Tan 1997, 258), thereafter to US\$30,550 in 1996 (Asian Development Bank 1997, 239). Thus, Singapore then ranked fourteenth worldwide in terms of its per capita income, ahead of Italy and the United Kingdom and just below Canada. This achievement was recognized by a decision made in 1996 by the OECD<sup>1</sup> to graduate Singapore to developed country status (Soon and Tan 1997, 259).

There are reasons to believe that the "miraculous" economic growth in Singapore stems partly from its growth-oriented leaders' realistic strategy and intelligent policies and partly from the institutional mechanisms they created to implement such policies. Prime Minister Lee Kuan Yew's People's Action Party (PAP), in government since 1959, could foresee in right perspective the pressing development needs of the country. The PAP government attached top-most priority to create secure institutional environments for private investment that led to very high levels of private sector-led growth. The PAP leaders also felt the need for retaining much of the colonial bureaucratic structure to implement their policies. But they made it quite clear to the civil servants that high standards of performance were expected. Corrective measures immediately followed this veiled warning aimed at revitalizing the

existing system of administration in place since the colonial days. The implementation of such measures began appointing increasing number of younger and highly qualified Singaporeans on merit, replacing the seniority system hitherto practiced by the British colonial government. The government placed particular emphasis on attracting people with technocratic-managerial skills and introduced a scholarship system to ensure a supply of qualified young graduates to the civil service (Soon and Tan 1997, 243). Indications have it that the pace of revitalization, set in by the first generation leaders (1959-1990), continued to gain momentum beginning in the early 1990s, notwithstanding that the reins of government was taken over by the second generation leaders in November 1990, led by a new prime minister, namely Goh Chok Tong.

This article focuses on the structural reforms introduced in the 1990s in Singapore with a view to improving on the existing system of civil service personnel management. In particular, the article will highlight those changes made to devolve much of the personnel management responsibility of the Public Service Commission to the Public Service Division (PSD), a 'hierarchical' central personnel organ located in the Prime Minister's Office (PMO), on the one hand, and to the individual ministries headed by the cabinet ministers, on the other. This article will also ascertain the remainder what role the Public Service Commission (PSC) has been playing in the aftermath of the personnel management reforms. No elaborate discussion will be made on the presently defunct two commissions, namely the Education Service Commission and the Police and Civil Defence Services Commission, which had been established in 1990 in pursuance of an amendment incorporated in the Constitution of the Republic of Singapore. Moreover, the scope of this study excludes the existing Legal Service Commission (LSC), which is also a constitutional body meant for dealing with the personnel matters of all officers in the Singapore Legal Service (The Republic of Singapore 1992, Article 114).

The article consists of five main sections including this introductory note. The section that follows this note probes the structural organization of the Singapore Civil Service, one of the main components of the public services in Singapore. The next describes the system of public personnel management in Singapore in light of the country's legal-constitutional framework. The fourth section highlights the main features of the

personnel management reform introduced in Singapore beginning in the year 1995. The fifth is the concluding section that includes in the main an assessment on the newly introduced civil service personnel management system in Singapore and its heuristic aspects. The system of personnel management in Bangladesh is also briefly described in the fifth section to see whether the present state of structural-functional arrangements of the Bangladeshi system warrants any need of emulating in some form or other the new Singaporean system. However, the remainder of this introductory note includes a brief general discussion on Singapore, its history, people, and the system of government.

Singapore is basically an island-state located at the narrow point of Strait of Malacca off southern tip of Malay Peninsula, consisting of the main island and 58 islets, with a total area of about 648 kilometres. Of the country's little over 3 million inhabitants, about 77 percent are Chinese, 14.1 percent Malay, 7.3 percent Indian, and 3 percent others. There are mixtures within this mixture, however. Singapore is both multireligious and multilingual, as well as multiethnic in that its inhabitants include Buddhists, Christians, Moslems, Hindus, and their children are required to learn in schools one of their mother tongues - Malay, Tamil, or Mandarin Chinese. One of the unifying factors is the English language, selected as the medium for educational institutions and for its use as the official language. Diversity along linguistic, cultural and religious lines portends though a constant threat to stability and social order, Singapore's government has consistently been pursuing policies towards establishing a multiracial nation state, to promote social harmony and fraternity. Most observers find indications that the government has succeeded well in achieving such goals (Kim 1985, 13-24).

Historical records indicate that the area now known Singapore had prospered as a centre of entrepot trade in the seventeenth century. European powers were trying to set up outposts in Southeast Asian region throughout the eighteenth century. In the early nineteenth century, the British East India Company established a trading base in Singapore, and in 1867, along with Penang and Malacca, it came to be recognized as a British Crown colony. Singapore fell to the Japanese army during World War II, and at the end of Japanese occupation, it became a Crown colony again until the attainment of its internal self-rule in 1959

(Joo-jock 1991, 3-15). The island joined the Federation of Malaysia for a brief period (1963-65), but eventually withdrew and became an independent state in 1965 (Kim 1985, 3-13).

Singapore was proclaimed a Republic in December of 1965 with a governing structure patterned on the British system of parliamentary government. Legislative power is vested in a unicameral parliament with 83 members (as of January 1999) who are elected for a term of five years. The leader commanding the majority in Parliament is appointed prime minister by the president. In January 1991, the Constitution was amended to allow for the election of a president by the citizens for a fixed term of six years. Unlike in a parliamentary system, the president in Singapore is empowered to veto government budgets and appointments to high public offices (Singapore Government 1997, 50-51). The Constitution stipulates that the executive power is vested in the hands of the president; in actual practice, however, such authority is exercisable subject to the constitutional provisions by the prime minister and his cabinet (Article 23).

The cabinet led by the prime minister is responsible for all government policies and the day-to-day administration of the affairs of the state. It is collectively responsible to Parliament, and is comprised of a number of ministers appointed by the president on the advice of prime minister from among the Members of Parliament (MPs). Each minister is allocated a portfolio of one or more ministries by the prime minister. The ministers are considered to be the political heads of their respective ministries, in charge of all functions of policy-making and administrative directions; of course, who are assisted by the permanent secretaries and other senior officials (Articles 24-34).

Judicial power in Singapore is vested in the Supreme Court and the Subordinate Courts. The Supreme Court consists of the Chief Justice, the Judges of Appeal and judges who are appointed from time to time. There are special provisions in the Constitution to safeguard the tenure of office and the independence of the judges of the Supreme Court (Singapore Government 1997, 15-16).

## Singapore Civil Service

Article 102 of Part IX of the Constitution refers to the public services in Singapore as comprising (a) the Singapore Armed Forces; (b) the Singapore Civil Service; (c) the Singapore Legal Service; and (d) the Singapore Police Force. Clause (a) of Article 103 however provides a clarification that "public service" does not include service otherwise than in a civil capacity, and it also excludes the persons who hold appointments to constitutional posts (e.g., Chief Justice, Auditor-General, Public Service Commission Chairman and Members), including a police officer below the rank of Inspector and the daily-rated employees.

The origins of the Singapore Civil Service (SCS) can be traced to what seemed at the outset a skeleton administrative functionaries that had to be improvised by Sir Thomas Stamford Raffles (founding father of Singapore) soon after he assumed the charge of the East India Company's newly founded trading outpost in Singapore in 1819. The functionaries were to perform such specific functions as 'general administration' and 'regulation and promotion' related to shipping trade at the outpost. As Raffles was then a 'covenanted' servant of the East India Company in London, the administration of the island at that time was largely carried out by the Company's local authorities based in Calcutta of India. Almost all instructions necessary for central control and coordination of the administration in Singapore came from the Calcutta-based authorities, then responsible for the East India Company's local administration in whole of India and in the Straits Settlements. Singapore was subsequently linked with the Company's other settlement in Penang to form the 'fourth' Presidency after the three other Presidencies formed earlier in Calcutta, Madras and Bombay in India (Meow 1985, 93-103).

However, the rule over Singapore by the East India Company finally came to an end in 1867, beginning from which year the British Crown itself took over full control of the Straits Settlements. The period of British rule in Singapore from 1867 to 1949 (except for the interlude of Japanese occupation of the island from 1942 to 1945) can genuinely be regarded an epoch in its administrative history in that a system of civil service, reflective of features of the Weberian style of bureaucracy,

developed during this period, together with many of the structural arrangements and bureaucratic practices, which seem to have still been persisting in the civil service of modern Singapore (Quah 1996, 62-69). 1867 was also the year when the Singapore branch of the Straits Settlements Civil Service was formed (Quah 1978, 417).

As of January 1999, the Singapore Civil Service (SCS) was organized to man 21 ministries and organs of state, including the President's Office and the Prime Minister's Office, and the departments under them. The ministries and organs of state were to be categorized then as 'economic and infrastructure development', 'security', 'social and community service', and 'general'. At that time the SCS had a total of 65,641 employees, or roughly 5% of the total workforce in Singapore, with 626 Division I Superscale officers, 22,759 Division I Non-Superscale officers, 19,619 Division II officers, 16,123 Division III officers, and 6,514 Division IV officers. In addition, about 35,000 officials and employees were also working in a number of statutory boards. Thus, altogether a little over 100,000 civil service and statutory board staffs constituted the magnitude of total public sector workforce of Singapore in 1999ii (Republic of Singapore, 1995: 75-85).

Members of the SCS can be divided into four distinct categories based on the nature and responsibility of the work they perform. These four categories are: first, the general services; second, the professional services; third, the departmental services; and fourth, the uniformed services. Jobs in the general services are broad in scope. Officers who are appointed to a general service may be posted to different ministries in the course of their careers. An example is the Administrative Service (AS), the officers of which hold key positions in ministries and departments and are responsible for formulating and implementing government policies. They work closely with ministers, advising them on possible options for the development of Singapore, and are responsible for ensuring that the policy chosen is properly implemented. An AS officer's work seems exceptionally challenging, varied, and rewarding as well. (Public Service Commission 1994, 4)

The category of professional services encompasses jobs for professionals, such as accountants, doctors, engineers, and teachers, as well as jobs for other candidates with specialized qualifications. A

qualified accountant can, for instance, join the Accounting Service or the Audit Service. In the Accounting Service, his principal role would be to provide accountancy expertise and to service the government administrative machinery. On the other hand, in the Audit Service, he could be involved in different aspects of government auditing, such as examination of financial transactions, accounts and systems and assessment of whether programmes are cost-effective (Public Service Commission 1994, 4).

A number of jobs in the SCS are focused on specific and well-defined areas of concern, and are confined to one ministry or department. Jobs in this departmental services category include those in the Labour, Library and Welfare Services. A Labour Officer's functions, for example, include providing conciliation services to employee unions and management, enforcing Labour Laws and helping in the formulation of labour policies (Public Service Commission 1994, 4).

Jobs in the uniformed services include the Police, Police (Narcotics Branch), Police (Prisons Branch), Civil Defence, Customs and Immigration Services. Apart from law enforcement, officers in these services also may undertake such other types of work as 'organization of resources', 'education and research' (Public Service Commission 1994, 4).

The four categories of services referred to above include a number of schemes of service<sup>3</sup> constituted under law comprising only of Division I and Division II level officers belonging to distinctive occupational groups. While a very few of these schemes of service, such as the Administrative Service, Accounting Service and the Auditing Service, are confined to Division I only, the remainder (e.g., Information Service, Foreign Service and Labour and Welfare Services) have both Division I and Division II branches. The schemes of service for the Executive Officers, Audit Officers, and Technical Officers, and so on, are confined to Division II exclusively (Public Service Commission 1992, 1-144).

Division II grades of the category of general services are occupied by executive officers of various levels of seniority, while the Division III grades are made up of clerical and technical officers. Those in Division IV grades are manual workers, office attendants, cooks and drivers (Quah 1996, 67).

Division I grades in the categories of general as well as non-general services are divided into 'superscales' and 'timescales'. But only for the AS and the AS (Foreign Branch) in the category of general services, five additional apex grades called Staff Grades I-V are available. AS officers in the Staff Grades and Superscales are the permanent secretaries and deputy secretaries, while the officers in the non-general services are directors and deputy directors who can climb the promotion ladder up to Superscale C at best (Public Service Commission 1994, 98).

An appendix is provided which illustrates in tabular form the service grades including the corresponding pay scale of each service grade, arranged vertically, of four specific Division I services of the SCS, i.e., the Administrative Service, Engineering Service, Education Service, and the Medical Service. This shows how distinctively is elevated the position of the Administrative Service, in terms of its service grades and salaries, vis-à-vis the positions of three other services of the professional category.

In general, the minimum academic requirements for entry into the services of Division I grades are a second class upper honours, or a second class honours, or simply a bachelor pass degree, depending on the varying entrance requirements provided in the relevant schemes of service. Minimum requirements for entry into the services of Division II grades are an honours or a pass degree, or a polytechnic diploma, or GCE passes at 'A' level, and so on (Public Service Commission 1992, 6-10). The entrance requirements to get into a Division III service are secondary III qualifications or better (Hiok 1980, 447).

Indications have it that the SCS has since the country's independence been playing key role in its economy, prosperity, and stability. Under the direction of the political leadership, the SCS formulates and implements government policies and programmes in various areas: security and international relations; economic and infrastructure development; and social and community services. Of course, the dividends for all of these development-friendly activities have been substantial, for the policy makers of the country seem considerate enough in their decisions to increase from time to time the salaries and benefits of the Singaporean civil servants; in effect, to bring them broadly in line with those of the private sector executives (Republic of Singapore 1994, 8-10). One study by the World Bank thus commends: "Not surprisingly, Singapore, which is widely perceived to have the region's most competent and upright

bureaucracy, pays its bureaucrats best" (The World Bank 1993, 179).

The government also sought to ensure that the competent civil servants would not feel frustrated with the implementation of policies and programmes devised by its policy level leaders. It involved the civil servants actively in the formulation of policies and accorded them high status, particularly to the AS officers (Soon and Tan 1997, 234-35).

By far the most important of the services in the SCS is the Administrative Service to which an official government brochure refers in glowing terms: "The Administrative Service is the premier Service in the Civil Service" (Public Service Commission 1994, 15). Another official brochure put on the government website focused the AS in far more shining words:

A career in the premier Administrative Service puts you at the heart of government, working closely with Ministers to shape and implement policies. Administrative Officers hold key positions in government ministries and major statutory boards. The 250-strong Administrative Service provides leadership for the Civil Service. The top civil servant in each Ministry - the Permanent Secretary - is an Administrative Officer. Many of the CEOs in the major statutory boards, for example, EDB, IRAS, HDB and LTA, are Administrative Officers. Administrative Officers are professionals in the business of government. As leaders in public sector, Administrative Officers actively think ahead for the future, anticipate and analyse problems, and assist the elected government in ensuring the security, survival and success of Singapore. The job calls for more than just intellectual ability; it also requires good people, skills, imagination and initiative, sound judgement, a capacity to think clearly and act decisively amidst the uncertainties and complexities of real life, and a deep desire to see to the well-being of Singapore: Thinkers and Movers and Singaporeans<sup>4</sup>.

To get into the AS, one must have a first or second class upper honours degree in any discipline, consistently good academic record and proven leadership qualities. The salary package offered to a fresh AS recruit ranges from \$33,600 to \$43,000 (without NS increments) and from \$38,700 to \$49,400 (with NS increments), excluding performance bonuses, special bonuses, market adjustment component and allowances, and so on (Public Service Division 1998, 4).

## **The System of Personnel Management**

This section focuses on the system of personnel management in Singapore, in particular, its formative phase and development, including an overview of the structural-functional arrangements of two key central personnel agencies in existence in today's Singapore. To begin with, however, it seems appropriate to clarify the concept of a 'central personnel agency.

A central personnel agency may be defined as an organ which deals with personnel functions having government-wide implications. Based on this definition, one may however identify several central personnel agencies in a country. For example, apart from certain specialized personnel organizations (i.e., public service commission and public service division, establishment office, personnel or civil service department), agencies such as the president's office, prime minister's office, cabinet office, finance department or treasury, or planning department, are also found in many countries dealing with some aspects of central personnel administration incidental to their assigned government-wide functions. But the agencies in the latter category are involved in central personnel administration only to the extent of ensuring concerted action in the overall policy process of resource allocation, coordination of business, and monitoring of policy implementation throughout the government machinery. By contrast, a central personnel agency's involvement in personnel administration constitutes its primary responsibility (Ahmed 1984, 289-93). To substantiate this point by an instance, managing centrally the civil servants which constitutes the primary responsibility of the PSD in Singapore may be cited. According to an official year book, titled Singapore 1997, the PSD is responsible for:

- determination of policies and central coordination in relation to the functioning of all the thirty-one personnel boards constituted in 1995 and thereafter;
- management of Schemes of Service and service conditions of the civil servants;
- planning and management of personnel development and training;
- conduct and monitoring of pay research and related studies;

- development and dissemination of professional information and organisation of related programmes;
- improvement of service quality in the public sector; and
- central oversight of social integration of new Singaporeans and social development (Singapore Government 1997, 52-53).

The PSD's own annual report of 1998 describes more precisely its tasks: (i) to shape a capable, forward-looking and effective public service, based on the principles of incorruptibility, meritocracy and impartiality, for a dynamic, successful and vibrant nation of excellence; (ii) to ensure the continuing availability and development of superior public service leadership; (iii) to look over the national talent pool to assure social and economic progress in a safe, secure and stable environment; and (iv) to operate itself with excellence (Public Service Division 1998, 3).

True it is that, traditionally, the individual ministries and departments in many countries have been the sole controlling authorities for employees placed at their disposal for carrying out their respective functions. But post-World War II developments indicate that the departmental control for personnel management of employees has increasingly been limited by the transfer of that authority to one or more central organs of civil service. One such organ is commonly known as 'public' or 'civil' service commission; while the other located more often than not within the executive hierarchy is known as Ministry of Personnel, Public Grievances and Pensions in India; Establishment Division in Pakistan; Ministry of Establishment in Bangladesh; Ministry of Public Administration and Home Affairs in Sri Lanka; Public Services Department in Malaysia, and Public Service Division in Singapore (Siedentopf 1983, 78-80).

Public service commissions in most countries with a British heritage are constitutional bodies, and they discharge their functions remaining outside the executive branch in most of these countries. They are organs for limiting or qualifying the degree of control of civil servants exercised by the executive agencies (Raksasataya and Siedentopf 1980, xi-xii).

The PSD as a central personnel agency in Singapore is not a very old institution. It came into being in 1983 almost thirty-two years after the establishment of the Public Service Commission (PSC). The PSC in

Singapore was first established in 1951 in accordance with provisions made in Public Service Commission Ordinance No. 55 issued in 1949 (Quah 1972, 20-128). A brief summary of the formative phase, composition and functions of the PSC follows.

### ***Public Service Commission***

The Singapore (Constitution) Order in Council of 1958, in pursuance of which Singapore attained its internal self-rule in June 1959, did include provisions for the establishment of a PSC, consisting of a chairman and four other members in place of the existing three-member commission formed in 1951. As in most other countries of British heritage, the PSC in Singapore was also accorded an advisory status, and was assigned with functions in relation to appointment, promotion, and transfer from one Division in the Service or from one class or grade to another, termination of appointment, dismissal and disciplinary control of every public officer in the state. In addition, the PSC was also assigned to play an important advisory role in matters of appointment to certain high government offices (Public Service Commission 1959, 1).

Part IX of the Constitution in operation in today's Singapore (as of January 1999) includes fairly detailed provisions relating to the PSC. Article 105 provides for a Public Service Commission consisting of a chairman and other members not less than four and not more than fourteen, including the appointment of one or two deputy chairmen from among the members of the PSC. They are to be appointed by the president for a term of five years, and for additional one or more terms, on the advice of the prime minister. But, except the members appointed from among the university teaching staff, a member (including the chairman) leaving the commission on completion of his term of office would be ineligible for any other appointment in the public service. A member (including the chairman) may be removed from the commission for any proven cause only in such manner as specified in the Constitution. The terms and conditions of service (salary, allowances and other privileges) of the chairman and other members are regulated by law passed in the parliament or, until such law is enacted, by an order of the president (Article 108). A senior officer of the public service is appointed as Secretary to the PSC by the president on the advice of the PSC's chairman (Article.109).

The constitutional provisions relating to the PSC's composition in Singapore seem distinctive compared to the relevant provisions in other countries of British heritage. More specifically, the constitutions in most other countries provide that the PSC's chairmen and members be appointed for certain fixed terms, extension in exceptional cases only, and they must leave the PSC on reaching the age limit specified in the constitutions; for example, 62 in Bangladesh (Ahmed 1990, 86-88). Moreover, the constitutions in most of these countries stipulate that certain number of senior civil servants be appointed as members of the PSC. The Constitution of Singapore seems to contain no such provisions<sup>5</sup>. What seems more unique is that the PSC chairman has been accorded a higher status vis-à-vis other high office holders in the government of Singapore. The Table of Precedence, released in 1998 by the Prime Minister's Office, shows the PSC chairman's rank number as '11(b)', which is higher to that of the judges of appeal, i.e., '12(a)', deputy speaker of Parliament, i.e., '13', and the head of civil service, '17' (Prime Minister Office 1998).

Until the constitutional amendment aimed at restructuring drastically the system of personnel management in Singapore, effective from January 1995, the PSC was empowered to (a) appoint, (b) confirm, (c) emplace on the permanent or pensionable establishment, (d) promote, (e) transfer, (f) dismiss, (g) exercise disciplinary control over all public officers, except the ones in the judicial and legal service, police officers below the rank of Inspector, and daily-rated employees. The PSC was (and still is) responsible for the planning and administration of scholarships and bursaries provided by the Singapore government, foreign governments, local and foreign organisations and foundations<sup>6</sup> (Public Service Commission 1994, 8-14).

However, the PSC's advisory role that was originally granted in matters of appointment and promotion to certain high government offices seems to have remained unaffected by the amendment referred to above. These include the offices of permanent secretary, auditor-general, clerk of parliament, attorney-general, director of education, commissioner of police, commissioner of civil defence, and so on. Besides, the chairman of PSC presides at the Presidential Election Committee's meetings to

which the Constitution has entrusted the function to verify the qualifications of the candidates seeking election to the post of the country's president (Article 18); one member of the PSC is nominated by its chairman to the Council of Presidential Advisers, to advise the president on certain matters specified in the Constitution<sup>7</sup> (Article 37B).

The Constitution of Singapore provides in Article 116(3) that the PSC may delegate any of its functions specified under Article 110(1) to persons or boards both in and outside the commission. In fact, this provision was envisaged by the constitution-makers apprehending the possibility that the PSC might over times become over-burdened with its constitutional duties and that it might then opt for delegating part of its functions. One must, however, point out that the process of delegation of authority by the PSC in effect began since the early years of its reorganisation in 1959 (Public Service Commission 1959-60, 2-6). The PSC reported in its annual report of 1994 that, to improve the effectiveness of personnel administration in the SCS, it had over the years delegated to permanent secretaries and heads of department the authority to:

- a) confirm officers in Divisions I to IV, except administrative officers (wef. 25 Sep 63 for Division I, III and IV officers and wef. 1 Apr 83 for Division I officers);
- b) extend the probation of officers in Divisions I to IV, except administrative officers (wef. 1 Apr 83);
- c) recruit Division III and IV officers (wef. 1 Apr 83 for Division IV and wef. 1 Sep 92 for Division III officers);
- d) renew temporary appointments for officers in Division I and II pending availability of permanent posts (wef. 1 Jan 90);
- e) re-employ re-retired Division II and IV officers whose normal retirement age is 60 years, up to the age of 65 (wef. 1 Jan 90 for Division IV officers and wef. 1 Sep 92 for Division III officers);
- f) transfer officers in the former "common-user" Services such as the Clerical Service, from one Ministry to another where there is no change in grade of appointment (wef. 1 Jan 90);
- g) promote officers within Division IV (wef. 1 Jan 90); and

promote Division I, II and III officers from the basic recruitment grade to the first promotional grade in 42 Services (wef. 1 Jan 92) (Public Service Commission 1994, 12-13).

But, to ensure that standards were maintained under the delegated authority, ministries and departments were asked in clear terms to comply with standard procedures and eligibility criteria spelt out by the PSC under each delegation listed above (Public Service Commission 1994, 13).

However, the fact remains that 'delegation of authority' is the discretion of the PSC. Therefore, theoretically, the government cannot force the commission to delegate certain 'authority' unless the latter itself agree to it. Probably, the urgency of a matter might have at times prompted the government to resort to amending the state constitution, thereby to slash the authority of the PSC. But the success of such extreme course of action depends on the extent of government's control in the parliament.

In Bangladesh, and elsewhere in the subcontinent, the government is empowered, under provisions made in the constitution, to exclude perforce any matter from the purview of the PSC; of course, after due consultation with the latter. In fact, the inclusion of provisions to this effect is indicative of a willingness of the country's constitution-makers to recognise at the very outset the ultimate responsibility of the government for the proper management and control of the civil service. From a general point of view, this approach seems consistent with the principle that those who are directly responsible for carrying out the task of public services must be left free to judge the adequacy of the temper and quality of the tools to be employed in that job (Bapat 1956, 54-56). Interestingly, the Constitution of Singapore includes no provisions as such.

### *Creation of the PSD*

Introductory paragraphs of this section of the article include references to the PSD, its responsibility in managing the civil service in particular. Established in 1983 as part of the executive hierarchy, the PSD then got

attached with the Ministry of Finance, taking over functions formerly discharged by the Personnel Administration Branch of the same Ministry. But one must look further back to trace the genesis of the PSD.

Prior to 1972, the PSC shared the personnel functions with the Establishment Division of the Ministry of Finance, which was traditionally responsible for both "operational" and "developmental" aspects of civil service management, not included within the purview of the PSC. This pattern of "dual" management changed after 1972, when personnel management functions were handled until the early eighties by three separate organizations. First, the PSC remained as usual responsible for recruitment, selection, promotion, training, transfer, disciplinary control and dismissal. Second, the Establishment Unit of the Prime Minister's Office was charged with the functions of career development and training of Division I officers of the SCS. Third, one newly created unit called the Personnel Administration Branch (PAB) in the Budget Division of the Ministry of Finance took over the functions of job classification and terms and conditions of service (Hiok 1980, 442-443). In April 1981, the function of career development and training of Division I officers was transferred from the Establishment Unit to the PSC (Quah 1996, 496).

In fact, reforms to improve the existing personnel management system were begun in 1980, to correct perceived problems in turnover, morale and commitment in the SCS and to give civil servants the opportunity to develop themselves to the fullest of their potential, thereby to contribute more to the country's development efforts. The government acknowledged that for the SCS to be effective it had to be able to attract and retain capable officers. A study of incomes of Singaporean graduates sponsored by the government revealed however a wide disparity in the pay of those in the SCS and those in the private sector. The salaries of the civil servants were therefore revised in 1982 to correct this disparity. The next step was to improve the personnel management system to ensure that those being recruited and retained by better pay would be developed to their fullest and assigned to jobs that best suited their capabilities (Lian 1985, 315-17).

In April 1982, the government announced the adoption of a new management philosophy for the SCS. To see how this new management philosophy put into practice, a committee called Personnel Management Steering Committee (PMSC), led by the PSC chairman, was appointed in March 1982. The PMSC, with the consultancy help of the Management Services Department, probed in-depth the various aspects of the system of personnel management operating in Singapore since the pre-independence days, including some studies on the personnel management systems of other countries and of the Shell. Its study on Singapore traced the problems of staff turnover, low productivity and morale, lack of commitment and dedication in the SCS to the inadequacy of the existing system of personnel management. Particularly, it found that the persons in charge of management within the governmental structure lacked real authority to manage such important personnel functions as recruitment, promotion, training, and disciplinary control (Lian 1985, 320-21).

The PMSC therefore paid special attention to find out ways in restructuring functional arrangements in regard to recruitment, training, career development, and matching the right person to the right job. Many of the reforms it supported aimed at long and integrated approaches, and at letting the civil service managers have more say in certain important personnel functions. Among its major recommendations, the most important one was that a separate central personnel authority be created to be known as Public Service Division (PSD), charged with the functions of formulating and reviewing personnel policies in the SCS and ensuring that such policies implemented consistently in all the ministries and departments. More specifically, the proposed PSD would be made responsible for appointment, promotion and disciplinary control of the SCS, including all personnel policy matters concerning performance appraisal, transfer and posting, training, career development, schemes of service, service conditions, and employee welfare. It would also provide such central personnel services as conducting pay research and administering the holiday bungalow scheme. In other words, these

suggestions when implemented might have an implication that the PSC's existing role would be relegated to that of a 'watchdog body' – confined to the task of ensuring 'merit' and 'impartiality' in regard to appointment, promotion and disciplinary control of civil servants (Quah 1996, 497).

On 3 January 1983, the PSD was created as the third division within the Ministry of Finance along with the existing Budget Division and Revenue Division. However, the PSD was finally brought under the direct control of the prime minister as a major constituent unit of the Prime Minister's Office in June 1994. Under the new structural arrangement, the PSD headed by a permanent secretary was specifically charged for performing a wide range of tasks that pertain primarily to managing the "region's most competent and upright bureaucracy". To accomplish these tasks the PSD was organized (as of January 1999) consisting of three major units: policy group, services group, and development group - each headed by a deputy secretary-level officer. Each major unit was again divided into a number of sub-units all reflective of a rationally structured functional arrangement (Public Service Division 1998, 5-7).

Reports have it that the new structural arrangement was envisaged then as a deliberate measure to ensure that the PSD, attached with the chief executive's office, encounter no difficulty to work on the government's plan to devolve much of the personnel management functions from the PSC to the executive agencies (Traits Times 1994, January 23).

Be that as it may, the PSD's location in the Prime Minister's Office in Singapore seems consistent with the structural arrangements made in most countries of British heritage for managing the civil services<sup>8</sup>. This arrangement has two distinctive advantages: first, a central civil service organ attached to the highest level of executive authority enjoys a position of prestige and government-wide authority; second, this arrangement ensures strict adherence to the civil service rules and 'merit' principle by all the agencies in the public sector (United Nations 1961, 3-7).

### Personnel Management Reforms

The formative phase and development of the system of personnel management in Singapore described in the preceding section seem to indicate features distinctive in cross-cultural context. Up until the 1995-personnel management devolution, the PSC as a central personnel agency in that country had since its inception been enjoying fairly a strong constitutional status. Its role in civil service personnel management had been both broad and wide-ranging. The Constitution vested in it the power to (i) appoint, (ii) confirm, (iii) emplace on permanent or pensionable establishment, (iv) promote, (v) transfer, (vi) dismiss, and (vii) exercise disciplinary control over all public officers, except those in the judicial and legal services, police officers below the rank of Inspector, and the daily-rated employees. What seems most distinctive is that the Constitution endowed the PSC with an important advisory role in relation to appointments to some high offices - permanent secretaries and others, and to participate in deliberations of two key constitutional committees, namely the Presidential Election Committee and the Council of Presidential Advisers. Moreover, the PSC's chairman and members have since the early 1960s been responsible for the planning and administration of a number of prestigious scholarships and bursaries, although the Constitution included no provision whatsoever specifying this function for the PSC. In other words, the PSC in Singapore seemed fit to be categorised as a "commission with broad power"<sup>9</sup>.

Thus, it was more likely for the PSC in Singapore, initially consisting of 3 members only, to get bogged down with heavy workload as times went on (Quah 1996, 493-504). Since the Constitution made no provision for the government to be able to exclude perforce any matter from the purview of the PSC, like in most other countries of British heritage, the latter itself took the initiative right from the beginning to solve its ever increasing problem of workload; initially involving the departmental representatives in recruitment and other personnel management processes (Public Service Commission 1959, 3-12), thereafter gradually delegating part of its authority to the permanent secretaries and departmental heads in pursuance of a provision made in the Constitution

(Public Service Commission 1994, 8-10). But what remained a fact that the PSC continued to act as the final authority for approval of whatever decisions the permanent secretaries and departmental heads were making in all matters delegated by them. The Constitution provided no scope for complete transfer of any of its powers by the PSC to anyone in the executive (Article 116).

Indeed, the creation of the PSD in 1983 was the demand of the time, for a separate central civil service organ within the executive branch - regulating the civil service, controlling and supervising 'internal' civil service management, and handling the problems of 'general' civil service management, which are generally considered to be the appropriate business of the executive hierarchy (United Nations 1969, 3-15). But the idea for a separate central civil service organ (i.e. the PSD) at the initial stage was primarily floated to address the existing system of personnel management fraught with such defects as 'divided personnel policy directions and responsibilities', 'ambiguous definition of role and authority of the various commissions/executive agencies', 'duplication of work', and 'inadequate coordination and inefficient use of manpower' (Management Development 1982, 33-56). There was in effect no suggestion that the newly created PSD should eventually take over the PSC's constitutionally mandated powers. Rather, an institutional device as such was thought then to provide for an effective functional link between the PSC on the one hand and all the executive agencies on the other. Hence the problem of the PSC's workload lingered on.

### *ESC and PCDS*

The government moved in once again in 1990 to the aid of the PSC, in which year two additional commissions, namely the Education Service Commission (ESC) and the Police and Civil Defence Services Commission (PCDS), were established (later abolished in 1998) after due amendment made in the Constitution. The ESC had been empowered under provisions made in the Constitution to appoint, confirm, emplace on permanent or pensionable establishment, and promote all officers in the Education Service (approx. no. 25,000), except the Director of Education who was to be appointed and promoted

by the PSC (Article 110A). On the other hand, the PCDSO had been vested with the authority to appoint, confirm, emplace on permanent or pensionable establishment, and promote all officers in the Police Service, Police Service (Prisons), Police Service (Narcotics Branch) and Civil Defence Service, and to transfer officers between these Services, except the Commissioner of Police and the Commissioner of Civil Defence Service who were to be appointed and promoted by the PSC (Article 110B).

Although the 1990-amendment had allowed the PSC, under provisions made in Articles 110A(3) and 110B(3), to retain its authority to dismiss and exercise disciplinary control over officers in all the services placed under the ESC and the PCDSO, both of these newly created commissions were subsequently made fully independent in respect of all matters of personnel management of the services placed under them in pursuance of another amendment made in the Constitution in 1994 (Public Service Commission 1994, 4-7).

Nevertheless, the amendment referred to above ensured for the PSC to represent adequately both in the ESC and the PCSDC, for it was stipulated that the chairman of each of these two commissions would either be the chairman or the deputy chairman of the PSC and of the other four members in each commission, the deputy chairman and another member would be PSC members nominated by the chairman of the PSC. Moreover, the Secretariat of the PSC was to provide all necessary secretarial services to both of these new commissions. The chairmen and members of the ESC and the PCSDC were all appointed by the president on the advice of the prime minister (Public Service Commission 1990, 9). Therefore, it was more likely for someone to get an impression that the establishment of two additional commissions in 1990 was actually a measure of institution-building that rather enlarged the membership of the existing PSC.

There were indications, however, that the creation of the ESC and PCSDC helped the PSC get somewhat relieved of its workload. But on comparing the workload cleared by the PSC with that of what were cleared by the ESC and the PCSDC, in terms of selecting candidates to

the SCS during the period from 1990 to 1993, one finds that the PSC handled most selection work (i.e., 71.3%), followed next by the ESC (25.3%), and thereafter by the PCSDC (3.4%) (Quah 1996, 550).

### *Personnel Boards*

1994 was indeed a significant year in the history of the SCS. The Constitution was amended in August this year (Amendment no.2) which envisaged devolving much of the PSC's powers to 31 personnel boards to be formed in the ministries effective from January 1995. Prior to this amendment, Prime Minister Goh Chok Tong informed senior civil servants attending the Administrative Service Dinner, held on 22 April 1994, that the government would be soon restructuring the existing personnel management system, to enable the SCS to compete more effectively with the private sector organizations, to attract and retain as well talented personnel. He began his "historic" speech delineating first the dysfunctional features of the existing civil service personnel system, and thereafter explained the rationale of the personnel management reforms that his government would soon be implementing. Selective parts of his famous speech are reproduced below in verbatim: In these circumstances, the civil service personnel management system has serious shortcomings. The basic problem is that the civil service separates authority from responsibility. This contradicts the basic management principle that managers should be given the wherewithal to accomplish their mission.

(Unlike the management situation in any superior private organization), in the civil service, permanent secretaries have no final authority over recruitment, promotions, deployment or advancement. PSC and PSD, which do, are not responsible for the performance of individual ministries or the government. This separation is meant to safeguard the integrity of the service, but goes well beyond what is necessary for this purpose.

The grave consequence of this fundamental flaw is the continuing loss of talent to the private sector. .... The member of the PSC ... is private individuals who have come forward to do public service for very little

personal reward. They have volunteered to take on an onerous responsibility, filled a key role in the personnel management system. Commission members attend an average 100 sessions a year. Some have served for than 20 years. The Government is grateful to them for their dedicated work and appreciates their sterling service. But, despite the best efforts of all those involved in the civil service personnel management, the result are not satisfactory because the system itself has been found wanting (Goh 1994, 7-11).

Prime Minister Goh assured the audience however that the personnel management system would be reformed "without compromising the high standards, integrity and impartiality of the civil service". Referring to the successful experiences of decentralizing the personnel management systems of the civil services in Britain, Malaysia and Hong Kong, he recommended that Singapore should follow their examples by decentralizing personnel management in the SCS by devolving authority from the PSC to the permanent secretaries and ministers. He concluded his speech by reminding the senior civil servants that decentralization meant "giving more responsibility to line managers, faster promotions for good officers, but also swifter retribution for those who underperform" (Goh 1994, 11).

To implement the changes announced by the prime minister, the first step was to amend the Constitution to enable the president, acting on the advice of the prime minister, to devolve specified powers of the PSC to a hierarchically structured personnel board - consisting of civil servants, to appoint, confirm, promote and transfer officers over which the boards will have jurisdiction. The constitutional amendment was passed by the parliament on 25 August 1994, and thereafter the president issued two separate orders, namely the Public Service (Special and Senior Personnel Boards) Order 1994 and the Public Service (Personnel Boards) Order 1994, specifying in particular the composition and functioning of 31 personnel boards to be formed in the ministries at three levels (Republic of Singapore 1994).

More specifically, on 1 January 1995, from which date the Presidential Orders referred to above came into effect, the functioning of the

personnel boards became operative. There were, as of January 1999, three levels of Personnel Boards: 1 Special Personnel Board, 6 Senior Personnel Boards, and 24 Personnel Boards. The Special Personnel Board took charge of Superscale officers up to E1 and timescale officers in the Administrative Service and in the Administrative Service (Foreign Service Branch). The Board was chaired by the Head of Civil Service with Permanent Secretary (Prime Minister's Office) and three other appointed Permanent Secretaries as members. Their appointments were made by the president, on the advice of the prime minister, subject to the discretionary veto powers of the president (Public Service Division 1997, 1).

There were six Senior Personnel Boards; each took charge of Division I officers in a group of ministries, except timescale officers in the Administrative Service and officers in the Auditing and Parliamentary Services. Each board was chaired by an appointed Permanent Secretary. Permanent Secretaries of the ministries under the jurisdiction of a particular Senior Personnel Board were members of that board. The chairman and members were appointed by the president on the advice of the prime minister, subject to the discretionary veto powers of the president (Public Service Division 1997, 1).

Each ministry had at least one Personnel Board to take charge of Division II, III and IV officers, although a ministry with a large number of officers was to have more than one Personnel Board. As of January 1999, there were as many as 24 Personnel Boards for Division II, III and IV officers. A Superscale Officer in a ministry chaired its Personnel Board. There were in all three members, including one PSD representative. The chairman and members were appointed by the Permanent Secretary of the Prime Minister's Office (Public Service Division 1997, 2).

It should be noted, however, that the constitutional amendment stipulating the personnel boards to take over functions of the PSC also provided that an officer aggrieved by the decision of a personnel board may submit an appeal to an appellate board stating the grounds of appeal. To give effect to this appeal provision, the president issued on 2nd

December 1994 the Public Service (Personnel Boards and Appeals Board) Regulations 1994, specifying in detail the appeal and review procedures, including the formation of an appellate board, namely the Appeals Board (Republic of Singapore 1994, 1563-1568).

The members of the Appeals Board were appointed by the president on the advice of the prime minister, subject to the discretionary veto powers of the president. Should the Appeals Board turn down the appeal and the appellant confirms in writing that he/she wishes to further appeal against the decision of the Appeals Board, the Chairman of the Appeals Board shall have to refer the case to the PSC. The decision of the PSC on an appeal shall be final (Republic of Singapore 1994, 1566-1568).

Thus, it appears that from 1st January 1995, on which date the 1994-constitutional amendment became effective, the PSC in Singapore was left with the following functions:

- recruitment into the Administrative Service, Parliamentary Service and the Auditing Service;
- promotion of officers in the Parliamentary Service and the Auditing Service;
- promotion of officers to Superscale D and above; and
- dismissal and exercise of disciplinary control over public officers under its purview.

The PSC was also to serve as the final appellate board to consider appeals against the promotion decisions of Personnel Boards for all the services under its purview. And the PSC continued as before to advise the government as regards the appointments to certain high offices, including the planning and administration of a number of prestigious scholarships and bursaries (Public Service Commission 1997, 3-5). Table 1 illustrates in tabular form the 4-tier civil service personnel management system introduced in Singapore effective from January 1995.

**Table 1: 4-tier Personnel Management System**

Agency	Responsibility
<p>Public Service Commission (PSC)</p> <p>[Constitutional Body: Members, minimum 5 and maximum 14, including the Chairman; the Chairman is appointed on a full-time basis, but the other members are not]</p>	<p>PSC has remained responsible for recruitment into the Administrative Service (AS), Parliamentary Service and the Auditing Service; promotion of officers in the Parliamentary Service and the Auditing Service; promotion of officers to Superscale D and above; and dismissal and exercise of disciplinary control over public officers under its purview; the PSC also serves as the final Appellant Board to consider appeals against the promotion decisions of all the Personnel Boards</p>
<p>Special Personnel Board (SPB)</p> <p>[SPB is chaired by the Head of Civil Service, 4 other members include the Permanent Secretary (PS) of the Prime Minister's Office (PMO) and 3 other PSs, all appointed by the President on the PM's advice for a term of two years]</p>	<p>SPB has jurisdiction and power over the class of officers under its purview to appoint, confirm, promote and transfer officers. It takes charge of Superscale officers up to E1 and timescale officers in the AS and the AS (Foreign Branch). It also acts as the Appeals Board to receive petitions from the aggrieved officers under its own purview, including from other officers placed under the purview of six Senior Personnel Boards and 24 Personnel Boards. If an aggrieved officer wishes to further appeal against the decision of the Appeals Board, Chairman of this Board shall refer the case to the PSC.</p>

<p>Six Senior Personnel Boards</p> <p>[Each Board covering a group of ministries is chaired by a PS, other members include PSs of ministries under a particular Board, all appointed by the President on PM's advice for a term of two years]</p>	<p>Each Senior PB is invested with the power to appoint, confirm, promote and transfer the class of officers under its purview. The Board takes charge of Division I officers in a group of ministries except timescale officers in the AS and officers in the Auditing and Parliamentary Services</p>
<p>24 Personnel Boards (PB)</p> <p>[one PB in each ministry is chaired by a Superscale officer of that ministry, 3 other members in a Board include one PSD representative, all appointed by the PS of the PMO for a term of two years]</p>	<p>Each ministry has at least one Personnel Board to take charge of Division II, III and IV officers: to appoint, confirm, promote and transfer officers under the purview of that Board. Ministries with large number of officers may have more than one Personnel Board</p>

### Conclusion

It seems appropriate in conclusion to assess first of all the post-1994 system of decentralized personnel management in Singapore before indicating its heuristic aspects. The preceding two sections of the article sought to probe in particular the pre-reform personnel management system and thereafter the constitutional measures aimed at devolving much of the PSC's powers to the senior civil servants in the executive agencies. The rationale of the measures is clearly perceptible. Prime Minister Goh Chok Tong did rightly point out that "permanent secretaries have no final authority over recruitment, promotion, deployment or advancement. PSC and PSD are not responsible for the performance of individual ministries or government" (Goh 1994, 9). Most likely that an outside observer of the system will not disagree with what the Prime Minister said.

Indeed, the framers of the Constitution in Singapore conferred upon the PSC wide-ranging personnel management powers over the civil service. Article 110 of the Constitution provides in clear terms that "it shall be the duty of the Public Service Commission to appoint, confirm, emplace on the permanent or pensionable establishment, promote, transfer, dismiss and exercise disciplinary control over the public officers". And there is no indication that the powers so vested in the PSC are of advisory in nature, as in most other countries of British heritage. This notion is reinforced by an observation of a Singaporean author: "Today it is a fully executive constitutional authority independent of the government" (Hiok 1980, 447). Truly, the PSC's position as such in Singapore seems to be unique in relation to most of the other Commonwealth countries. Presumably the constitution-makers in other countries were wise enough to pay due heed to a cautionary note sounded by Secretary of State Sir Samuel Hoare in his famous speech in the House of Commons while piloting the Bill of the Government of India Act 1935:

It is the definite view of my advisers both here and in India, that the Public Service Commissions had much better be advisory. Experience goes to show that they are likely to have more influence if they are advisory than if they have mandatory powers. The danger is that if you give them mandatory powers you then set up two governments in a Province and two governments at the Centre, and there is everything to be said against a procedure of that kind. From many points of view it is much better that they should be advisory (House of Commons 1935, 858).

Thus the constitution-makers in countries in the subcontinent recognized duly the ultimate responsibility of the agencies in the executive hierarchy for the proper management and control of the civil services. The constitution-making approach in India, Pakistan and Bangladesh inwith the generally accepted management principle that those who are directly responsible for carrying out the task of public services must be left free to judge the adequacy of the temper and the quality of the tools to be employed in that job (Bagat 1956, 57-58)

But the executive agencies in Singapore seemed much handicapped prior to the introduction of personnel management devolution because the Constitution in that country included no provisions as to authorizing the executive to exclude perforce appointments and other service matters from the purview of the PSC. In fact, there are several arguments in support of this authorization. First, it is most likely that there are many posts of such a nature that the responsibility for making selection for appointments thereto should be placed on the shoulders of the government, and it is inappropriate that the government should always consult an outside body in selecting the appointees. Second, it might well be unnecessary, as well as impracticable, to seek consultation with the commission in respect of a large number of low grade posts which are mostly filled by semi-skilled or unskilled personnel. Third, the government more often than not has to take the initiative to find personnel with high technical qualifications and offer appointments to them on special service conditions, for such persons do not normally apply for jobs and appear for interviews before the commission. Fourth, there might be times when genuine emergencies arise and immediate appointments have to be made, leaving no time to consult the commission (Bapat 1956, 54-58).

Most probably the arguments that prompted the Singaporean legislators to have recourse to a constitutional means to devolve the PSC's powers to ministries were in essence the same as those referred to in the preceding paragraph. As a matter of fact, the legislative action as such was especially demanding in that: "Governing Singapore has become an increasingly complex task. The Government is not able to manage a sophisticated economy alone, but must also develop and implement social, educational and security policies to match the rising aspirations of Singaporeans" (Goh 19<sup>04</sup>, 8).

Be that as it may, however, the extent of "devolution" seems to have stretched out fairly far. Reports have it that there were prior warnings even inside the parliament well before the legislative proposal to decentralize personnel management was to be put on the table. Parliamentarian Loh Meng See, warning of dangers and pitfalls ahead, said the move might lead to intense competition and friction among the

ministries and departments. Stressing the need for stability and security of the tenure in the civil service, he asked: "Are the civil servants mentally prepared for the culture shock that will be brought about with the changes?" (Straits Times 1992, January 17).

Nobody knows it for sure whether the civil servants in that country had to bear the brunt of the 'culture shock' after the "devolution" was put into effect. But one eventuality seems certain that the senior civil servants involved in the decentralized personnel management system have to remain preoccupied with the recruitment processes most of their working hours at the expense of their far more important 'policy management and implementation' functions. Moreover, the newly introduced system of recruiting personnel by the various ministries is bound to create some practical problems both for the recruiting authorities and the job applicants. First, each ministry will try hard to recruit the best of the available lot, thereby giving rise to intense inter-ministry competition and friction. The whole process will lack a coordinated central supervision. Second, it is most likely that a job seeker will move from one ministry to another in search of a job. And it is not unlikely that he or she might eventually get frustrated.

Probably the best course of action would have been that the law makers had rather taken a decision to vest in the executive the power to exclude perforce appointments and other service matters from the purview of the PSC. And thereafter to take appropriate measures to strengthen the structure and functioning of the existing PSC, to appoint full-time PSC members, including the appointment of certain number of members from among the senior civil servants.

Notwithstanding the foregoing weaknesses of Singapore's newly introduced personnel management system, one should not be oblivious of a fact that the civil servants of that country contributed much to its development and prosperity. They indeed played a positive role in initiating remarkable socio-economic changes in the country (Quah 1983, 216). Considered what they have so far contributed as members of "the region's most competent and upright bureaucracy", it is most unlikely that they will breach the trust reposed in them. The new system must therefore be allowed to have trial for some times.

However, it is too early to say for sure that a developing country like Bangladesh can draw some lessons from the newly introduced civil service personnel management system in Singapore. While the system of 'public' and 'personnel' management as it operates today in Bangladesh developed as an integral part of Pakistan's governmental polity (1947-1971), its actual genesis dates centuries back (Ahmed 1997, 338-368). The following brief summary on the Bangladeshi system pinpoints its basic features in structural-functional terms.

From a purely formal-legal perspective, the entire framework of personnel management in Bangladesh is a unified process. Structured hierarchically, the Ministry of Establishment (central personnel agency) of the government of Bangladesh is attached to the highest level of executive authority (prime minister). Its official head (the Establishment Secretary) is responsible to the prime minister. The Ministry of Establishment (MOE) lays down the broad policies, principles and regulations for managing the civil bureaucracy and initiates measures for employee welfare and for improvement of procedures and techniques relating to personnel management. It is also responsible for initial recruitment to all the cadre services (i.e. the schemes of service in Singapore) and for disciplinary action and welfare in respect of all senior officials in the ministries (collectively called the secretariat) and the departments attached to the ministries but located outside the secretariat (Ahmed 1986,:224-275).

Although the MOE initiates and develops policy guidelines in respect of all major personnel matters and oversees their implementation by other ministries, its jurisdiction in routine management of the civil servants is not all-pervasive. MOE directly manages the Administration cadre of the Bangladesh Civil Service (BCS) and senior-level promotions of all the BCS cadres. The respective ministries control other service cadres, such as Audit and Accounts, Customs and Excise, Taxation, Education, Agriculture, and Public Works. Yet, there is a persistent pattern that the general rules and regulations governing the civil servants emanate mainly from one source, that is, the MOE (Ahmed and Khan 1990, 28-29).

The Public Service Commission (PSC) in Bangladesh is a constitutional body. It is the other central personnel agency with a constitutional responsibility to conduct tests and examinations for the selection of certain categories of civil servants and to act as “watchdog” on the government’s dealings with civil servants and their conditions of service. In essence, the powers and functions of the PSC in Bangladesh are advisory based on the tradition and pattern followed and adopted in most countries of South Asia (Ahmed 1990, 87-147).

Although the overall responsibility for managing the government's personnel functions lies with the MOE, the actual operation of such functions seems complex since the MOE shares this responsibility with other ministries. The Cabinet Division attached to the Office of the Prime Minister, for example, heads several key committees; indeed the Cabinet Secretary, much like in the UK, is the de facto head of civil service. The PSC also plays a major part since it has the constitutional authority for selecting the fresh recruits into most of the BCS cadres. The Ministry of Finance (MOF) too is involved; in conjunction with the MOE and the line ministries it ensures complementary control, and through its financial-cum-budget monitoring operations the MOF also has an important role in determining the compensation package and size of the civil service. In addition, the administrative aspects relating to non-civil service jobs are dealt with directly by the individual ministries in which the non-civil service personnel are deployed (World Bank 1996, 142).

The "real world" personnel management situation described in the preceding paragraph indicates much of a loosely defined system of shared responsibility which often leads to fragmentation and causes delays in decision-making. Recruitment of new staff is the most time consuming and frustrating task in government; it can dissuade even the most zealous reformers (World Bank, 1996: 141).

In the final analysis, one of the priorities for reforming Bangladesh's personnel management system should be to strengthen the MOE, in structural-functional terms, along the same lines as what have been adopted in regard to the PSD in Singapore. However, anyone conversant

with the system of personnel management in Bangladesh – its recruitment process in particular, knows it well that dysfunction resulting from "job scarcity" has remained both widespread and persistent ever since this country gained independence in 1971.

To speak more specifically, one should take note of a fact that public sector employment in Bangladesh has considerable attraction for increasing numbers of educated, skilled, semi-skilled persons. The main reasons are greater job security, wider promotion prospects, guaranteed retirement benefits, and also what seems to be a 'charm of elitism', especially in the higher echelons, in public sector employment. But persons seeking such employment in Bangladesh far outnumber the positions available. Jobs are far scarcer in the private and other non-government sectors. By far the most common dysfunction resulting from the scarcity of available jobs is that personnel recruitment processes in Bangladesh bear the brunt of such evils as nepotism, favouritism, and political "pull". Hence the existence of an independent PSC, with its constitutionally guaranteed role in recruitment and other important service matters, seems warranted in Bangladesh to ensure that the evils which interfere with the proper functioning of personnel management are kept under control.

## APPENDIX

### Service Grades and Pay Scales of Four Divisions I Services of the SCS

#### ADMINISTRATIVE SERVICE

Grade	Pay Scale	
Permanent Secretary		
Senior Administrative Officer Grade Staff V	Staff Gr V	\$51,155 pm
Senior Administrative Officer Grade Staff IV	Staff Gr IV	\$43,865 pm
Senior Administrative Officer Grade Staff III	Staff Gr III	\$36,570 pm
Senior Administrative Officer Grade Staff II	Staff Gr II	\$31,710 pm
Senior Administrative Officer Grade Staff I	Staff Gr I	\$26,845 pm
Senior Administrative Officer Superscale A	Superscale A	\$22,935 pm
Senior Administrative Officer Superscale B	Superscale B	\$19,340 pm
Administrative Officer Superscale C	Superscale C	\$16,065 pm
Deputy Secretary		
Administrative Officer Superscale D1	Superscale D1	\$13,635 pm
Administrative Officer Superscale D	Superscale D	\$12,365 pm
Administrative Officer Superscale E1	Superscale E1	\$11,465 pm
Administrative Officer Superscale E	Superscale E	\$10,570 pm
Administrative Officer Superscale F	Superscale F	\$9,720 pm
Administrative Officer Superscale G	Superscale G	\$8,875 pm
Principal Assistant Secretary		\$6,405-7,555 pm
Assistant Secretary		\$4,940-5,905 pm
Senior Administrative Assistant		\$3,930-4,700 pm
Administrative Assistant		\$2,450-3,430 pm

#### Entry Qualifications

A First Class Honours or Second Class (Upper) Honours degree is the most elementary requisition. Apart from good academic qualifications, Administrative Officers must possess integrity, judgment and commitment to the nation. Other requisites are a clear analytical mind, an ability to grasp issues quickly and to formulate sound policies. Administrative Officers should also be self-assured, innovative and adaptable.

**Education Service**

<b>Grade</b>	<b>Pay Scal</b>
Senior Education Officer Superscale C	\$16,065 pm
Senior Education Officer Superscale D1	\$13,635 pm
Senior Education Officer Superscale D	\$12,365 pm
Senior Education Officer Superscale E1	\$11,465 pm
Senior Education Officer Superscale E	\$10,570 pm
Senior Education Officer Superscale F	\$9,720 pm
Senior Education Officer Superscale G	\$8,875 pm
Senior Education Officer Superscale H	\$8,030 pm
Senior Education Officer 1A	\$5,470-6,345: 6,635: 6,930 pm
Senior Education Officer I	\$4,235-6,050 pm
General Education Officer IA	\$3,645-5,395 pm
Senior Education Officer IIA	\$1,715-5,140 pm

**Entry Qualifications**

Honours or a Pass degree plus a Postgraduate Diploma in Education or equivalent is required.

**ENGINEERING SERVICE (CIVIL)**

<b>Grade</b>	<b>Pay Scal</b>
Engineering Service Officer Superscale C	\$16,065 pm
Engineering Service Officer Superscale D1	\$13,635 pm
Engineering Service Officer Superscale D	\$12,365 pm
Engineering Service Officer Superscale E1	\$11,465 pm
Engineering Service Officer Superscale E	\$10,570 pm
Engineering Service Officer Superscale F	\$9,720 pm
Engineering Service Officer Superscale G	\$8,875 pm
Engineering Service Officer Superscale H	\$8,030 pm
Engineering Service Officer Grade I	\$5,175-6,340: 6,635: 6,930 pm
Engineering Service Officer Grade II	\$4,350-5,760 pm
Engineering Service Officer Grade III	\$3,500-4,855 pm
Engineering Service Officer Grade IV	\$2,040-3,840 pm

Entry Qualification: A University degree in Civil Engineering

## MEDICAL SERVICE

Grade	Pay Scal
Medical Specialist/Medical Administrator Superscale D	\$12,365 pm
Medical Specialist/Medical Administrator Superscale E1	\$11,465 pm
Medical Specialist/Medical Administrator Superscale E	\$10,570 pm
Medical Specialist/Medical Administrator Superscale F	\$9,720 pm
Medical Specialist/Medical Administrator Superscale G	\$8,875 pm
Medical Specialist/Medical Administrator Superscale H	\$8,030 pm
Senior Registrar	\$5,175-6,340; 6,635; 6,930 pm
Registrar	\$4,350-5,760 pm
Medical Officer	\$2,695-4,885 pm

**Entry Qualifications:** A Medical degree registrable with the Singapore Medical Council. Candidates must have completed 1-year housemanship.

**Source:** Public Service Commission, *Careers That Count*, Singapore, 1994. Each service grade's scales of pay shown in this appendix are what the PSC reported in 1994.

### Notes:

- i OECD (Organization of Economic Cooperation and Development) is now comprised of thirty member countries, including the largest economic powers. Originally established in 1960 with twenty member countries, with its headquarters based in Paris, OECD shares a common commitment to help its member countries promote economic growth, employment, and improved standards of living through the coordination of state policies of the member countries. It also helps promote the sound and harmonious development of the world economy and improve the lot of the developing countries, particularly the poorest (*The New York Times Almanac* 2001, 499-500).
- ii Division-wise staff figures of the Singapore Civil Service (SCS), including total staff figures of the statutory boards, were collected directly from the Public Service Division (PSD) in the Prime Minister's Office through the administration of a questionnaire.

- which was used partly as an interview schedule and partly as a data collection sheet during the field research conducted by the author in Singapore from November 1998 to January 1999. The figures so collected from the PSD were compared minutely with the figures of public sector employment reported in the Budget of the Financial Year 1995-96 (See Republic of Singapore 1995, 75-85).
- iii A scheme of service in Singapore means a service in the SCS which has been constituted under law with a number of positions, a distinct hierarchy, and well-defined positions for each step in the hierarchy. A particular scheme of service includes such detailed provisions as entrance requirements, salary scales, promotion prospects, and pension benefits of that service (see Colony of Singapore 1953, 1-8). The field research revealed as many as 120 schemes of service of the SCS which were constituted as of January 1999.
  - iv The official brochure of the Government of Singapore on the website can be accessed by visiting at "Public Service Division" <http://www.gov.sg>. The abbreviations EDB, IRAS, HDB and LTA referred to in the brochure stand for Economic Development Board, Internal Revenue Authority of Singapore, and Land Transport Authority, respectively.
  - v The constitution-makers in Pakistan argued that they should leave no scope whatsoever for the government to develop a sort of "ingratiated relationship" by way of offering extended membership to the commission's members, with the motive of influencing their functions in recruitment and other matters of civil service management. In addition, they also thought the presence of senior civil servants in the commission would ensure "accrued expertise" in dealing with many civil service matters of quasi-judicial nature (Pakistan 1954, 115-179).
  - vi Each recipient of an undergraduate or a postgraduate scholarship or bursary, however, is required to give an undertaking that he or she would serve the government for certain years on successful completion of his/her studies (Public Service Commission 1994, 8-14)

- vii The functions of the PSC relating to appointments and promotions to high government offices and its advisory role in the conduct of presidential elections and of the Presidential Advisory Council in Singapore are hardly to be found in other countries of British heritage. The governments of Bangladesh, Pakistan and India in particular have retained full control over matters of appointment and promotion to most posts one grade above the recruitment grades in the civil services (Ahmed 1990, 60-100).
- viii In England, a full-fledged central civil service organ called Civil Service Department was created in 1968, but later in 1981 was replaced by the Management and Personnel Office located in the Cabinet Office (The Economist 1981, November 14). The Ministry of Personnel, Public Grievances and Pensions in India was established based on the recommendations of the Indian Administrative Commission of 1970. This separate ministry headed by a cabinet minister took away the civil service personnel management functions from the Ministry of Home Affairs, which had since the British days been in charge of these functions (Sharma 1981, 60-66). In the United States, the hundred-year old U.S. Civil Service Commission (USCSC) was finally abolished in 1978. The defunct USCSC was replaced by two newly created personnel organizations, namely the Office of Personnel Management, an executive arm of the U.S. President, and the Merit Systems Protection Board, an independent body outside the executive branch, to protect the interests of the federal public personnel (Macy and Cambell 1979, 59-65).
- ix For further details on the structure and functions of a “commission with broad power”, see United Nations 1969, 35, 65-70).

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## Measurement of Factors' Productivity and Intensity in Tanning Industry of Bangladesh

Md. Khalilur Rahman\*

### Abstract

*Bangladesh is enjoying a better environment for leather production due to available hides and skins and cheap labor. Leather is highly demanded both for domestic utilization and for export. Economic performance depends on factors (labor and capital) activities in tanning industry. Our results show that marginal products- both of labor and capital are lower than average products. Labor intensities are higher both in wet-blue and crust stages, but low in finished stage. It means that finished stage is capital intensive stage and wet-blue and crust stages are labor intensive. The more efficient firm will have a larger A (efficiency) than the less efficient one. We observe from the results that the production efficiency is increasing and it is in highest position in finished stage. The production efficiency is in the best position in finished stage due to skilled labor involvement in production process.*

### Introduction

The main strengths in the leather industry are accessibility of raw material (hides and skins), cheap manpower, and salts. Moreover in the contemporary years the tanning industries in developed countries have been shrinking due to pollution problem and high labor cost. The tanning industries are now shifting from developed countries to developing countries. Bangladesh can be benefited from this shifting. Leather and leather products significantly contribute both to domestic consumption and to export. The leather sector of Bangladesh has earned a special status in the national economy. Being the fifth largest export-earning source, this sector plays a vital role in export as well as in the overall economic performance of Bangladesh. Raw materials and factors (labor and capital) are available and cheap in Bangladesh. Now we are to examine the present situation about factors' productivity and intensity in the tanning industry of Bangladesh.

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## **Objectives**

The purpose of the Cobb-Douglas Production Function (CDPF) is to measure factors' productivity and intensity in tanning industries in Bangladesh. The study is carrying the following objectives.

- To have a deeper understanding about the contribution of factors in the tanning industries
- To use CDPF to measure factors' productivity and intensity to examine the economic performances of the tanning industries in Bangladesh

## **Data and Methodology**

About 206 tanneries are in Bangladesh, among them 187 tanneries are at Hazaribagh, Dhaka. Besides, there are a few tanneries in Chittagong (9), Jessore (1), Khulna (1), Rangpur (1), Jamalpur (1), and greater Dhaka (6). The larger coverage of the tanneries is within Dhaka (Hazaribagh) city. The study undertakes an empirical analysis of primary level cross section data from 38 different tanneries for intensive study. From the existing 206 registered (Ahmed 2002) tanneries units, 38 firms were selected randomly that includes all types of tanneries. A structured questionnaire was used for the field survey. The collected raw data was then processed and analyzed up to the requirement. We measured factors' productivity and intensity by using Cobb-Douglas Production Function (CDPF).

## **Review of Literature and Theoretical Discussion**

A method of production (process, activity) is a combination of factor inputs required for the production of one unit of output. Usually a commodity may be produced by various methods of production. The production function is a purely technical relation, which connects factor inputs and outputs. It describes the laws of proportion, that is, the transformation of factor inputs into products (output) at any particular time period (Koutsoyiannis 1979 p-67).

Any firm's managers and engineers must decide how to produce the

firm's product. To maximize profit, they must endeavour to produce the product efficiently and at minimal cost. This means that they must constantly keep abreast of new methods and compare their productive performance with those of their rivals. (Mansfield p-203).

The starting point for the theory of the firm usually assumes profit-maximizing business operating in a competitive market and producing only a single good (Harbury 1968 p 37). The firm is the basic production unit, producing goods and services, such as transporting, financing, wholesaling and retailing using certain inputs called 'factors of production' such as labor and capital (Intriligator 1980 p 251).

Production functions are the most basic econometric relationships, and ideally express the technical relationships between physical quantities of inputs to the production process, and the physical quantity of output produced. This description should be applied at the micro-economic level, for a single firm or a single homogeneous product, and a few homogeneous inputs. Production function, in this sense, shows up a one-way relationship in the causal flow.

It is, therefore, important in theories of economic growth and in theories of distribution. At the micro-economic level it is of interest because of its usefulness in the analysis of such problems as the degree of which substitution between the various factors of production is possible and the extent to which firms experience decreasing or increasing returns to scale as output expands. At both the macro and micro-levels, the production function has been used as a tool for assessing whether production of any increase in output over time can be attributed to, firstly, increases in the inputs of factors of production:, secondly, to existence of increasing returns to scale:, and thirdly, to what is commonly referred to as technical progress (Thomas 1985 p208).

### **The Neo-classical Production Function**

The production function is nothing but the relationship between output Q in one hand and both labor (L) and capital (K) on the other hand. We can show it mathematically,

$$Q = f(K, L)$$

Where  $Q$  refers to gross output,  $K$  refers to capital stock. Capital input should be the flow of capital services or capital utilization, but in practice this is too difficult to measure, and instead capital stock, an aggregate of heterogeneous types, must be used. (If this is adjusted for some general level of utilization, one is assuming a constant rate of capacity.)

We, as econometricians, try to estimate the form of this theme; it would have many welcome features: it would be unambiguously one-way in the causal flow. It is expected from given inputs to the resultant output; it would stand independent of other economic relationships such as input supply functions and output demand functions. Its parameters, when estimated, would describe the technological features of a well-defined productive process, and would be given concrete interpretation.

Through aggregation the causal direction has gone from one extreme (inputs  $\rightarrow$  outputs) to the other (outputs  $\rightarrow$  inputs). However the truth lies between these, and makes added complications: outputs and inputs are usually decided upon together by the producer, or at least some degree of feedback from outputs to inputs occurs, either directly or via the ancillary relationships of supply and demand functions (Hebden 1983 pp87-88).

This feedback makes it incorrect to regard output as the dependent variable and inputs as exogenous variable in the production function, at whatever level of aggregation. So when production functions are estimated in isolation by simultaneous equation (least-squares methods), their estimates are all subject to bias because the simultaneous context of the production function has been ignored. However, this does not appear to have deterred many distinguished researchers (Hebden 1983 pp87-88).

### **The Cobb-Douglas Production Function (Homogeneous function)**

The production function, which has been used for most empirical work, is the Cobb-Douglas production function. The two Americans C.W. Cobb and D.H. Douglas, working in the late 1920s, observed that the share of total output going to labor had remained approximately constant over time. They have estimated it after studying different industries in the world, so it is used as a fairly universal law of production.

The general form of the Cobb-Douglas production function (CDPF) is multiplicative. CDPF is the most popular in applied research, because it is easiest to handle mathematically.

$$Q = AK^\alpha L^\beta e^u \quad \alpha > 0, \beta > 0 \quad \text{--- (1)}$$

Where A,  $\alpha$  and  $\beta$  are fixed positive parameters

Q= output

K= Capital input

L= Labor input

u = Stochastic disturbance term

e= base of natural logarithm

From the above equation it is clear that the relationship between output and the two inputs is non-linear. However, if we log-transform the above model, we obtain

$$\begin{aligned} \ln Q &= \ln A + \alpha \ln K + \beta \ln L + u \\ &= c + \alpha \ln K + \beta \ln L + u \quad \text{(2)} \end{aligned}$$

Where  $c = \ln A$ ,

Thus written, the model is linear in the parameters  $c$ ,  $\alpha$  and  $\beta$  and is therefore a linear regression model. Notice though, it is nonlinear in the variables Q, K and L but linear in the natural logarithms of these variables. In short, (2) is a log-log, double-log or log-linear model.

The properties of the Cobb-Douglas Production Function are quite well known, they are as follows. (Hebden 1983 pp 91-93 and Gujarati 1998 pp-214-216,)

1.  $\alpha$  is the (partial) elasticity of output with respect to the capital input, that is, it measures the percentage change in output for say, a one percent change in the capital input holding the labor input constant.
2. Like this,  $\beta$  is the (partial) elasticity of output with respect to labor input, that is, it measures the percentage change in output for, say, a one percent change in the labor input holding the capital input constant.

3. The sum  $(\alpha + \beta)$  gives information about the returns to scale, that is, the response of output to a proportionate change in the inputs. If this sum is 1, then there is a constant return to scale that is doubling the inputs will double the output, tripling the input will triple the output and so on. If the sum is less than 1, there is decreasing returns to scale- doubling the inputs will less than double the output. Finally if the sum is greater than 1 means there is increasing returns to scale- doubling the input will more than double the output.
4.  $\frac{\alpha}{(\alpha + \beta)}$  Measures the capital share of inputs.
5.  $\frac{\beta}{(\alpha + \beta)}$  Measures the labor share of inputs.

For multi factor inputs the production is,

$$Q = AF_1^{\alpha_1} F_2^{\alpha_2} F_3^{\alpha_3} \dots F_n^{\alpha_n}$$

$$\text{Log } Q = \text{Log } A + \alpha_1 \text{Log } F_1 + \alpha_2 \text{Log } F_2 + \dots + \alpha_n \text{Log } F_n$$

On the other hand we can see more properties such as

#### **Property-1**

Given the linear homogeneous production  $Q = f(K, L)$ , the average product of labor (APL) and capital (APK) can be expressed as a function capital-labor ratio  $\hat{K} = K/L$  alone.

$$Q/L = f(K/L, L/L) = f(K/L, 1) = f(\hat{K}, 1) = \varphi(\hat{K}) \dots \dots \dots (1)$$

$$\text{APL} = Q/L = \varphi(\hat{K})$$

$$\text{APK} = Q/K = Q/L \cdot L/K = \varphi(\hat{K})/\hat{K}$$

#### **Property-2**

Given  $Q = f(K, L)$ , MPL and MPK can be expressed as a function of  $\hat{K}$  above.

$$Q = L \varphi(\hat{K}) \text{ [using (1)]}$$

$$\partial/\partial K(\dot{K}) = \partial/\partial K(K/L) = 1/L \text{ and } \partial\dot{K}/\partial L = \partial/\partial L(K/L) = -K/L^2$$

The results of differentiation are

$$MPK = \partial Q/\partial K = \partial/\partial K[L\phi(\dot{K})] = L \partial\phi(\dot{K})/\partial K$$

$$= L \partial\phi(\dot{K})/\partial\dot{K} \cdot \partial\dot{K}/\partial K$$

$$= L\phi'(\dot{K})/L = \phi'(\dot{K})$$

$$MPL = \partial Q/\partial L = \partial/\partial L[L\phi(\dot{K})]$$

$$= \phi(\dot{K}) + L \partial\phi(\dot{K})/\partial L$$

$$= \phi(\dot{K}) + L \partial\phi(\dot{K})\partial\dot{K}/\partial K$$

$$= \phi(\dot{K}) - L \phi'(\dot{K}) - \dot{K}/L^2$$

$$= \phi(\dot{K}) - \dot{K} \phi'(\dot{K})$$

This indeed shows that MPK and MPL are function of  $\dot{K}$  above.

**Property-3(Euler's Theorem):**

If  $Q = f(K, L)$  is linearly homogeneous, then

$$= K\partial Q/\partial K + L\partial Q/\partial L = Q$$

Proof:  $K\partial Q/\partial K + L\partial Q/\partial L$

$$= K \phi'(\dot{K}) + L[\phi(\dot{K}) - K \phi'(\dot{K})]$$

$$= K \phi'(\dot{K}) + L\phi(\dot{K}) - K \phi'(\dot{K})$$

$$= L\phi(\dot{K})$$

$$= Q$$

**Property-4**

$$\partial = \frac{\text{Relative change in the leass cost combination}}{\text{Relative change in the input rice ratios}}$$

$$\partial = \frac{\text{Relative change in } \frac{K^*}{L^*}}{\text{Relative change in MRTSKL}}$$

$$\partial = \frac{\text{Marginal Function}}{\text{Average Function}}$$

$$\partial = \frac{d\left(\frac{K^*}{L^*}\right) \frac{K^*}{L^*}}{d\left(\frac{MPK}{MPL}\right) \frac{MPK}{MPL}} = 1$$

Where  $\alpha + \beta \neq 1$

Then CES production function [(SMAC) Solow, Minhaj, Arrow & Channey, 1962]

### **Economic Significance of the Cobb-Douglas Production Function (CDPF)**

CDPF provides important information regarding industrial and agricultural sectors through which we can make different policies (Singh 1977 pp276.). Since, we can determine the marginal productivity of capital as well as labor. It is helpful in wage determination principles (Singh 1977 pp276). The estimated elasticity of coefficient may be helpful in international or inter-sectoral comparisons. It helps us in the study of the different laws of returns to scale. It provides us information regarding the substitutability of the factors of production. It is used to determine the degree of homogeneity (Singh 1977 pp276).

Estimation of C-D production Function with labor Defined by Total Number of workers those who directly involve in Production process.

In this Segment we have gone through estimating the Cobb-Douglas Production Function by applying Ordinary Least Square (OLS) method in the common framework of multiple regression analysis. Here, information regarding total number of workers has been used to represent labor input while (fixed) capital is taken to be the value of mere machineries and equipments (ignoring the value of land and building), as more reasonable results have been obtain by using this definition of Capital. Dependant variable in each case has been taken to be the value of output in a year at different stages of leather manufacturing industries in Bangladesh.

$$VQWBS = f(KWBS, LWBS)$$

Here VQWBS = Value of Output in the Wet-Blue Stage

KWBS = Capital in the Wet-Blue Stage

LWBS = Labor in the Wet-Blue Stage

Using Cobb-Douglas Production function and taking Log (Ln) in both sides.

$$\text{LnVQWBS} = \text{LnA} + a_1 \text{LnKWBS} + b_1 \text{LnLWBS} \quad (1)$$

$$\text{LnVQWBS} = 3.351 + .497 \text{LnKWBS} + .5155 \text{LnLWBS}$$

$$(3.621) *** \quad (2.493) ** \quad (2.471) **$$

$$R^2 = .71, \quad \text{Adjusted } R^2 = .69$$

$$F = 19.45 \quad \text{D. f.} = 35$$

$$\text{No of observation} = 38 \quad \text{Returns to scale} = 1.01$$

\*\*\* is used at 1% level of significant on a two tail distribution.

\*\* is used at 5% level of significant on a two tail distribution.

\* is used at 10% level of significant on a two tail distribution.

The above equation no (1) present the partial elasticities of output with respect to capital and labor input defined by total no. of workers (exhibited by the regression coefficients of the natural logarithm of the value of capital and labor inputs). A return to scale has been measured by simply adding the coefficients of labor and capital inputs.

Now we consider the result of equation no. (1) that exhibits the result of the estimation of C-D production function for Wet-Blue stage of manufacturing of leather. The estimated coefficients of labor and capital are moderately significant. The multicollinearity between the explanatory variables of capital and labor as is usual for cross-section data. The Coefficient of determination of the C-D model has been fitted well to the data can be known from the measures of 'goodness of fit' as indicate by  $R^2$ ,  $\bar{R}^2$  are reasonably significant and F statistics is highly significant. The partial elasticity of output with respect to capital (eq. No-1) is .497 reflects the fact that a 1% increase in the capital input holding the labor input constant leads to .49% increase in the output of wet-blue leather. On the other hand The partial elasticity of output with respect to Labor (eq. No-1) is .515 reflects the fact that a 1% increase in the labor input holding the labor input constant leads to .51% increase in the output of wet-blue leather.

**For Crust Stage**

$$VQCS = f(KCS, LCS)$$

Here

VQCS = Value of Output in the Crust Stage

KCS = Capital in the Crust Stage

LCS = Labor in the Crust Stage

Using Cobb-Douglas Production function and taking Log (Ln) in both sides.

$$\text{LnVQCS} = \text{LnA} + a_1\text{LnKCS} + b_1\text{LnLCS} \text{ ----(2)}$$

$$\text{LnVQCS} = 3.503 + .4389 \text{LnKCS} + .5501 \text{LnLCS}$$

(7.941)\*\*\*      (2.3268)\*\*      (2.751)\*\*\*

$$R^2 = .79, \text{ Adjusted } R^2 = .74$$

$$F = 29.33 \quad \text{D. f.} = 35$$

No of observation = 38

Returns to scale = .98

\*\*\* is used at 1% level of significant on a two tail distribution.

\*\* is used at 5% level of significant on a two tail distribution.

\* is used at 10% level of significant on a two tail distribution.

Now we consider the result of equation no. (2) that exhibits the result of the estimation of C-D production function for Crust stage of manufacturing of leather. The estimated coefficient of labor is highly significant and capital is moderately significant. The multicollinearity between the explanatory variables of capital and labor as is usual for cross-section data. The Coefficient of determination of the C-D model has been fitted well to the data can be known from the measures of 'goodness of fit' as indicate by  $R^2$ ,  $R^2$  are reasonably significant and F statistics is highly significant. The partial elasticity of output with respect to capital (eq. No-2) is .438 reflects the fact that a 1% increase in the capital input holding the labor input constant leads to .43% increase in the output of Crust leather. On the other hand the partial elasticity of output with respect to Labor (eq. No-2) is .550 reflects the fact that a 1% increase in the labor input holding the labor input constant leads to .55% increase in the output of Crust leather.

**For Finished Stage**

$$VQFS = f(KFS, LFS)$$

Here

VQFS = Value of Output in the Finished Stage

KFS = Capital in the Finished Stage

LFS = Labor in the Finished Stage

Using Cobb-Douglas Production function and taking Log (Ln) in both sides.

$$\text{LnVQFS} = \text{LnA} + a_1\text{LnKFS} + b_1\text{LnLFS} \text{ -----(3)}$$

$$\text{LnQFS} = 4.478 + .5146 \text{ LnKFS} + .4642 \text{ LnLFS}$$

(5.004) \*\*\*      (2.179) \*\*      (2.834) \*\*\*

$$R^2 = .73, \quad \text{Adjusted } R^2 = .69$$

$$F = 18.10 \quad \text{D. f.} = 24$$

$$\text{No of observation} = 27 \quad \text{Returns to scale} = .97$$

\*\*\* is used at 1% level of significant on a two tail distribution.

\*\* is used at 5% level of significant on a two tail distribution.

\* is used at 10% level of significant on a two tail distribution.

Now we consider the result of equation no. (3) that exhibit the result of the estimation of C-D production function for Finished stage of manufacturing of leather. The estimated coefficients of labor and capital are moderately significant. The multicollinearity between the explanatory variables of capital and labor as is usual for cross-section data. The Coefficient of determination of the C-D model has been fitted well to the data can be known from the measures of 'goodness of fit' as indicate by  $R^2$ ,  $\bar{R}^2$  are reasonably significant and F statistics is highly significant. The partial elasticity of output with respect to capital (eq. No-3) is .514 reflects the fact that a 1% increase in the capital input holding the labor input constant leads to .51% increase in the output of Finished leather. On the other hand the partial elasticity of output with respect to Labor (eq. No-3) is .464 reflects the fact that a 1% increase in the labor input holding the labor input constant leads to .46% increase in the output of Finished leather.

The marginal productivity of Labor (MPL):

$$\begin{aligned} \text{(a) } MPL &= \frac{\partial Q}{\partial L} = A\beta L^{\beta-1} K^\alpha = \beta AL^{\beta-1} K^\alpha \\ &= \beta \frac{Q}{L} = \beta(\text{APL}) \text{-----(5)} \quad (\text{Koutsoyiannis 1979, p-75}) \end{aligned}$$

Where APL= Average productivity of Labor

Similarly the marginal productivity of Capital (MPk):

$$\text{(b) } MPK = \alpha \frac{Q}{K} = \alpha(\text{APK}) \text{-----(6)} \quad (\text{Koutsoyiannis 1979, p-75})$$

Where APk= Average productivity of Capital

Factor intensity: In a Cobb-Douglas function factor intensity is measured by the ratio  $\frac{\beta}{\alpha}$ . The higher this ratio the more labor intensive the technique. Similarly the lower the ratio  $\frac{\beta}{\alpha}$  the more capital intensive the technique. (Koutsoyiannis 1979, p-76)

The Efficiency of Production:

The production function is basically an engineering or technical relation showing how inputs are transformed or converted into output. It also shows the maximum amount of output that can be produced with a fixed amount of resources like land, labor, capital, raw materials, energy or even entrepreneurial talent. So it is also an efficiency relation. (Mukherjee 1996 p-547)

The efficiency in the organization of the factors of production is measured by the coefficient A. Intuitively it is clear that if two firms have the same K, L,  $\alpha$  and  $\beta$  and still produce different quantities of output, the difference can be due to the superior organization and entrepreneurship of one of the firms, which results in different efficiencies. The more efficient firm will have a larger A than the less efficient one. (Koutsoyiannis 1979 p-76)

### Efficiency of Allocative Resources:

We are able to calculate the average and marginal productivities at the mean level of inputs, considering labor by total number of workers. If we have average product, we can easily calculate marginal product after multiplying the average product by partial elasticity of output with respect to inputs (labor and capital input).

**Table1: Average, Marginal and Factor Intensity**

Stage of Production	Average Production		Marginal Production		Factor intensity $(\frac{\beta}{\alpha})$
	Capital	Labor	Capital	Labor	
Wet-Blue Stage	40.32	62.16	20.04	32.05	1.03
Crust Stage	13.56	57.21	5.95	31.47	1.25
Finished Stage	5.65	24.42	2.91	11.34	.90

We can see from the Table-1, marginal products- both of labor and capital are lower than average products. Labor intensities are higher both in wet-blue and crust stages but low in finished stage. It means that finished stage is capital intensive stage and wet-blue and crust stages are labor intensive. The more efficient firm will have a larger A than the less efficient one. We can see from the above table that the production efficiency is increasing and it is in highest position in finished stage. The production efficiency is in the best position in finished stage due to skilled labor involvement in production process.

### Findings

The average products of capital and labor in the Wet-blue are Tk 40.32 and Tk. 13.56, respectively. The average products of capital and labor in the crust stage are Tk 5.65 and Tk.62.16, respectively, while the average products of capital and labor were found to be Tk 57.21 and Tk 24.42, respectively in the finished stage. The marginal products of capital and labor in the Wet-blue; Crust and Finished stages are Tk 20.04 and Tk 5.95; Tk 2.91 and Tk 32.05; and Tk 31.47 and Tk 11.34, respectively. The production efficiency of capital and labor in the Wet-blue, Crust and

Finished stages are 3.351, 3.503, and 4.478, respectively. The factor intensities of capital and labor in the Wet-blue, Crust and Finished stages are 1.03, 1.25, and 0.90, respectively. This suggests that the marginal products- both of labor and capital are lower than average products. Labor intensities are higher both in Wet-blue and Crust stages but low in finished stage. It means that finished stage is capital intensive stage and Wet-blue and Crust stages are labor intensive. The above also suggests that the production efficiency increases as the production progress to the higher stages and it is the highest in finished stage. Since skilled labor are used for production in that stage.

### **Policy Recommendations**

Following actions are recommended to help sustainable development and successful operation of the tanning process:

- The Government should introduce leather and leather product-related training programs in different institutions for skilled manpower for leather and leather products industries. Institutions should offer courses in leather tooling, designing of footwear, leather goods, leather garments, etc.
- The Government should encourage establishment of new units as well as BMRE of the existing units for value addition items viz.; finished leather, footwear and leather goods to enhance export earnings.
- An interim alternative program could be undertaken by way of import of wet-blue hides and skins and also raw wet salted to fulfill the deficiency raw hides and skins inside the country.

While various pragmatic policies were adopted by the government for bringing in qualitative changes in the performance of the sector, the following seem to be the current burning issues, which need to be resolved on a priority basis to help augment export earning of this sector:

- Significant financial support is needed for growth of new ventures, as leather goods project is very much capital intensive.

- Measures should be taken to pick up inadequate supply of skilled workforce for production of leather and leather goods.

### **Concluding Remarks of the Study**

Leather industry in Bangladesh constitutes a vital sector of export and plays a very important role in socio-economic life of our country. It is mostly labor-intensive and has concentrated mainly at Hazaribagh area, Dhaka. There is co-existence of conventional and modern units, large, medium small, and cottage units with or without contemporary techniques of the production process. But it has enormous growth potential for sustainable development of the country. It is able to make significant contribution to foreign exchange earnings, economic restoration and prosperity of the economy. Moreover Bangladesh is at marked advantages in leather production since it has the large livestock population within the country.

However, it requires significant technical and marketing assistance for development and expansion of finished leather and leather products, which can be achieved through establishment of joint venture or technical collaboration with buy-back arrangements with potential foreign partner especially at market places. This would ensure a transfer of up-to-date knowledge, skill and understanding and would improve the quality of leather products. Without this kind of development support, the Bangladesh leather manufacturing industry will only be able to continue to produce low quality leather goods which will fail to compete in international market. To enable the leather sector in Bangladesh compete successfully in the international market, there is a need for both short-term and long-term technical input, and development is needed in factory floor production and management training. Investment climate including law and order situation of the country is needed to be improved to attract investors.

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## Determinants of Adoption Decision of Hybrid Paddy in Rangpur District of Bangladesh: An Econometric Analysis

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### Abstract

*The study aims at investigating the determinants of farm-level adoption pattern of hybrid rice varieties. Empirical data were collected from 200 farmers via questionnaires. Among the respondent farmers, the majority (56.50%) have adopted hybrid rice variety. In this paper a Logistic Regression Model is employed to explain the contribution of the determinants of HYRV adoption decision in Bangladesh. The effects of variables on the adoption decision are determined within the model. Results from our final model indicate that variables- age, education level, experience, training, farm size, family income, fertilizer cost and extension service are significantly associated with the decision of the farmers to adopt hybrid rice variety. Findings show that education level, experience, training, farm size, extension service have positive effect and age, fertilizer cost and family income have negative effect on adoption rate. Hybrid paddy increases the productivity of agriculture sector and meets-up the additional demand for rice. So, the government and non-government organization should come forward to provide agriculture extension services and training to the farmer.*

### Introduction

Bangladesh is an agriculture dependent country in South Asia with a population of around 150 millions. The major source of livelihood of the people of Bangladesh is agriculture. It employs nearly 60% of labour force and contributes one third of gross national product of the country. Rice is the principle crop of Bangladesh and staple food of the people. Rice production dominates the farming system of Bangladesh, accounting for 75% of gross cropped area (BBS, 2001). It provides nearly 48% of rural employment, about two-third of total calorie supply and about one-half of the total protein intakes of an average person in the country. Rice sector contributes one-half of the agricultural GDP and

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one-sixth of the national income in Bangladesh. Almost all of the 13 million farm related families of the country grow rice. Rice is grown on about 10.5 million hectares which has remained almost stable over the past three decades. About 80% of the total irrigated area is cultivated for rice production. Thus, rice plays a vital role in the livelihood of the people of Bangladesh. Total rice production in Bangladesh was about 10.59 million tons in the year 1971 when the country's population was only about 70.9 millions. However, the country is now producing about 25.0 million tons rice to feed her 150 million people. This indicates that the growth of rice production was much faster than the growth of population.

**Table 1: Hybrid Rice Adoption Rate in Bangladesh by Division in 2011**

Division	Adoption Rate (%)
Barisal	0.00
Chittagong	6.02
Dhaka	5.35
Khulna	9.74
Rajshahi	16.08
Rangpur	15.34
Sylhet	5.62

**Source: IFPRI (2012).**

This increase in rice production has been possible largely due to the adoption of hybrid and modern rice varieties on around 66% of the rice land which contributes to about 73% of the country's total rice production. Adoption of hybrid rice varieties is higher in Rajshahi and Rangpur divisions. Hybrid rice adoption rate is shown division-wise in Table-1 above. However, there is no reason to be satisfied. The population of Bangladesh is still growing by two million every year and may increase by another 30 million over the next 20 years. Thus, Bangladesh will require about 27.26 million tons of rice for the year 2020 (MoA & BRRI, 2012). During this time total rice area will also shrink to 10.28 million hectares. Rice yield therefore, needs to be increased from the present 2.74 tonnes/ha to 3.74 tonnes/ha (MoA & BRRI, 2012).

Rapid population growth, increased food demand, and urbanization are the main reasons which have created tremendous pressure on agricultural land, making it an increasingly scarce resource. As a result agricultural land per capita is decreasing over the years in Bangladesh. Food security, therefore, remained as an important concern since the independence of Bangladesh. The government of Bangladesh imports a large amount of rice from abroad every year to meet up the domestic demand. Research and development (R&D) and crop management with adoption of hybrid variety of rice is the logical way to raise the gross production of food using the limited land resources. In Bangladesh introduction of using modern high-yielding varieties (HYV) of rice date backs from 1968, but the rate of adoption remained low until 1975-76. The major sources of growth of food grain production in the 1970s were the expansion of crop area and increased yield of wheat. Rapid distribution of rice HYVs took place only after mid-1980s with the liberalization of policies regarding the procurement and distribution of agricultural inputs, and reduction of import duties on agricultural equipment (Hossain and Akash, 1994).

The potential and optimal yield of hybrid paddy depends on the inputs usages during paddy production and requires suitable production environments and proper knowledge of inputs application like amount of fertilizers, pesticides and irrigation. As most of the farmers of Bangladesh are illiterate and poor, they are not able to follow the input using techniques and timing of input use for paddy production. As a result farmers do not get optimal amount of production from adoption of hybrid variety. Since the ending of the 1960s, Bangladesh has pursued a policy of rapid technological progress in agriculture, leading to the diffusion of a rice-based Green-Revolution technology package. As a result, farmers have concentrated on producing hybrid varieties of rice all year round covering three production seasons- namely, Aus(pre-monsoon), Aman (monsoon) and Boro (dry winter) particularly in areas that are endowed with supplemental irrigation facilities. Several studies were conducted on the household income, labor demand, per unit yield, institutional change of land tenure system, land degradation, and other socio economic constraints of hybrid variety paddy farming in Bangladesh in last three decades. However, study on the determinants of adoption decision of hybrid variety paddy production is quite insufficient in Bangladesh. Therefore, a comprehensive study is required

to see the influences of various determinants of adoption decision of hybrid varieties in paddy production of Bangladesh. The objective of this study is to explore and estimate the determinants of adoption decision of hybrid varieties in paddy production in Rangpur district of Bangladesh and to draw the implication of the results and findings and also to draw the forward policy suggestions.

### **Literature Review**

Extended studies have been done on different aspects and issues of hybrid paddy. Some literatures are synthesized in the following sections.

Barmon et. al (2009) found that potential yield of hybrid paddy is comparatively higher than modern variety of paddy that mainly influences the farmers to adopt hybrid paddy. Education of the farmers, family size, land ownership and lack of proper information of hybrid production has significant impact on adaption decision of hybrid paddy in Chanchara village of Jessore District. Hossain et. al. (2001) studied the adoption pattern, differential performances, relative profitability and constraints to adoption of two hybrid rice varieties-Alok-6201 and Sonar Bangla (CNSGC 6) introduced during 1999 Boro season in Bangladesh. Findings showed that farm size had negative but education had positive effect on adoption rate. Grain yield of hybrids were 14% higher than that of HYVs though Sonar Bangla did much better than Alok-6201. Input costs of hybrids were 23% higher. Profitability of Sonar Bangla was higher but that of Alok 6201-was lower than that of HYVs. Constraints to hybrid rice adoption included external dependence and higher seed cost, better management skill, input intensity, higher incidence of pests and diseases, inadequate yield gain and lower head-rice recovery.

Vien and Nga (2009) analyzed the adoption decision of hybrid rice production in the red river delta area of China. The study used Logit model to estimate the effect of determinants of adaption decision of hybrid paddy. The estimated result found that chemical fertilizer was generally used more on Chinese hybrid rice and this rice had the highest yield. The study also found that there were a number of factors which determined the adaption decision of hybrid rice by farmers. They include the level of experience and education of household heads, the socio-economic condition of the farmers, the number of labors in a household, the time of the year and the amount of hybrid rice yields. Hybrid rice seemed to be concentrated in households

who had less experience, education and socio-economic condition classified as poor. Li, Xin, and Yuan (2010) found that hybrid rice cultivation were more than half of all area under rice cultivation in China. It has contributed significantly to increasing national rice yields and output. These contributions have, in turn, contributed to improve food security by feeding an estimated 60 million additional people per year in China. Hybrid rice in China is heralded by many as one of the nations' great agricultural successes. Janaiah and Hossain, (2003) showed that that hybrid rice adoption is moving slowly in Asia, particularly in South Asia, where the overall growth in rice yields has been slow in recent decades. A range of technical challenges, market failures, and policy constraints have limited the development.

## Methodology

### *Selection of the Study Area and Data Collection*

Five Upazilas of Rangpur District were selected for the present study. The selected Upazilas are Rangpur Sadar, Gangachara, Badarganj, Kaunia, and Pirgachha. Then from each Upazila, five Unions were selected taking one from each Upazila. After selecting the unions, two villages were selected from each union and thus ten villages were selected for the analysis. In the next, list of farmers was collected from the union office and 200 farmers were selected randomly. The empirical data were collected by personal interviews conducted with the respondent. The authors and five trained data collectors conducted the interviews. The population analyzed in this study consisted of farmers from the ten villages who grew rice, wheat etc.

**Table 2: Selected Upazilas, Unions and Villages**

Upazilas	Unions	Sample	Villages	Sample
Rangpur Sadar	Uttam	40	Hazipara	20
			Kutialpara	20
Badarganj	Damadurpur	40	Shapur	20
			sterpara	20
Gangachara	Gangachara,	40	Nobonidus	20
			Gutaka	20
Kaunia	Balapara	40	Balapara	20
			Vutsara	20
Pirgachha	Parul	40	Shaorifsundor	20
			Chakla	20
Total = 5	5	200	10	200

### *Conceptual Model: The Logistic Regression Model*

Previous empirical and theoretical research indicated that the logistic curve or the S-shaped diffusion path characterizes fairly well the adoption pattern of new agricultural technologies [Griliches (1957), Feder and O'Mara (1982), Jarvis (1982) and Rogers (1983)]. According to the hypothesis, when new technology is introduced firstly diffusion is slow. Through the process of "demonstration effects" generated by the early adopters (the most progressive), diffusion increases rapidly as information and experience spreads to other producers. Eventually, after all of the potential adopters have been exposed to and adopted the new technology, a long-run equilibrium is reached. The logistic function traces out this path and defines the rate of adoption and the long-run equilibrium.

Logistic regression analysis is a unit/multivariate technique which allows for estimating the probability that an event occurs or not, by predicting a binary dependent outcome from a set of dependent variable. A Logit model was used to estimate the effects of various quantitative and qualitative factors on the adoption decision of modern variety of paddy production in Rangpur District. When the dependent variable is binary, the linear probability model (LPM), Logit and Probit model can be used (Ramnathan 1998; Green 2000). Logit and Probit model are quite comparable; however the logistic has slightly flatter tails. Thus the choice between the two is one of the conveniences and ready availability of computer programs. On this score, the Logit model is usually used in preference to the probit (Gujirati 1995). However, Logit model have been widely used in order to explore the factors affecting farmers' decision in adoption studies (Jarvis, 1981; Feder and O'Mara 1992; Rogers, 1983; Adsena et al., 2000; and Vanderveer, 2001).

The Linear Probability Model can be written as

$$P_i = E(Y=1/ X_i) = \beta_1 + \beta_2 X_i$$

Where,  $X_i$  is the independent variables and  $Y=1$  means that the farmers adopt hybrid variety of rice. Let us consider the following representation of the adoption decision of the farmer.

$$P_i = E \left( Y = \frac{1}{X_i} \right) = \frac{1}{1 + \exp^{-(\beta_1 + \beta_2 X_i)}} = \frac{1}{1 + \exp^{(-Z_i)}} \dots\dots\dots(1)$$

Where,

$$Z_i = \beta_1 + \beta_2 X_i$$

This equation (1) is known as the (cumulative) logistic distribution function. Here  $Z_i$  ranges from  $-\infty$  to  $+\infty$ ;  $P_i$  ranges between 0 and 1;  $P_i$  is non-linearly related to  $Z_i$  (i.e.  $X_i$ ), thus satisfying the two conditions required for a probability model. In satisfying this requirement, an estimation problem has been created because  $P_i$  is non-linear not only in  $X_i$  but also in the  $\beta$ 's. This means that one can't use OLS procedure to estimate the parameters.

Here  $P_i$  is the probability of adopting hybrid variety of rice and is given by

$$P_i = \frac{1}{1 + \exp^{(-Z_i)}}$$

Then  $(1-P_i)$ , the probability of not adopting hybrid variety, is

$$1 - P_i = \frac{1}{1 + \exp^{(Z_i)}}$$

Therefore, it can be written,

$$= \frac{1 + \exp^{(Z_i)}}{1 + \exp^{(-Z_i)}} \dots\dots\dots(2)$$

Where,  $\frac{P}{1 - P_i}$  is the odds ratio in favor of adopting a modern rice variety

i.e. the ratio of the probability that a farmer will adopt modern variety to the probability that he will not adopt a modern variety.

To find an appropriate adoption curve, it is natural to start with our earlier logistic function and modify it. Taking natural log the logistic function (2) can be written as

$$L_i = \ln [P_i / 1 - P_i] = \beta_1 + \beta_2 X_i \dots\dots\dots(3)$$

That is, the log of the odds ratio is not only linear in  $X_i$  but also linear in the parameters.  $L$  is called the Logit.

### *Empirical Model*

The empirical relationship between dependent variable and a set of explanatory variables on the adoption of hybrid variety of paddy is specified using the following relationship

$$L_i = \ln [P_i / (1 - P_i)] = \beta_1 + \beta_2 \text{ AGE} + \beta_3 \text{ EXP} + \beta_4 \text{ EXT} + \beta_5 \text{ FEC} + \beta_6 \text{ EDU} + \beta_7 \text{ FAS} + \beta_8 \text{ TFI} + \beta_9 \text{ TFM} + \beta_{10} \text{ TRA} + u_i \dots \dots \dots (3)$$

Where, the dependent variable  $L$  is the log odds ratio in favor of adopting hybrid rice variety. AGE = age of the farmer, EXP = experience of the farmer, EXT = agriculture extension service, FEC = Fertilizer and chemical cost, EDU = education level of farmer, FAS = farm size, TFI = total family income, TFM = total family member, TRA = training of the farmer

$\beta_1$  is constant,  $\beta_2, \beta_3, \dots, \beta_{10}$  are regression coefficients and  $u_i$  is the random error which is normally distributed. The coefficients of the regression model were estimated by applying the maximum likelihood estimation (MLE) technique.

### *Measurement of Dependent and Explanatory Variables*

The dependent variable was dichotomized with a value of 1 if the farmer was an adopter of hybrid paddy and 0 otherwise. The explanatory variables were the age, education level, experience, training, extension service, farm size, fertilizer cost, total family income, and total family member. Table 3 lists definitions of the variables and measurement methods.

**Table 3: Description of the Variables Used in the Logit Model**

Variable	Type	Measurement
Dependent variable ( $Y_i$ )	Dummy	1 if farmer has adopt modern variety, 0 otherwise
Age of household head	Continuous	Age of the household head (years)
Education of household head	Continuous	Formal education of the household head ( years of schooling)
Farming experience of household head	Continuous	Farming experience of household head (years)

Variable	Type	Measurement
Farm size	Continuous	Amount of land under cultivation (decimal)
Household income	Continuous	Amount of money earned by the family members in a year (000 BDT)
Extension services	Dummy	1 if farmer receive agriculture extension services, 0 otherwise
Training	Dummy	1 if farmer get training , 0 otherwise
Fertilizer cost	Continuous	Total fertilizer cost (tk.)
Total family member	Continuous	Total number of persons in the family

## Result and Discussion

### *Descriptive Statistics of the Variables*

The characteristics of respondent farmers are listed in Table 4. The average age of the farmers was 44.21 years whereas the average education was 6.62 years of schooling and average farming experience was around 23.38 years. The average farm size was small was 145.93 decimal. There was an average of 6.075 members in each household.

**Table 4: Descriptive Statistics of Explanatory Variables by Adopter and Non-adopter Groups**

Variable (units)	Mean			SD (all farmers)
	All farmers (200)	Adopters (113)	Non- adopters (97)	
Age of farmers (yrs)	44.21	44.73	43.53	12.79
Education of household head(yrs)	6.62	6.27	7.06	4.68
Family member	6.08	6.32	5.76	2.81
Farming experience of household head(yrs)	23.38	23.70	22.97	12.37
Extension services	0.44	0.53	0.32	0.50
Farm size (decimal)	145.93	167.23	118.28	183.05
Household income (000 BDT/yrs)	61219.75	69897.79	49948.28	65454.86
Fertilizer cost (tk.)	3284.57	3194.15	3402.02	4551.54
Training of the farmer	0.33	0.37	0.28	0.47

Source: Authors' own calculation

It is also found from the table that average household income was around 61219 BDT (Bangladeshi currency). The average household's access to agriculture extension service was 0.44 and average training of the respondent farmers was 0.33. There are significant differences between adopter and non-adopter farmers of hybrid paddy farming in terms of all socio-economic factors.

### ***Regression Result of Hybrid Farming Adaption***

An important purpose of this study was to explore the important factors that influence farmers' decisions to adopt hybrid farming. To this end, we performed Logistic regression analysis (Table 5). The obtained log likelihood ratio is 49.37 and chi-square statistic for the goodness of fit of the model is 168.03, significant at the 1% level. The pseudo R<sup>2</sup> value of the model is 0.59. Thus, the overall model is significant and the explanatory variables used in the model are collectively able to explain the farmers' decisions regarding the adoption of hybrid farming. It is appeared from Table 5 that all the coefficients of the variables in the Logit model are statistically significant except farmers' total family member (TFM) for adoption of hybrid paddy in Rangpur District of Bangladesh.

The age of a farmer can be either generate or erode confidence in crop production. It is also evident that a farmer with more experience can become more or less risk averse when taking decision regarding input use in hybrid paddy production. Some studies found that younger farmers are more informative about farm production and they easily bear production risk (Kebede et al., 1990; Polson and Spencer, 1991). The contradictory results were also found (Adesina and Baidu-Forson, 1995). Thus, the expected sign on farmer's age and experience may positive or negative in the empirical model. The coefficient of farmers' age has negative impact on adaption decision and the coefficient of farmers' experience has positive impact on adoption decision. The coefficient of age (-0.1354) and experience (0.3387) reflects that farmers with higher age are less likely to adopt hybrid rice and farmer with higher experience are more likely to adopt hybrid paddy compared with those with a low experience. Agriculture extension service is another important factor in terms of adoption decisions. The regression result shows that higher extension service influences the farmers to adopt hybrid variety.

**Table 5: Logit Regression Results of Hybrid Farming Adaption**

Variable	Coefficient	z-statistic	Prob.
C	-0.8986**	-1.98568	0.0471
AGE	-0.1354*	-1.954361	0.0507
EXP	0.3387**	2.213068	0.0269
EXT	0.2864***	2.672466	0.0075
FEC	-0.1215**	-1.986233	0.0470
EDU	0.2357***	-2.594377	0.0095
FAS	0.1565**	1.998408	0.0457
TFI	-0.1666**	1.976204	0.0481
TFM	0.2809	1.457265	0.1450
TRA	0.1280**	2.376466	0.0175
	X2 statistic with 14df 168.03(p < 0.000)	Pseudo R2 0.59 ratio 49.37	Log likelihood

**Source: Authors' own calculation. Note. \*\*\* Significant at 1% level; \*\* Significant at 5% level; \* Significant at 10% level**

Education increases farmer's ability and knowledge for crop production. An educated farmer is more informative and bears all types of production risk. The coefficient of education (0.2357) has significant positive impact on adoption decision of cultivating hybrid paddy indicating that comparatively educated farmers are more likely to adopt hybrid paddy. Training of the farmer increases their knowledge about cultivation. The coefficient of training of farmer (0.1280) indicating that trained farmers are more likely to cultivate hybrid paddy. Large families are able to provide the necessary labor for timely land preparation, weeding, and harvest. Moreover, large family needs more rice to feed the family members. Therefore, they adopt more hybrid paddy. The coefficient total family member (0.2809) has positive impact on adoption decision but it is not statistically significant. The coefficient of farm size is statistical significant in the logit model for adaption decision

of hybrid paddy in Rangpur District of Bangladesh. The coefficient of farm size (0.1565) indicates that the owner of the large farm is more likely to adopt hybrid paddy. But the sign of fertilizer and chemical cost and family income are negative. Therefore they have negative effect on the adoption decision.

### ***Conclusion and Recommendations***

Hybrid paddy has significant impact on productivity. It is a high yielding variety and hence hybrid farming lead to improved income of the farmers and it increased the supply of food. Therefore, it is essential to make farmers aware of the benefits of hybrid farming via extensive education campaigns. Both public and NGO extension services are important in terms of farmers' decisions regarding the adoption of hybrid paddy farming. Hybrid paddy increases the productivity of agriculture sector and meet-up the additional demand for rice. So, to rapidly increase the rate of adoption of hybrid paddy farming in Bangladesh, government and non-government organizations should come forward to provide agriculture extension services and training to the farmers.

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## **Inflation and Economic Growth in Bangladesh: A Study on the Trend**

Shamsul Islam Latifi\*

### **Abstract**

*The link between inflation and economic growth has drawn attention of policy makers, macro-economists and central bankers of many developed, developing and least developed countries of the world. A debate continues on the issue whether inflation helps or hinders economic growth or not. Tobin and Mundall predict a positive link between the rate of inflation and the rate of capital accumulation. They argue, since money and capital are substitutable, an increase in the rate of inflation increases capital accumulation by shifting portfolio from money to capital and thereby stimulating a higher rate of economic growth. Again, Fischer and Modigliani suggest a negative and nonlinear relationship between the rate of inflation and economic growth through the new growth theory mechanisms. To them, inflation restricts economic growth by reducing efficiency of investment rather than its level. This paper discusses the link between inflation and economic growth in Bangladesh. The author has studied average inflation rate and average growth rate of 1996-97 to 2003-04 and 2004-05 to 2011-12 in Bangladesh. Data analysis of first eight years suggests that a low degree of positive relations exists between inflation and economic growth. Average inflation growth rate is found 4.68 percent and average growth rate is 5.30 percent. From the data analysis of second eight years (2004-05 to 2011-12) it is found that a low degree of positive co-relation exists between two. Rate of inflation and economic growth. Average inflation rate is found 8.05 and average growth rate is 6.28. However, Bangladesh should be cautious about higher increment of inflation rate and it should not exceed ten percent. The author opines that low rate inflation trigger economic growth but once the economy achieves faster growth, inflation may affect sustainable growth.*

### **Introduction**

In Bangladesh, the natural and mineral resources are not explored and used properly. Moreover, our workforce is not highly skilled. As a result, the economic development and growth have not been achieved to meet the aspirations of the people and of the society. To solve the economic problems a huge development work at all sectors is needed. Since the independence of Bangladesh, all the successive governments have tried to formulate and implement various development plans. Regrettably enough, the successive governments did not succeed in implementing their programs fully.

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However owing to the development plans and programs the government expenditure has increased gradually and the amount of public budget have been extended correspondingly. As a result, the money supply increases and inflationary situation crops up, and so the question arises whether this helps or hinders economic growth. There has been an extensive study to focus on the relationship between inflation and economic growth. However, in the present study regarding the inflation and economic growth the author has targeted total sixteen years from (1996-97 to 2011-12) divided into two parts. First part includes the years of (1996-97 to 2003-04) and the second part is in the years of (2004-05 to 2011-12).

### **Objectives**

- to define inflation and economic growth for the better understanding of the subject matter;
- to identify the causes of inflation and constraints on the way of economic growth;
- to observe the average inflation rate and growth rate of total sixteen years in the context of Bangladesh (1996-97 to 2011-12); and
- to show the link between inflation and economic growth in the context of Bangladesh.

### **Methodology**

Secondary data were collected from different sources such as BBS, Bangladesh Bank, national dailies, Website, etc. Available literature on the relevant subject was reviewed. Different sections of people were interviewed. In addition, the author watched price level of essential goods and the increment of income of the people, higher cost of transport communication and living standard of the people.

### **Theoretical clarification of the dimensions of inflation and economic growth**

Inflation refers to a steady increase in the supply of money. In other words, it is a situation where demand persistently exceeds supply. It is said that inflation exists when there are continuous increase in the price level for increase in the aggregate demand. Inflation occurs when the

general level of prices is rising. According to Professor Pigou, "Inflation exists where money income is expanding more than in proportion to income earning activity". Another economist Crowther says that "Inflation is such a situation when too much money chases too few goods". There are three main features of inflation (a) it is a process of rising prices (b) It is initiated by some change which makes it impossible to satisfy the whole of the demand which is forthcoming of existing price, so that initial price rises occur and (c) It is propagated by the reactions of buyers or group of buyers to the initial price rises so that farther rise in price is induced.

**Different types of inflation based on causes or symptoms are perceivable**

1. Regarding causes: Currency, credit, wage, profit, and deficit induced inflation, demand pull and cost push inflation.
2. As per the rate of increase in price level, it may be classified into mild, walking and hyper or galloping inflation.
3. According to control base there are open and suppressed inflation. Keynes opines that there are true and partial inflation. The other economist explains the inflation on expected and unexpected inflation. Lewis Hunter (1972) discusses, "Where Keynes Went Wrong". Keynes says that the way to bring interest rates down is to create more money. Government can and should bring interest rates down to a more reasonable level by increasing the 'quality' of lendable funds. This is done by creating new money that is made available to banks to lend. The new money will tend to create inflation. Inflation leads to higher, not lower, interest rates. There arises further a question. What will happen to interest rates where other prices start to rise? Lenders will of course notice that the money coming back to them at the end of the loan will not buy as much as it once did. This will cause them to stop lending or lend less, which would tend to raise interest rates. Rates may even rise before inflation appears if lenders look into the future and take steps to protect themselves.

This is an example of what economists call an "unintended consequence". The attempt at lowering interest rates by injecting new money into the economy tends to lead, sooner or later, to higher rates. Swedish economist

Knut Wicksell (1851-1926) initially developed this point.

In the US and elsewhere, printing money throughout the 1960s and 1970s led to very high inflation, which in turn led to very high long term interest rates.

### *Masked Inflation*

Economist Ludwig von Mises<sup>11</sup> (1881-1973) pointed out that there are times when consumer price inflation is harder to discern. Mises was thinking of the 1920s, but his observation applies to the 1990s and much of the 2000s as well. P-95

Hunter Lewis says that it is rich, not poor, people who benefit from inflation. It is known to us that inflation does not end poverty. It just makes poor people poorer, as numerous economic studies are done (Dr. Dollar and A. Karry, "World Bank Study" cited in Forbes (Aug 2001): 77. If any one is going to make money from inflation, it is rich people, especially Wall Streeters and other financial insiders where Keynes Went Wrong<sup>12</sup>", Lewis Rich people understand what is happening. They understand the system. President Andrew Jackson foresaw all this in the 19th century. He abolished the United States, first central bank, because he observed rich people taking control of it and using it for their own ends. The creation of modern central banks has facilitated Keynes's Inflation. The idea of the governments successfully creating a budget surplus in order to combat inflation is completely fanciful.

The great inflation of the 1970s again provides some real life evidence P-110 of Hunter Lewis' book. Inflation brings not only more unemployment, but suboptimal employment, says W. H. Hutt. From the observation, it is found that in Bangladesh all varieties of causes exist. The reasons attributed for the incidence of inflation are syndication problem, unstable political environment, money supply increase, production increase, higher population growth rate, production cost increase, food problem, natural calamities change, international market effect, mismatch between demand and supply of goods and services, government expenditure increase, salary and wage increase.

Bangladesh being a food importing country, any rise in prices of food items in the world market influences immediately the domestic prices of those

goods, such as rice, wheat and edible oil increase significantly in the international market. Therefore, domestic prices of those items have gone up. Besides, there is the growth of money supply that is directly related to the price situation. Inflation is a monetary phenomenon. Thus, it is explained by a host of economists that the excessive supply of money in the economy may cause inflation. This is why, the government must be cautious in framing monetary policy. The Bangladeshi currency/taka has depreciated against its international currency, US dollar over the past several years. But the Indian rupee has depreciated higher than that. Consequently, the relative position of the Bangladeshi currency has suffered having its impact on the economy. This is because; India is the major source of import for Bangladesh. Fuel prices are yet another factor that impacts the domestic price situation. If the fuel prices go up that impacts the prices of goods and leads to high cost of irrigation, raises the cost of agriculture production, increases the cost of transportation, etc. The issue of growth of remittance has links with inflation. There has been a steady rise in remittance in flow over the last few years. Such inflow contributes to demand pull inflation in Bangladesh. An extreme form of inflation is hyper inflation or galloping inflation which was found in Germany in 1923 during First World War. And by the end of that year, prices were one million, million times greater than their pre-war level. Towards the end of 1923 paper money was losing half or more of its value in one hour and wages were fixed and paid daily. The price of a news paper rose to 200,000,000,000 marks (One mark had been worth about 51 in 1914).

In Bangladesh, the price level of essential goods specially vegetables, fish, meat, etc. and transport cost are increasing rapidly as compared to the increment of the people's income. The law and order situation of the country often becomes bad. It is reported by (B.B.S) Bangladesh Bureau of statistics that the overall inflation in Bangladesh dropped to 5.21 percent in July, 2012 in the light of a new base year that was adopted to measure the consumer price index (CPI). But the non-food inflation still remained high at 10.9 percent. The BBS calculated officially the country's consumer price index and the inflation rate, based on both new and old base year. The BBS introduces 2005-06 as the new base year, instead of 1995-96 by revising the product baskets and their weights for calculating inflation.

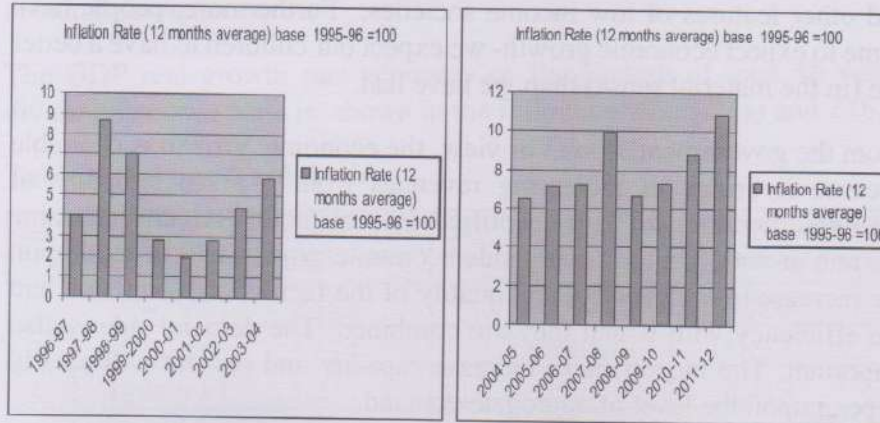
But the national statistics agency will keep providing data on inflation based on the old base year until December next. Ahsan H Mansur, executive director of the Policy Research Institute (PRI) of Bangladesh told the FE: “The new base year will reduce the rate of inflation due changes in weights and revision of the products.” He also said that BBS data collection methodology and analysis based on the new base line are close to best international practices.<sup>15</sup> Dr. Mostafizur Rahman, Executive Director of the country’s another think- tank Center for Policy for Dialogue (CPD) told the FE “The food inflation remained low as per the new base year following a good harvest of rice”. Rahman said non-food inflation remained high mainly because of the high house rents, transport cost and power prices\*. The inflation rate year to year is fluctuating without maintaining similarity. However, the rate of inflation in Bangladesh is quoted by the author which is measured by the consumer price index (CPI) from 1996-97 to 2003-04 and 2004-05 to 2011-12 on 12 months average. This may be shown by 12 months average in Table no.1 (a) and 1(b).

**16 Table (a)**

SL	Year	Inflation Rate (12 months average) base 1995-96 =100	SL No.	Year	Inflation Rate (12 months average) base 1995-96 =100
1.	1996-97	3.96	9.	2004-05	6.48
2.	1997-98	8.66	10.	2005-06	7.16
3.	1998-99	7.06	11.	2006-07	7.20
4.	1999-2000	2.79	12.	2007-08	9.94
5.	2000-01	1.94	13.	2008-09	6.66
6.	2001-02	2.79	14.	2009-10	7.31
7.	2002-03	4.38	15.	2010-11	8.80
8.	2003-04	5.83	16.	2011-12	10.88

**Table- 1(b)**

Table1 (a) can be shown through the following Table1 (b) can be shown through the Part diagram. following diagram



### Implications of Economic Growth

Economic growth implies the increase of per capita gross domestic product or other measure of aggregate income. Professor J.A Schumpeter says that “Economic Growth is a general and steady change in the change in the long run which comes out by gradual increase in the rate of savings and population”. According to Milton Friedman, “Economic Growth an expansion of the system in one or more dimension without a change in its structure”. Economics Growth represents the expansion of a country’s potential GDP or national output. Put differently, economics growth occurs when a nation’s production possibility frontier whither (PPF) shifts outward.

### There are four wheels or factors of economics growth

- Human resources (Labor, supply, education, discipline, motivation)
- Natural resources ( land, minerals, fuels, environmental quality )
- Capital Formulation (machines, factories, roods)
- Technology (science, engineering, management, entrepreneurship)

Growth is an important agenda of an economic policy as it is a key to higher standard of living. It is economic growth which makes it possible for millions of people to escape from the miseries of long hours of back-breaking toil, deplorable living condition, a low expectancy of life and other features of low income societies. Furthermore, people have come to expect economic growth- we expect our children to have a better life (in the material sense) than we have had.

From the government's point of view, the economic growth is desirable because it brings in increasing revenues from a given structure of tax-rates. Economists have identified several factors which determine the rate growth. On the supply side economic growth will depend upon the increase in the quantity and quality of the factors of production and the efficiency with which they are combined. The demand side is also important. The incentives to increase capacity and out put will clearly depend upon the level of aggregate demand.

There are some ways in which nation's productivity and potentials can be increased by adopting following measures, i.e. (1) Increased skills and education (2) economies of scale (3) investment (4) new technology (5) re-allocation of resources.

The policy measures may be used to influence the various factors which determine the growth. Fiscal and monetary measures can be used to stimulate private and public investment, research and development.

### **Analysis of the growth trend following inflation**

Bangladesh has been performing well in terms of economic growth over the last ten years or more. Its gross domestic product (GDP) base is not small in absolute volume terms. It is the 50th largest economy in a sample of 177 countries. Many developing countries have not grown faster than Bangladesh with bigger GDP volumes since early 1990.

We can explain the GDP real growth rate economy of Bangladesh through the table 212(a) and 2(b). In the calculation of the growth rate we have included 15 heads or sectors; these include (i) agriculture and forest (ii) fishery (iii) mineral resource (iv) industry (v) electricity, gas and water resource. (vi) Building construction (vii) whole sale and retail

## Inflation and Economic Growth in Bangladesh: A Study on the Trend

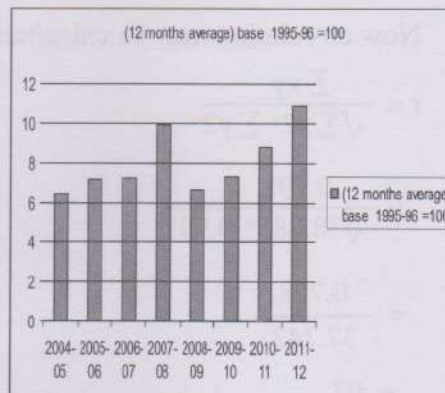
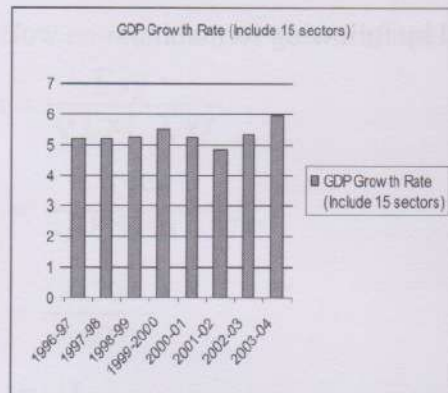
marketing (viii) hotel and restaurant (ix) transport, communication and maintenance (x) service of financial institutions (xi) real estate, renting and other business (xii) public administration and defence (xiii) education (xiv) health and social service (xv) community, social and personal service.

The GDP real growth rate economy of Bangladesh of total 16 years dividing into two parts is shown in the following tables 2 (a) and 2 (b):

**Table2 – (a) and Table2- (b)**

SL	Year	GDP Growth Rate (Include15 sectors)	SL No.	Year	GDP Growth Rate (Include15 sectors)
1.	1996-97	5.158	9.	2004-05	6.205
2.	1997-98	5.174	10.	2005-06	6.413
3.	1998-99	5.234	11.	2006-07	6.415
4.	1999-2000	5.510	12.	2007-08	6.132
5.	2000-01	5.217	13.	2008-09	5.934
6.	2001-02	4.839	14.	2009-10	6.142
7.	2002-03	5.310	15.	2010-11	6.142
8.	2003-04	5.942	16	2011-12	6.320

Table2 (a) can be shown through the following Bar diagram Table2(b) can be shown through the Bar diagram.



Source22

Bangladesh has successfully tackled the impact of global recession and attained growth which is visible from the above table. This also shows link between inflation and economic growth occurring in Bangladesh.

SL No.	Year	Inflation X	(x-x̄)	(x-x̄) <sup>2</sup> = x <sup>2</sup>	Growth	(y-ȳ)	Y <sup>2</sup>	xy
1.	1996-97	3.96	-0.72	0.518	5.158	-0.142	0.020	0.102
2.	1997-98	8.66	3.98	15.840	5.174	-0.126	0.015	-0.501
3.	1998-99	7.06	2.38	5.664	5.234	-0.066	0.004	-0.157
4.	1999-2000	2.79	-1.89	3.572	5.510	0.210	0.044	-0.396
5.	2000-01	1.94	-2.74	7.507	5.217	-0.083	0.006	0.227
6.	2001-02	2.79	-1.89	3.572	4.839	-0.461	0.212	0.871
7.	2002-03	4.38	-0.30	0.090	5.310	0.310	0.096	-0.093
8.	2003-04	5.83	1.15	1.322	5.942	0.642	0.412	0.738

**Table-3: The link between inflation and economic growth of 1996-97 to 2003-04 has been calculated.**

$$\sum x = 37.41 \quad \sum x^2 = 38.085 \quad \sum y = 42.384 \quad \sum y^2 = 0.991 \quad \sum xy = 0.798$$

$$\bar{X} = \frac{\sum x}{N} = \frac{37.41}{8} = 4.68 \text{ [Average inflation rate from 1996-97 to 2003-04]}$$

$$\bar{Y} = \frac{\sum y}{8} = 5.30 \text{ [Average growth rate from 1996-97 to 2003-04]}$$

Now co-relation may be calculated by following formula:

$$\begin{aligned} r &= \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \\ &= \frac{0.798}{\sqrt{38.085 * 0.991}} \\ &= \frac{0.798}{37.742} \\ &= .02 \end{aligned}$$

## Inflation and Economic Growth in Bangladesh: A Study on the Trend

From the above analysis it is found that there is a low degree of positive co-relation between inflation and economic growth in Bangladesh in the period of 1996-97 to 2003-04.

**Table-4: The link between inflation and economic growth of 2004-05 to 2011-2012 has been calculated.**

Sl. No.	Year	Inflation X	(x-x̄)	(x-x̄) <sup>2</sup> = x <sup>2</sup>	Growth	(y-ȳ)	Y <sup>2</sup>	xy
1.	2004-05	6.48	-1.57	2.46	6.20	-0.08	.006	0.126
2.	2005-06	7.16	-0.89	0.79	6.41	0.13	.016	-0.116
3.	2006-07	7.20	-0.85	0.72	6.41	0.13	.016	-0.111
4.	2007-08	9.94	1.89	3.57	6.13	-0.07	.005	-0.132
5.	2008-09	6.66	-1.39	1.93	5.93	-0.35	.122	0.487
6.	2009-10	7.31	-0.74	0.56	6.14	-0.14	.019	0.104
7.	2010-11	8.80	0.75	0.56	6.71	0.43	.185	0.323
8.	2011-12	10.88	2.83	8.00	6.32	0.04	.002	0.113

$$\sum x = 64.43 \quad \sum x^2 = 18.59 \quad \sum y = 50.25 \quad \sum y^2 = 0.371 \quad \sum xy = 0.794$$

$$\bar{X} = \frac{\sum x}{N} = \frac{64.43}{8} = 8.05 \quad [\text{Average inflation rate from 2004-05 to 2011-12}]$$

$$\bar{Y} = \frac{\sum y}{N} = \frac{50.25}{8} = 6.28 \quad [\text{Average inflation rate from 2004-05 to 2011-12}]$$

Now co-relation may be calculated by following formula:

$$\begin{aligned} r &= \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \\ &= \frac{0.794}{\sqrt{18.595 \times 0.371}} \\ &= \frac{0.794}{6.897} \\ &= .11 \end{aligned}$$

From the above analysis it is found that there is a low degree of positive link between inflation and economic growth in Bangladesh in the period of 2004-05 to 2011-2012.

### **Summary of the findings**

It is observed that the rate of inflation in Bangladesh based on consumer price index (CPI) from 1996-97 to 2003-04 is not similar. The lowest rate of inflation is found 1.94 (12 months average) in 2000-01 and 2.79 in 1999-2000 and 2001-2002. The highest rate of inflation was 8.66 in 1997-98 and 7.06 in 1998-99 respectively which have been shown in Table 1(a).

In Table 1(b) indicates that lowest rate of inflation is 6.48 in 2004-05 and highest rate of inflation is 10.88 in 2011-12 and 9.94 in 2007-08 respectively. From the above two tables, it can be concluded that in this country that the inflation rate has been increasing by degrees.

The Economist Intelligent Unit (EIU) 23 forecasts 6.3 percent GDB growth for Bangladesh. In the current fiscal year, far short of the government's estimate<sup>24</sup> of 7.2 percent. The Governor of Bangladesh Bank, Atiur Rahman said in Tokyo on Friday, 12th October 2012, that Bangladesh economy would grow by more than 6.5 percent in the current fiscal year. He further said the country was maintaining its growth, the inflation was going down and the exchange rate was stable. (The Daily Star, October 14, 2012.) Dr. Sadiq Ahmed remarks the estimated average inflation rate for FY12 is 10.6 percent, much higher than the sixth plan target of 7.5 percent. For the future monetary and fiscal policies need to be integrated so that the Treasury borrowing from Bangladesh Bank is restrained and the monetary growth rate was consistent with the 6th plan's inflation target. Proper implementation of the MPS for FY 13 is of critical importance for reducing inflation<sup>25</sup>.

### **Concluding remarks**

The link between the rate of inflation and economic growth remains fuzzy. Several empirical studies confirm the existence of either positive or negative relationship between these two variables. However, there is a consensus that low and stable inflation promotes economic growth.

From the study of total 16 years of data since in 1996-97 to 2011-12, it is found that the rate of inflation has increased without maintaining any uniformity. On the other hand, the growth rate has been increased very steadily. The impact of economic depression and recession still prevails all over the world. There is a saying when America sneezes the world gets flue. This is evident as the American financial crises have impacted many countries of the world. The global financial crises of September-October 2008 were a major on going financial crises, the worst of its kind since the great depression. It became glaringly visible in September 2008 with the failure merger of several large United States based financial firms. The financial crises could lead to record global unemployment with 20 million more people out of work by the end of 2009. Fortunately, as others were, Bangladesh was not affected heavily. It is due to the fact, Bangladesh is not industrially developed and it largely depends on agriculture. Our finance minister said in the budget speech 2012-13 that the agriculture sector would help continuously the process of our growth. If production of flood-draught- salinity resistant seeds, targeting of government assistance in the sector, provision of uninterrupted power supply for irrigation, and increased flow of agricultural credit continue, these will result in enhanced agricultural productivity, crop intensity and its diversification. It may be predicted that if the skill and efficiency of human resources is increased through the technical education and practical training, if the natural and mineral resources are explored and properly utilized, the rate of economic growth of the country will increase. The inflation rate has to be monitored continuously so that it cannot cross beyond 10% in 12 months average.

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## **Challenges and Responsibilities in Women's Potential Poverty: Context of Bangladesh**

*Syeda Umme Jakera Malik \**

### **Abstract**

Under the system of patriarchy, surviving against deficiency needs is not strongly practiced by educated women. Usually women are living on men kin or Husbands' gifted living way. Naturally in this way women are forced to live a life that is far from surviving, using networks and opportunities, self-development and so on. This is a way that makes university graduate women potentially poorer than university graduate men. Here potential poverty is defined as risk to be poor. By concerning this group this study has been run through highly educated women who are not absolutely poor but personally they are at risk to be poor. Based on a descriptive research aims of this article is to explore some challenges and responsibilities in protecting and preventing women's potential poverty.

### **Introduction**

Poverty is a broad discussion area but when we focus upon poverty phenomenon, at the first sight, flashes on the fulfilment of basic needs like, food, cloth, housing, health, education, and recreation then on self-development; a continuous process of self-actualization (International Poverty Centre, 2006). This has been shown in Maslow's theory Hierarchy of needs where he includes physical needs, security needs, social needs, self-esteem and self actualization (Maslow, 1987). In the modern society human beings have to use their manual or non-manual strength to fulfil their own basic needs and by doing that, one is swelling his/her strength. This creates a way of self-development. If we broadly discuss about women's poverty in Bangladesh, the most common factors which can be claim for women's poverty are early marriage, unacceptable status of job market, lack of family support for girl's schooling and so on (Buvinic, 1998, ADB, 2001, 2004,

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Efroymsen, et. al 2007). But if we give a look over university graduate women in Bangladesh then we will find, they are not forced to marriage at early age and they also get proper family support for education. Usually under the system of patriarchy, women are living on male kins or their husbands' gifted living way. Naturally in this way women are forced to live a life that is far from surviving, using networks and opportunities, self-development and so on (Malik, 2012). This is a way that makes university graduate women potentially poorer than university graduate men. Most of the earlier programs and policies on women's poverty were focused on either poor women or the low salaried employee. But it should be concerned that within the development of women's education, a new group exists whose are the highly educated women. In this regard advance programs and policies should be concern to protect and prevent women's potential poverty.

### **Literature Review and Theoretical Analysis**

Through the development process everything is changing gradually; with the increase of the necessity, today's women are working both in private and public field. UN charter and later on in the Universal Declaration (in 1948, 10 December), which is also known as human rights bill, there are two objectives-

- 1) To flourish the basic rights and possible talents, and
- 2) To implement it through international process

It is commonly heard that poverty increasingly has a "woman's face", given that women purportedly account for 70% of the world's 1.2 billion poor people (World Bank, 2008). Although women's poverty has become a common discourse at gender based research almost all of the researches have been done toward either poor women or low salaried job holder women. Most of the previously conducted studies focused on showing that women are poor, but this study is carried out with highly educated people to explore a thought of women's potential poverty according to their relative living status. It is difficult study since many of the relative research has not yet been established therefore empirical discussion takes an important place for the rationality of this research.

Economist, Sociologist and Psychologist have come up with different theories of poverty and thus they portrayed different faces of poverty (Cömertler, 2003, Al- Abbas, 2010). Current study receives significant backward support from Maslow's theory hierarchy of needs and the human capital theory to conduct the study about potential poverty of university graduate people.

### *Maslow's Theory on the Hierarchy of Needs*

Maslow has set up a hierarchy of five levels of basic needs. These are physiological needs, safety needs, needs of love, affection and belonging, needs for esteem, needs for self-actualization. In the level of the five basic needs, the person does not feel the second need until the demands of the first have been satisfied, not the third until the second has been satisfied, and so on (Maslow, 1987). Maslow believes that one of the main reasons that people would not move well in the direction of self-actualization is because of the barriers placed in their way by society. He states that education is one of these barriers. He recommends that education can play a major role in making a switch from usual person-stunting tactics to person-growing approaches. (Maslow, 1987).

Like Maslow's recommendation, many economists also consider education to be the pioneering step in eliminating poverty. Human Capital theory is a popular theory, which sets education as an earnable capital, one of the major determinants of poverty. Since the economists explore education is an investable lifetime capital for people the Human Capital Theory is presenting chronologically.

### *Human Capital Theory*

Based upon the work of Schultz (1971), Sakamota and Powers (1995), Psacharopoulos and Woodhall (1997), human capital theory sets on the assumption that formal education is highly instrumental and even necessary to improve the production capacity of a population (Olaniyan and Okemakinde, 2008). Human Capital Theory also explains the pattern of individuals' lifetime earnings. This theory explains investments in education and training entail costs both in form of direct expenses (e.g.,

tuition fees) and foregone earnings during the investment period, so only those individuals who will be compensated by sufficiently higher earnings for their lifetime will choose to invest. People who expect to work less in the labor market and have fewer labor market opportunities, such as women or minorities, are less likely to invest in human capital. As a result, these women and minorities may have lower earnings and may be more likely to be in constant poverty. On the other hand As a result of lack of continuous human capital investment and the aging process at the end of a person's working life most of his skills may have depreciated (Ehrenberg and Smith 1991). This theory sharply pointed to our target group or highly educated women who are not investing their education as an earning. According to this theory lack of continuous human capital investment and the aging process at the end of working life of highly educated women most of their skills may have depreciated. The Potential Poverty by Malik has been run through highly educated people of Bangladesh to explore those women's poverty.

### ***Potential Poverty***

In Bangladesh, there is no poverty index reflecting the data on to the relative living status of university graduate people. In this circumstance Malik has been done a study to established relative living status of highly educated people in Bangladesh. She has been established relative living status of highly educated people in Bangladesh and then established household poverty index and personal poverty index according to their relative living status. To establish relative living status the study used the three indicators of deficiency needs of the Maslow's theory of hierarchy of needs. That study converted as, biological needs converted as household expenditure, security needs converted as national security programs and belonging needs converted by 10 types of social interactions. According to the primary data of that study the minimum relative living status is minimum income, 4,000 tk, having any 1 type of security support and having 9 types of social interactions. According to the maintaining capability or inability the poverty level has been established by intellectual discussion. There are four levels; no-risk means highly educated people are able to maintain all three indicators of the relative living status, low-risk means household or persona is unable

to maintain any one indicator, medium-risk means household or person are unable to maintain any two indicators and high-risk refers households or person is unable to maintain all three indicators of relative living status (Malik, 2012).

The studied result showed that highly educated men, jobholder women and housewives are belonging at similar living status but at the personal status 98.8% housewife is belonging at high-risk of poverty level where men and job holder women are belonging at low-risk of poverty level. It means highly educated housewife are in a status where they are at risk to being poor. (Malik, 2012).

### **Objectives of the Study**

The aim of the study is to explore responsibilities of the nation, society, community and family to reduce women's potential poverty in Bangladesh.

### **Methodology**

Primary and secondary data has been used to present our responsibilities in women's potential poverty. This is a quantitative research which followed the non-probable Lenear snow-ball sampling (Newmen, 2003). To collect information this study used interview schedule in Dhaka the municipality area of Bangladesh.

### **Findings and Analysis of the Study**

Historically, women and girls have not enjoyed equal access to basic human rights, protections, resources, and services. According to the human capital theory, high education is so expensive; people invest in education so that they could use this education as a capital for life long earning. The theory also pointed if people fail to invest their education as a capital, than the people would be frustrated or people would lose their interest to invest in education. Bangladesh has already achieved gender parity in education. But still now women's education is not considering

as an investment. Women are not investing their education to maintain their relative living status. The research findings were categorized by three groups as men, job holder women and housewife respondents. Here data are analyzed by two sub-points;

- Personal socio-economic and demographic characteristics based analysis
- Family background based analysis

#### Personal Socio-Economics and Demographic Characteristics Based Analysis

According to the purpose of the study there have some special socio-economic and demographic characteristics of the respondents. Within these specialty respondents' minimum age should be 30 years old, respondents' resident should be at metropolitan city Dhaka, respondents should be graduated from any recognized university of Bangladesh, and respondents should be a married one. At the socio-economic and demographic characteristics, this study highlighted at respondents' gender, age, birth place, income, having social security, having social interaction.

Table 1: Personal Socio-Economic and Demographic Statuses of the Respondents

Variables	Men Most Frequent (%)	Job Holder Women Most Frequent (%)	Housewives Most Frequent (%)
Age	30-35 (41%)	30-35 (55%)	30-35 (49%)
Birth place	Dhaka (60%)	Dhaka (49%)	Dhaka (57%)
Age of 1 <sup>st</sup> parenthood	25-30 (37%)	20-25 (36%)	20-25 (44%)
Profession	Employee (73%)	Employee (90%)	Housewife (100%)
Income range	14,000 to 42,000 (54%)	4,000 to 14,000 (60%)	"0" income (98.8%)
Social security	Medical (48%)	Medical + pension (40%)	Out of security (100%)
Social interaction	10 types	9 types	5 types

The study found that there are different personal socio-economic and demographic characteristics within men, job holder women and housewife respondents. According to the findings, men and job holder women respondents' personal socio-economic and demographic statuses are almost similar but there are huge differences when it is observed in housewife respondents. Housewife respondents have no any professional identity and income, and as in Bangladesh, professional identity is important for social security support (Ministry of Social Welfare, 2011) so that, they are also unable to attain any security support, they are also far from broad social interaction. Additionally they are also out from self-development process. When it was observed in job holder women and men respondents they are continuously improving their socio-economic condition. There is a variable which is same for job holder women and housewife respondents, but diverse from men respondents that is age of 1st parenthood. Women respondents both of job holder women and housewives are supposed to take children's responsibilities from five years earlier than men respondents. This finding supports the statistics that approximately half of women in Bangladesh are less than 18 when they get marriage and 58 percent of girls become mothers or pregnant with first child before the age 20 (GOB, 2004). Though both father and mother take different responsibility for children, mother takes the main responsibility for most of the time for their children (Buvinic, 1997, Efroymsen et al, 2007).

#### *Family Background Based Analysis*

Both men and women respondents' socialization process scuttle through their parental house (Blanchet, 1996, Ministry of Primary and Mass Education, 2003, Alam, 2010, World Bank, 2008, Uddin, 2009). Therefore, it is important to view our findings in the light of the household status of the parental states. Thus family background characteristics of parental house is included as well as the characteristics of respondent's own households at present. The study collected information about household headship, father's educational level, mother's educational level and father's occupation, mother's occupation, and most common educational level of siblings.

**Table 2: Family Background and Household Statuses of the Respondents**

Variables	Group- A Most Frequent (%)	Group- B Most Frequent (%)	Group- C Most Frequent (5)
Head of parental household	Father (51%)	Father (76%)	Father (71%)
Mother's education level	Literate (41%)	Literate (45%)	Literate (43%)
Father's education level	S.S.C (32%)	Bachelor (31%)	H.S.C. (34%)
Siblings education level	Bachelor (39%)	Bachelor (48%)	H.S.C. (39%)
Mother's occupation	Housewife (97%)	Housewife (94%)	Housewife (96%)
Father's occupation	Agriculture (50%)	Employee (39%)	Own business (42%)
Own household's size	Three (44%)	Three (43%)	Three (45%)
Own household's income	14,000 to 42,000 TK (62%)	14,000 to 42,000 TK (70%)	14,000 to 42,000 TK (70%)
Own household's expenditure	4,000 to 14,000 TK (56%)	4,000 to 14,000 TK (52%)	4,000 to 14,000 TK (54%)
Own household's social security	Medical (57%)	Medical (61%)	Pension (34%)
Own household's social interaction	10 types	10 types	9 types
Spouse's income	0 income (71%)	14,000 to 42,000 Tk (70%)	14,000 to 42,000 (70%)
Spouse's social security	Have not (82%)	Have not (57%)	Have not (62%)
Spouse's social interaction	Less than 9 types (85%)	9 to 10 types (69%)	9 to 10 types (60%)

The study found there is a similar parental household's status for men, jobholder women and housewife respondents. These characteristics present the agriculture based patriarchal society of Bangladesh. The characteristics also present that parental occupation is typically divided along gender lines, with father being responsible for "outside" work and mother for house work. In agriculture based society, most often families invest for son's education (ADB, 2004). The findings also supporting this trend of culture where most frequent father's education is S.S.C. and mother's is literate. Even though there is no significant difference in group based distribution at the characteristics of parental household, when the father's occupation, mother's occupation, most common siblings education level are considered, university graduate job holder women appear to be at a slightly more prestigious condition than the other groups.

The study found that university graduate people are belonging at almost the same socio-economic and demographic boundary and also almost the same family background. In the case of respondents' own household status man and women respondents' condition is different in order to their personal poverty level.

## Inter-relation between Dependent and Independent Variables

There are some socio-economic and demographic characteristics, and family background which are playing a significant role to make university graduate women personally poorer than university graduate men. To explore inter-relation between personal poverty and socio-economic and demographic characteristics as respondents' age, birthplace, profession and various household statuses are examined here. These inter-relations are explored as men, women and total respondents. Variables are analyzed by the SPSS program. Chi-square and ANOVA are used to explore inter-relation between dependent and independent variables.

**Table 3: Interrelation between Independent Variables and Personal Poverty Level of the Respondents**

Independent variables	Men	Women	Total respondents
Mother's education	Not significant	Not significant	Not significant
Father's education	Not significant	Not significant	Not significant
Mother's occupation	Not significant	Not significant	Not significant
Father's occupation	Not significant	Not significant	Not significant
Household size	Not significant	Significant (.023)	Not significant
Spouse's income	Not significant	Not significant	Significant (.000)
Spouse's social security	Significant (.000)	Significant (.047)	Significant (.000)
Spouse's social interaction	Not significant	Not significant	Significant (.000)
Age	Not significant	Not significant	Not significant
Place of birth	Not significant	Not significant	Not significant
Profession	Significant (.000)	Significant (.000)	Significant (.000)
Age of 1st parenthood	Not significant	Not significant	Significant (.000)

According to the variables of family background that of mother's education level, father's education level, mother's occupation and father's occupation are not significant on increasing the risk to be poor. But spouse's income, spouse's status at social security and spouse's status at social interactions are significant on increasing the risk of personal poverty level. This means women's potential poverty is significantly inter-related with the tradition that women are dependent on their spouses to fulfil their deficiency needs. According to the patriarchy tradition of Bangladesh, husband's income is a

very important factor for maintaining the family expense. Because in Bangladeshi families, income earning is usually the responsibility of men, while the remaining family members usually women and children are economically dependent (ADB, 2004, Charter, 2010). This tradition also reflects on current study where most of the spouses (husband) of women respondents are at income-earning profession whereas most of the spouses (wife) of men respondents are housewives or out of any income-earning profession. With the link of professional identity women are also out from government social security programs and broad social interaction.

In the case of inter-relation between personal socio-economic and demographic characteristics, profession and age of 1st parenthood are significant on increasing the risk of personal poverty level. The early studies also explored that Poverty and early childbearing is one of the important discussions at Bangladesh phenomenon (Blanchet, 1996, World Bank, 2009). According to the current fertility rate on an average, women will have 22% of their first births before reaching the age of 20 (BBS, 1998). This age structure is slightly changed over highly educated women despite of that the university graduate women also took child responsibility from earlier age than university graduate men. Early motherhood is one of variance that makes women to stay at high-risk of personal poverty level than men. According to the finding of current study, most frequently university graduate women become mother at the age range 20 to 25 while most frequently men respondents become father at the age range 25 to 30 years. It shows, university graduate women take child responsibility in student life. It also shows that women are at their most demanding period in terms of seeking job opportunities while they are under child responsibility.

### **Responsibilities**

The study found that housewife respondents are at high-risk of personal poverty level. This is a situation that is in contrast to the university graduate job holder men and women. Though most of the characteristics of the respondents are all most similar but according to the personal poverty statuses there are significant diverse statuses between men and housewives as like as housewives and job holder women. These significant variables are:

- (1) Depend on spouse's status (deficiency needs, safety needs and belonging needs)
- (2) Professional identity
- (3) Age of 1st parenthood

When women's potential poverty is viewed as a social problem then it should be considered that there is a strong dependency culture practiced by the university graduate women. As like, depend on spouse's status is pushing women to accept child responsibility without considering own status of income, security and social interaction. Often this child responsibility closed women's movement, limited social interaction, income and security. When women are out from professional indent then also out from income, broad social interaction and security. These deficiencies also made women to depend on their spouses.

If we critically analyzed the current problem, we may found that both caused and result of women's potential poverty is beginning from individual and family then it is spread out all over the society. In this circumstance, we should address this problem as an individual problem, as the same time a communal problem and also as a social problem. None of these causes of women's potential poverty should be overlooked when suggesting recommendations. The complexity of the cycle of women's potential poverty means that solutions need to be equally complex. Thus steps taken to break the cycle of women's potential poverty are necessarily complex, but they are a better solution for poverty than most single. Thus the problem solving technique must be designed through micro, mezzo, and macro levels.

When women's potential poverty is considered as individual capability deprivation then "Self-strength" is an increasingly significant phase in poverty reduction for women who are facing high-risk of poverty. The key is helping the groups of university graduate housewives by building supportive communities with shared trust and mutuality. As potential poverty is caused by complex relation of individual and cultural systems, building the personal ties and leadership linking should be the pioneer step. The self-help model is the technique to create group intimacy within university graduate housewives. By considering this step, individuals' families and their community is perhaps the most challenging part to build self-strength of highly educated housewives. When university graduate women are strengthen enough then it would be next duty to create supporting environment.

One of the main reasons for men's unconsciousness about their wives' capability deprivation and potential poverty is the result of socialization and the social construct of gender. Girls and boys frequently learn from a very

young age about their gender specific roles. Boys and men are protectors and providers, leaving reproductive work for girls and women. The circle of women potential poverty is rigidly tied with this culture of women dependency on their husbands' statuses. Mostly at the community, family and individual level, positive reinforcements of husbands' role are vital to reduce women's potential poverty.

This cycle of women's potential poverty is embedded in the system of patriarchy culture of Bangladesh. Men responsibility to fulfil household's deficiency needs and men dominance the out sphere is an accepted norm and value, where women are dependent on their husbands and in an inferior position, be it in the family, community or at the state level. Such situation reaps inequalities and injustice in society. By concerning ecosystem perspective, it is important to understand that boys and men, girls and women are all parts of society. Their lives are affected by the values, beliefs and norms of the system they live in. Boys and men are every bit as affected and shaped by the gender order as girls and women are (ADB, 2004). Therefore, without partnering with boys and men, it is simply not possible to reach the goal of creating a gender-equitable family and just society. To create a more positive society for university graduate women to obtain a professional identity needs to work with husband, mother-in-law and father-in-law at home and address the prevalent socialization processes, which can make boys prepared for a more caring husband and father-in-law role. This intersects with bride gain high self-esteem from a secure family where both mother-in-law and father-in-law are involved in care of bride's future.

To create a more just society for women in Bangladesh, definitely, legal and policy structures should be reconsidered. In Bangladesh, child support and paternity legislation is inadequate and allows too many men to avoid responsibilities for the children. In some settings, there is little incentive in terms of paternity leave policies for men (let alone for women) to spend time with their newborn or young children (Ministry of Social Welfare, 2011). Divorce law also needs to be reviewed in Bangladesh to provide for more equal burdens and more equal access and contact with children in cases of divorce and separation of parents. This is duty of the ministry of social welfare and the ministry of women and child affairs to give pressure on responsible area to establish new law and policy that could positively support on women's potential poverty.

At the macro level, in terms of problem solving technique, should be concerned in both preventive and protective activities. As the university graduate housewives are at high-risk of personal poverty level like them the girls and women who is yet student are also at the risk to face same situations. To establish permanent solution responsible bodies should run through social action to establish necessary programs and policies, legislation and motivational works.

To protect women's potential poverty, responsible bodies could move forwards. Issues dealing with women's potential poverty need to be incorporated in the school and college curriculum. In this circumstance awareness campaigns and education programs need to be undertaken by the ministry of social welfare services in Bangladesh to sensitize all generations. In these points of view the ministry of social welfare could attempt to organize other ministries of Bangladesh like the ministry of women and child affairs and the ministry of education. With proper support of responsible ministries of Bangladesh the private sectors also needs to be active to promote services for couple employ families.

When a supportive environment will be made up then the university graduate housewives could perform as they were strengthened. At the mezzo level, three focal points are presented for breaking the cycle of women potential poverty.

- **Comprehensive:** The first strategy to break the cycle of women's potential poverty is to develop comprehensive programs. Comprehensive programs are the ones that include a variety of services and to bridge the individual and community needs. For example DSS could organize a sufficient number of crèche and day care centres for those highly educated housewives who are unable to start an income earning profession because of their prime duty of child care. If there will 80 crèche and day care centres will exist in 80 towns then women of these 80 towns could get communal support to perform the best way that they could.
- **Collaboration:** The key to succeed extensive programs without becoming too uncontrolled is to collaborate among different organizations to provide complementary services. The output of

their combination effort is greater than what could be done by any one of them alone. For example, the ministry of social welfare could propose all non-government organizations to establish a crèche or day care unite as well as other necessary units. The DSS could give priority to register those NGOs which have a unit for child care. In Bangladesh there are about 53,000 voluntary organizations, if all of these organizations establish a unit of child care then a huge number of women employee of those 53,000 organizations would able to continue their income earning profession.

- **Community Organizing:** Finally, community organizing is a tool by which local people can participate to understand how their personal lives and the community well being is intertwined by women's potential poverty. For an example DSS could publish leaflet, posters to concern community about women's potential poverty.

Further, update programs and policies of social action should be organized for motivational works. The media needs to be responsible for the images that subtly reinforce stereotypes of a 'normal' family. More research and publication should be supported by the Ministry of Social Welfare, the ministry of women and child affairs and the ministry of education. This would make the nation more conscious about human resource of Bangladesh and necessity to develop and implement of this resource. Intellectual bodies can encourage different ministries of Bangladesh in order to organize various seminars, conferences, symposiums, and workshops. When women will get proper support from family, community and society, they could protect and prevent themselves from personal poverty. The professional identity will create a way of income dynamic, job experience, additional education and improve self-esteem. In overall working beyond causes like potential poverty and strategizing to deal with patriarchal structures, discrimination etc. In addition to all of this, we must address accountability of all parties involved, including the government, private sector, community, families, children and us as well.

### Conclusion

By concerning highly educated women's programs and policies of social action should be organized. This would make the nation more conscious about human resource of Bangladesh and necessity to develop and implement of this resource. The nation can have positive result from investment on girl's education when their education will be considered as human capital. And women could enjoy equal socio-economic and security status when their education will be seen as human capital to fulfil their own deficiency needs.

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## Emergence, Expansion and Contribution of Capital Market in Bangladesh: Internal Factor Analysis

Syed Nazmul Huda\*

### Abstract

*This paper assesses the emergence, expansion and contribution of stock market in Bangladesh based on Dhaka Stock Exchange (DSE) & Chittagong Stock Exchange (CSE). Capital market plays a significant role in the economy as a source of long term financing. But the existing status of the capital market in Bangladesh is hardly in a position to play in mobilizing the resources for economic development. Therefore, the country's capital market needs structural change as well as proper regulation, uses of accounting standard which are likely to improve the confidence of investors and boost the functions of capital market. The author evaluated the existing performance of the two bourses by applying KMO. The value of KMO >0.50 to <0.70 represents the Mediocre, value of KMO >0.70 represents the Good Performance, value of KMO >0.80 represents the Very Good Performance. In this case, result shows that KMO reveals the sampling adequacy indicating i.e. 0.512 for Dhaka Stock Exchange (DSE) & 0.615 for Chittagong Stock Exchange (CSE) i.e. mediocre performance. The author identified the obstacles rising the capital market and analyzed the influential factors to overcome barriers as well as develop the capital market and also return the past recovering market capitalization in Bangladesh. The author also suggests the few recommendations to minimize the market crash.*

### Introduction

A mature and large stock market is perceived across the world as a barometer of the economic health and prospect of a country as well as a register of the confidence of domestic and global investors. A capital market plays as a strong catalyst in the industrialization and economic development of the country. Among developing countries, the contribution of the capital market have lately been recognized. The capital market in Bangladesh is still at a developing stage. Bangladesh capital market is one of the smallest in Asia but the third largest in the south Asia region. It has two full fledged automated stock exchanges

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namely Dhaka stock exchange and Chittagong stock exchange. The Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE) has undergone significant changes contributing towards the development of Bangladesh capital market. The development of the capital market is crucial for capital accumulation, efficient allocation of resources and promotion of economic growth. Capital markets of different countries of the world collapsed in the face of global recession, the capital markets of Bangladesh remained quite buoyant at that time. Given the growing number of ordinary investors in capital markets, limited supply of securities and investors' expectations for more profit at times made the market volatile. Nevertheless, various steps have been taken to maintain market stability and to establish a transparent and vibrant capital market while deepening it. The Government has also started off-loading state-owned companies' shares. 5 state-owned companies have already completed off-loading of shares. As a result, confidence on capital market of local and foreign investors has increased. The Securities and Exchange Commission (SEC) has strengthened its surveillance on securities transactions and supervision on market intermediaries so that market can be operated in transparent manner. The stock market was in turbulence throughout much of 2009, with the long bullish trend starting to turn grim. The bullish trend was initiated by the end of the two-year political crisis and re-emergence of democracy via the December 2008 polls, and was largely unaffected by the BDR Mutiny. The market was heavily aided by the entrance of Grameenphone into the capital market, when the index rose by 22% over a single day on November 16, 2009. Share prices continued to fluctuate, reaching the annual high in mid 2009 before plummeting by the end of 2009. The market continued to be turbulent throughout 2010, with the DSE hitting its all time high revenue and the largest fall in a single day since the 1996 market crash, within the space of a month. By the end of 2010, it was well known that the capital markets of Bangladesh well overvalued and overheated. The central bank had taken measures to cool the market down and control inflation by putting a leash on the liquidity. The conservative monetary measures adversely affected the capital market, with the market falling once on December 13 by 285 points, over 3% of the DGEN Index which stood at around 8,500 points. The capital markets suffered a second fall on December 19, with the index falling a further 551 points, or about 7%.

This 7% fall in the Dhaka Stock Exchange's index on a single day was the largest fall in the 55 year history of the Exchange, surpassing the fall of the 1996 market crash.<sup>10</sup> This fall was deemed 'normal' by analysts, who believed the market, was overvalued. Any information known to the public or a private source should be fully reflected in the security's current price for the Effective Market Hypothesis (EMH) to hold. That bubble episode showed a stronger correlation between the surge in the DGEN index and the private sector credit growth, which increased to 28 percent in the FY 2009-2010.

### **Objectives of the Study**

Against the above background, this paper examines the present scenario of capital market in Bangladesh and tried to identify the internal factors, if any; that may influence their capital.

Thus the specific objectives of the Study are as follows:

- To review the existing trading operational status and brief history of the capital market in Bangladesh.
- To explore the present scenario of the capital market in Bangladesh.
- To identify for the the major influencing factors in turned Dhaka Stock Exchange & Chittagong Stock Exchange (DSE & CSE) in Bangladesh.
- To find out the obstacles and solution of the capital market in Bangladesh.
- To provide few recommendations for the development of capital market in Bangladesh.

### **Literature Review**

Generally, it is believed that the markets in the developing and less developed countries are not efficient at all. Keeping the objectives in mind of the present study, we had reviewed the existing literatures. The Capital Market Development in Bangladesh: problems and prospects (Mahmood Osman Imam, October 5, 2000), Capital Market: An Overview (Md. Hasan Imam, 2005), An Overview of Bangladesh Capital Market (AZM Nazimuddin, 2007), Emerging Stock market and

the Economy: The Case of Bangladesh (Ahmed, M. Farid, 2000), Equity Market Performance in Bangladesh: An Evaluation Savings and Development (Ahmed.M.Farid, 1998). The importance of the capital market lies in the fact that it is the primary source of external funds for corporate investment (Jensen and Murphy,1990).<sup>11</sup> A number of recent theoretical contributions suggest that stock markets promote long term growth. Well-developed stock markets give due return to prudently-managed firms in the form of rising shareholders, wealth which may increase payment of managers. The stock market contributes to economic development as it facilitates equity finance , spreads ownership among a large set of investors and thus mobilize the saving of the population , provides a mechanism for allocating capital to productive use and facilitates a link between the capital markets of a particular country and the markets of the industrial world (Ryrie, 1991).<sup>12</sup> Bencivenga et al. (1995)<sup>13</sup> formulate models where more liquid stock market ( less expensive to trade equities ) encourages investors to fund long duration projects because investors can easily sell their stakes in the projects if they need their savings before the projects matures. Investors in Bangladesh became increasingly interested in equity markets because many entrepreneurs look for requirements from the equity markets for many reasons and DSE and CSE play an integral role in the pace of industrialization of the country (Akhter S et al, 2005).<sup>14</sup> Dermirguc-Kunt and Levine (1996)<sup>15</sup>, Singh (1997) and Levine and Zervos (1998) found that stock market growth plays an important role in predicting future economic growth in situations where the stock markets are active<sup>12</sup>. The proponents of stock market emphasize the importance of having a "developed" stock market in enhancing the efficiency of investment. A well functioning stock market is expected to lead a lower cost of equity capital for firms and allow individuals to more effectively price and hedge risk ( Bepari M.K. and Mollik A, 2006).<sup>16</sup> In contrast, Stiglitz (1993)<sup>17</sup> argues that stock market liquidity does not enhance incentives for acquiring information about firms or improving corporate governance. Shleifer and Vishny (1986) and Bhide (1993) argue that more liquidity reduces the incentives of shareholders to undertake the costly task of monitoring managers resulting in weaker corporate governance and slowdown in effective resource allocation decelerating productivity growth.<sup>18</sup> Corbett and Jenkinson (1994), while discussing

the contribution of stock market to corporate investment financing , suggest that it was negative in the United Kingdom and only marginally positive in the United States during the 1970's and the 1980's.<sup>19</sup> Analysis reveals that the Bangladesh stock market is growing in terms of market capitalization to GDP, turnover ratio and turnover to GDP but market is not still stable enough.<sup>14</sup> Although the controversy relating to the random walk behavior of stock prices started after the submission of Ph.D thesis of Bachelier (1900), the issue is still an unsettled vicinity of finance literature . Subsequent to Bachelier (1900) Cowels (1933) also studied the behavior of stock market prices and strongly supported the findings of Bachelier. Kumar and Makhija (1986) investigated the efficiency of non stationary stock price time series and concluded that non stationary time series conforms to the Efficient Market Hypothesis.

### **Methodology**

The study considers quantitative data collected from the secondary sources . Data used in the study include daily closing values of the indices of Dhaka Stock Exchange (DSE), and Chittagong Stock Exchange (CSE). Information has been collected from the offices of the respective stock exchanges. As an automatic source, data are collected from different variables of the share market , annual reports of Bangladesh Security and Exchange Commission (BSEC) of Bangladesh, Dhaka Stock Exchange (DSE), and Chittagong Stock Exchange (CSE), relevant Articles, Journals, Bangladesh Economic Survey during 2004-2011, Bangladesh Economic Review during 2004-2011, Statistical Year Book during 2004-2011, and daily newspapers etc. For analyzing the data, major statistical tools like factor analysis, Keiser Mayer Olkin (KMO) Bartlett's Test, Total Variance Explained, Eigenvalues, Extraction Sum of Squared Loadings R<sup>2</sup>, Rotation Sum Squared Loadings R<sup>2</sup>, Adjusted R<sup>2</sup>, F Change, Durbin-Watson Model & regression analysis etc. have been used for the study using the software Statistical Package for Social Science (SPSS) information regarding Turnover, No. of Listed Securities, Initial Public Offering (IPOs), Market Capitalization, Market Capitalization (as % of GDP), Issued Capital, Price Index, Cash Dividend & GDP. This study covered Eight years i.e. 2004 - 2011.

### **Limitations of the Study**

Millions & Billions of dollars worth of capital can be raised from millions of investors, small and large with voluntary participation. Some well founded theories have been established by scholars after studying the operation of stock markets in the developed world. In recent years, monetary policy is directed towards maintaining price stability, keeping money supply at the optimum level in the productive sectors of the economy as well as accelerating economic growth. The Government of Bangladesh always gets low return from GDP as the level of productivity is very poor. Similarly Government revenue is also very poor as compared to the expenditure status of the country. The factors like unfavourable balance of payment & trade, high level of poverty & low level of savings, unemployment, frequent natural disaster, industrial sickness, high level of dependence on import, unfair competition etc are the main causes for declining efficiency of the capital market in Bangladesh and hence the status of the capital market is yet underdeveloped. While conducting the study, we were confronted with the some limitations. There was a little scope for research on this crucial subject as all the data was secondary and no way to collect primary data was available. Lack of a wider coverage due to time constraint. We did not have much time to visit all the relevant places and meet respective personnel. Only secondary data was used, but there is no alternative of primary data to ensure the accuracy and effectiveness of the study. Considering these the present study is planned.

### **Capital Market in Bangladesh: A Brief Description**

Capital market concepts started in USA at Wall Street in 1653. It came to South Asia in 1890. The Bangladesh capital market operations in this part of the country started in mid fifties with the establishment of East Pakistan Stock Exchange Association Limited on 28 April 1954, which started trading in 1956 with 196 securities listed on the EPSE(now DSE) with a total paid up capital of about Rupees 4 billion ( Chowdhury 1994).It was renamed as Dhaka Stock Exchange (DSE) Limited on June 23, 1962. Initially it was a mutual organization (cooperative body) which was corporatized in recent activity of the Dhaka Stock Exchange (DSE) in term of turn over in the name of Dacca Stock Exchange Ltd. During

those early periods until 1971, all trades in the exchange were conducted using trading data collected over telephone from Karachi Stock Exchange. After independence of Bangladesh, the operations of the stock exchange remained suspended until August 1976. At that time market trading started with only 14 listed companies having market value of only taka 90 million. The trade volume was very thin and could not attract investors. Over time some reform initiatives were taken to strengthen the market. First time Tk. 10 million daily trades were recorded in April 1992. Government adopted the Securities and Exchange Commission Act 1993 and established the SEC as the regulatory authority for the market and the Securities and Exchange Commission (SEC), established in 1993 under this Act, as the central regulatory agency oversees the activities of the entire capital market including issue of capital, monitoring the issue of stocks and operation of the stock markets including regulating of portfolio market. A big wing of Bangladesh capital market, Chittagong Stock Exchange (CSE) incorporated in 1995. Bangladesh Capital Market products are as Shares, Debentures, Mutual Funds, Bonds, Derivates, Future and Options etc. On the other hand Capital Market Players are as Securities and Exchange Commission (SEC), Stock Exchange (DSE & CSE), Private Limited Company, Brokers and Dealers, Merchant Banks, Investors, and Central Depository Bangladesh Limited (CDBL). At Present Bangladesh has two stock exchanges i.e. Dhaka Stock Exchange (Number of registered trading Members/Brokers is 195) and Chittagong Stock Exchange (Number of registered trading Members/Brokers is 124). Bangladesh Capital market is growing day by day , now there are two exchanges with 276 companies, 17 mutual funds, 8 debentures and 112 bond. The market capitalization of Dhaka Stock Exchange is BDT 104700 million and the market capitalization of Chittagong Stock Exchange is BDT 800000 million.<sup>20</sup>

### **Present Scenario of Capital Market in Bangladesh**

The capital markets of Bangladesh were buoyant during 2009-10, but it became volatile from the second half of 2010-11. The capital market in Bangladesh had showed an upward trend since the fiscal year 2006-2007 when the DSE General Index (DGEN), the benchmark of the Dhaka Stock Exchange (DSE), started going up at a faster pace and reached its

peak in December 2010. During that time the broad money growth rate increased from 17 percent to 22 percent. The market capitalisation of the Dhaka Stock Exchange (DSE) rose from 39.00 percent of GDP at the end of 2009-10, which was 21.4 percent of GDP at the end of 2008-09. During this period, the DSE general index increased by 98.43 percent from 3,010.26 to 6,153.68 indicating keen interests showed by the investors in the capital market. By the end of June 2010, the number of BO (Beneficiary Owner) accounts increased to 25.64 lakh from 14.15 lakh at the end of June 2009. At the beginning of 2010-11, the capital market showed buoyant. The DSE general index stood at 8,290.41 in December 2010, up by 34.72 percent compared to June 2010. Similarly, market capitalisation stood at 44.1 percent at that time. However, the overheated capital markets undergone sharp price correction in January 2011 and was in process of recovery and stabilization during the last quarter of 2010-11. Market capitalisation and general index of DSE stood at 36.24 percent of GDP and 5,093.19 at the end of 2010-11.<sup>21</sup> Albeit Bangladesh economy is not more integrated with the global economies, Global Financial Crisis 2008 has dented every sphere of Bangladesh. Bangladesh economy has also been limping since being dented by the blow of financial meltdown. On the other hand, Bangladesh economy has been gaining benefits from the crisis and it has lost. Because of income declination of developed countries' citizen low-priced garments of Bangladesh has been very popular registering more growth in the country's apparel sector. But financial collapse in many developed countries has slowed down the infrastructural development especially construction works in Middle East which have pushed many Bangladeshi workers to come back. Remittance inflow has risen but the number of workers going abroad has fallen drastically. Country's foreign currency reserve hit new record of \$11.35 billion recently because of low import expenditure and rising trend of export earnings. But still 44 percent people are under poverty level; the Government and other concerned organizations should take comprehensive efforts to eradicate poverty. But to achieve desired level of growth to turn Bangladesh into a middle income country by 2021, growth rate should be accelerated. To do that more investment in infrastructure especially power sector, roads and highway, modern and sophisticated port facilities are badly needed. Cost of doing business

should also be reduced along with the removal of redtops in commencing business. Public-Private Partnership has been incorporated in the budget for 2010-11 but success will depend on time bound implementation. Instead of eying towards foreign countries, multi-lateral donors and agencies Government should choose country's capital market to raise fund for development projects especially for the construction of Padma Bridge, elevated express way and other big projects which will also ensure people's association in profitable Government properties. Associating general people in lucrative Government venture means to create the way of ensuring equitable distribution of wealth and this is only possible through strong and vibrant capital market. Because of sluggish economic activities investment has not gotten momentum in recent years but for the sake of rapid economic growth more savings and investment are also necessary. Another important issue is that tax to GDP (Gross Domestic Product) is very poor in Bangladesh, which has been another cause of fiscal deficit in almost every year. The Government has been regularly depending upon the borrowing both from internal and external sources. Because of huge Government borrowing from the country's formal banking sector, private industrial ventures and other commercial set ups have been on declining trend. Instead of borrowing from banking sources and other foreign lenders Government should depend on raising fund from the country's capital market. The average turnover of both exchanges is now around BDT 5000 million per day. As a result, at the end of 1996, 2010, 2011 & 2012, few local and foreign investors got a huge gain. On the other hand, general investors were trended to invest and faced a huge loss.

#### **Findings and Analysis of the Study**

Capital market of Bangladesh is one of the smallest in Asia but the third largest in the South Asia. It has two full fledged automated stock exchanges: Dhaka Stock Exchange(DSE) and Chittagong Stock Exchange (CSE). Capital market plays a significant role in the economy as a source of long term financing.

Internal Factor analysis for Dhaka Stock Exchange (DSE): Factor analysis is to identify the influential factors of Dhaka Stock Exchange (DSE) during 2004-2011. Factor analysis provided by the use of data of Table 1. This is shown below:

**Table 1. Trading Operation in Dhaka Stock Exchange Ltd. during 2004-2011.**

Year	Turnover (In crore Tk.)	No. of Listed Securities	Initial Public Offering (IPO)	Issued Capital (In crore Tk.)	Market Capitalisation (In crore Tk.)	GDP (In crore Tk.)	Market Capitali- -sation (as % of GDP)	Price Index	Cash Dividend
2004	5318.11	256	2	4953.20	22492.30	332973.70	6.75%	1971.31	153.20
2005	6483.48	286	22	7031.30	22829.00	370707.10	6.16%	1275.05	133.10
2006	6506.93	310	12	11843.70	31544.60	415728.60	7.59%	1321.39	125.25
2007	32282.01	350	14	21447.00	74219.60	472477.80	15.71%	2535.9	130.20
2008	66796.47	412	12	37215.60	104379.00	545822.20	19.12%	2309.96	135.00
2009	147530.08	415	18	52209.90	190322.80	614795.40	30.96%	3747.53	139.00
2010	400991.30	445	18	66434.00	350800.60	692380.50	50.67%	6877.70	141.10
2011	156091.20	501	14	87890.50	261679.10	701254.10	37.32%	4383.90	140.00

Source: Dhaka Stock Exchange (DSE).

#### KMO and Bartlett's Test (a)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.512
Bartlett's Test of Sphericity	Approx. Chi-Square	230.13
	df	36
	Sig.	0.000

a. Only cases for DSE are used in the analysis phase.

Above the table shows the results of Kaiser–Meyer–Olkin (KMO) & Bartlett's Test of factors of Dhaka Stock Exchange (DSE) based on the information of selected variables during 2004-2011. High values (between 0.50 and 1.00) indicate that factor analysis is appropriate. The value of KMO  $>0.50$  to  $<0.70$  is represent the Mediocre, value of KMO  $>0.70$  is represent the Good Performance, value of KMO  $>0.80$  is represent the Very Good Performance. In this case, KMO reveals the sampling adequacy indicating i.e. 0.512 for Dhaka Stock Exchange (DSE) i.e. mediocre performance for the same. Bartlett's Test of Sphericity indicates that the approximate chi-square value is 230.13 of Dhaka Stock Exchange (DSE) with 36 (df) for at 0.000 levels of significance. Hence, the factor analysis is considered as an appropriate technique for analyzing the data, which shows the satisfactory results for

the same. Results of Internal Factor Analysis: From the analyze of Table No. 1 we found that only 5 indicators that highly influence the capital market operations, on which the present study has been analyzed in order to obtain the research goal.

#### Total Variance Explained (a)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.15	68.35	68.35	6.15	68.35	68.35	5.92	65.82	65.82
2	1.83	20.37	88.72	1.83	20.37	88.72	2.06	22.89	88.72
3	0.49	5.44	94.16						
4	0.31	3.52	97.69						
5	0.18	2.06	99.75						
6	0.01	0.14	99.90						
7	0.00	0.06	99.96						
8	0.00	0.02	99.98						
9	0.00	0.01	100.00						

Extraction Method: Principal Component Analysis. a Only cases for DSE are used in the analysis phase.

According to the Total Variance Explained (a), we find that the Eigen Values are greater than 1 (One), these five factors are being extracted for Dhaka Stock Exchange (DSE). These imply that performance of Dhaka Stock Exchange (DSE) depends on five major factors. Cumulative percentage rates i.e. 68.35, 88.72, 94.16, 97.69 & 99.75 percent for Dhaka Stock Exchange (DSE) and the remaining variables collectively explain the balance like 99.90, 99.96, 99.98 & 100.00 percent of total variance. Hence we can reduce the number of variables to 5 out of 9 for the selected variables under the study. Extraction Sums of Squared Loadings indicates the percentage of variance shows only two factors i.e. 68.35 & 20.37 including total position of the same was 6.15 & 1.83 respectively. Rotation Sums of Squared Loadings also indicates the percentage of variance shows only two factors i.e. 65.82 & 22.89 including total position of the same was 5.92 & 2.06 respectively.

Regression Analysis: After identifying the major influencing selected variables, we further proceed for regression analysis considering turnover as dependent variable. The regression analyses have been done using the software SPSS and the results of the regression analyses have been shown by the following table:

#### Model Summary

Model	R		R <sup>2</sup>	Adjusted edR <sup>2</sup> Estimate	Std. Error the	Change Statistics					Durbin- Watson	
	DSE (Selected)	DSE (Unsel.)				R <sup>2</sup> Change	F Change	df1	df2	Sig. Change	DSE (Sel.)	DSE (Unsel.)
1	0.99(a)	0.88	0.99	0.98	2741.22	0.99	124.51	8	6	0.00	2.55	0.20

a Predictors: (Constant), Initial Public Offering (IPOs), Price Index, Cash Dividend, Issued Capital, GDP, No. of Listed Securities, Market Capitalization. b Unless noted otherwise, statistics are based only on cases for DSE. c Dependent Variable: Turnover

Regression Analysis reveals that Turnover has a significant relation with independent variables i.e. Turnover, No. of Listed Securities, Initial Public Offering (IPOs), Issued Capital, Market Capitalization, Price Index, Cash Dividend, Market Capitalization (as % of GDP), GDP of the Dhaka Stock Exchange (DSE) during the period 2004-2011. The Regression analysis tool performs linear regression analysis by using the "least squares" method to fit a line through a set of observations. Model summary indicates that, R= 0.99 % (selected) & 0.88% (Unselected) i.e. near about 1, so it is a favorable sign for the same. This indicates the high degree of linear association between dependent & independent variables as a whole. The R Square value is 0.99 indicates the goodness of fit of the regression model. Estimated regression model shows that about 99% of the total variation of the dependent variable is explained by the selected explanatory variables and the result is significant for the study. The calculated value of F is greater than that of the tabulated value at 5% level of significance for df 1 (8) & df 2 (6) degrees freedom. Here also indicates the Durbin-Watson Statistic which represents the values i.e. 2.55 (Selected) & 0.20 (Unselected) position during the study period.

Internal Factor Analysis for Chittagong Stock Exchange (CSE): Factor analysis is to identify the influential factors of Chittagong Stock Exchange (CSE) during 2004-2011. Factor analysis provided by the use of data of Table 2 which is shown in below:

**Table 2. Trading Operation in Chittagong Stock Exchange Ltd. during 2004-2011.**

Year	Turnover (In crore Tk.)	No. of Listed Securities	Initial Public Offering (IPO)	Issued Capital (In crore Tk.)	Market Capitalisation (In crore Tk.)	GDP (In crore Tk.)	Market Capitali- -sation (as % of GDP)	Price Index	Cash Dividend
2004	1755.13	195	3	4697.87	21501.08	332973	6.46%	3597.70	142.00
2005	1404.27	210	16	5551.93	21994.28	370707	5.93%	3378.68	149.00
2006	1589.31	213	6	6937.84	27051.07	415728	6.51%	3724.39	145.00
2007	5259.03	227	13	8917.39	61258.00	472477	12.97%	7657.06	142.00
2008	9980.37	238	12	12160.32	80768.40	545822	14.80%	8692.75	149.00
2009	16256.26	217	18	15512.49	147080.70	614795	23.92%	13181.37	151.00
2010	21520.40	232	18	20111.56	253439.33	642380	39.45%	18116.10	150.00
2011	18633.80	241	6	32212.90	197242.30	681242	28.95%	14880.40	152.00

Source: Chittagong Stock Exchange.

#### KMO and Bartlett's Test (a)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.615
Bartlett's Test of Sphericity	Approx. Chi-Square	241.05
	df	36
	Sig.	0.000

a. Only cases for DSE are used in the analysis phase.

This table shows the results of Kaiser–Meyer–Olkin (KMO) & Bartlett's Test of factors of Chittagong Stock Exchange (CSE) based on the information of selected variables during 2004-2011. High values (between 0.50 and 1.00) indicate that factor analysis is appropriate. The value of KMO >0.50 to <0.70 represents the Mediocre, value of KMO >0.70 represents the Good Performance, value of KMO >0.80 represents the Very Good Performance. In this case, KMO reveals the

sampling adequacy indicating i.e. 0.615 for Chittagong Stock Exchange (CSE) i.e. mediocre performance for the same. Bartlett's Test of Sphericity indicates that the approximate chi-square value is 241.05 of Chittagong Stock Exchange (CSE) with 36 (df) for at 0.000 levels of significance. Hence, the factor analysis is considered as an appropriate technique for analyzing the data, which shows the satisfactory results for the same. Results of Internal Factor Analysis: From the Table No. 2 we found that only 4 indicators that highly influence the capital market operations, on which the present study has been analyzed in order to obtain the research goal.

#### Total Variance Explained (a)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.81	75.68	75.68	6.81	75.68	75.68	6.75	75.09	75.09
2	1.47	16.34	92.02	1.47	16.34	92.02	1.52	16.93	92.02
3	0.47	5.22	97.25						
4	0.10	1.10	98.36						
5	0.07	0.79	99.15						
6	0.04	0.46	99.61						
7	0.02	0.32	99.94						
8	0.00	0.03	99.97						
9	0.00	0.02	100.00						

Extraction Method: Principal Component Analysis. a. Only cases for CSE are used in the analysis phase.

According to the Total Variance Explained (a), we find that the Eigen Values are greater than 1 (One), these four factors are being extracted for Chittagong Stock Exchange (CSE). These imply that performance of Chittagong Stock Exchange (CSE) depends on four major factors. Cumulative percentage rates i.e. 75.68, 92.02, 97.25 & 98.36 percent for Chittagong Stock Exchange (CSE) and the remaining variables collectively explain the balance like 99.15, 99.61, 99.94, 99.97 & 100.00 percent of total variance. Hence we can reduce the number of variables to 4 out of 9 for the selected variables under the study. Extraction Sums

of Squared Loadings indicates the percentage of variance shows only two factors i.e. 75.68 & 16.34 including total position of the same was 6.81 & 1.47 respectively. Rotation Sums of Squared Loadings also indicates the percentage of variance shows only two factors i.e. 75.09 & 16.93 including total position of the same was 6.75 & 1.52 respectively. Regression Analysis: After identifying the major influencing selected variables, we further proceed for regression analysis considering turnover as dependent variable. The regression analyses have been done using the software SPSS and the results of the regression analyses have been shown by the following table:

#### Model Summary for Regression

Model	R		R 2	Adjusted edR2 Estimate	Std. Error the	Change Statistics					Durbin- Watson	
	DSE (Selected)	DSE (Unsel.)				R2 Change	F Change	df1	df2	Sig. Change	DSE (Sel.)	DSE (Unsel.)
1	0.97(a)	0.99	0.95	0.90	1004.59	0.95	17.4	8	6	0.01	2.27	0.26

a. Predictors: (Constant), Initial Public Offering (IPOs), Market Capitalization, Cash Dividend, No. of Listed Securities, Issued Capital, Price Index, GDP. b Unless noted otherwise, statistics are based only on cases for CSE. c Dependent Variable: Turnover

Regression Analysis reveals that Turnover has a significant relation with independent variables i.e. No. of Listed Securities, Initial Public Offering (IPOs), Issued Capital, Market Capitalization, Price Index, Cash Dividend, Market Capitalization (as % of GDP), GDP of the Chittagong Stock Exchange (CSE) during the period 2004-2011. The Regression analysis tool performs linear regression analysis by using the "least squares" method to fit a line through a set of observations. You can analyze how a single dependent variable is affected by the values of one or more independent variables. Model summary indicates that, R= 0.97% (Selected) & 0.99% (Unselected) i.e. near about 1, so it is a variability of the dependent variable is explained by the predictors and also favourable sign for the same. This indicates the high degree of linear association between dependent & independent variables as a whole. The

R Square value is 0.95 indicates the goodness of fit of the regression model. The calculated value of F is greater than that of the tabulated value at 5% level of significance for df 1 (8) & df 2 (6) degrees freedom. Here also indicates the Durbin-Watson Statistic which represents the values i.e. 2.27 (Selected) & 0.26 (Unselected) position during the study period.

### **Major Barriers of Capital Market in Bangladesh**

After analysing the internal influential factors of both Dhaka Stock Exchange (DSE) & Chittagong Stock Exchange (CSE) we found the following major barriers of capital market in Bangladesh:

#### ***Lack of full disclosure***

Full disclosure facilitates the functioning of an efficient capital market by providing additional information about items included in basic financial statements. Inadequate disclosure, concealment of facts or some-times fabricated disclosures appear in the annual report. This additional information may be useful in making investment decision.

#### ***Lack of rules and regulations***

Lack of enforcement with the compliance of rules and regulations and also lack of ethical orientation, insufficient information, education about capital & securities market.

#### ***Lack of trust of investment***

Lack of trust self respect amongst interest groups to building up a healthy and investment friendly market atmosphere and also lack of potential securities and narrow options for the investors. Rumour and fake shares involved in our capital market. Because most of the investor are unsophisticated.

#### ***Lack of book building method***

Lack of occupied steps to identify the problems of book building method and make correction of the system.

### ***Lack of infrastructure facilities***

Lack of physical and infrastructure facilities of the capital market in Bangladesh. The environment of investment is not suitable for the existing capital market in Bangladesh due to high risk and uncertainty. This uncertainty controllable & uncontrollable factors like high risk and uncertainty, political unrest (Strick, Hartal, lockout etc), financial statements of the company are not prepared in time, poor saving due to poverty, irregular declaration of dividend, industrial sickness, trade-union pressure, highly interest rate, lack of full disclosure facilities, price level changes, changing monetary policy, natural disaster (Flood, Cyclone, Monga, Nargis, Tsunami etc) etc.

### ***Lack of training & development***

Unskilled, incompetent and unqualified people always avoid investing their funds in the capital market of Bangladesh.

### **Major Contributions of Capital Market in Banglades**

The stock market can work as the best cost effective alternative source of industrial finance by attracting institutional saving and channeling them into productive sectors. Usually industrial units require a long term commitment of capital but investors are often reluctant to relinquish control of their savings for long term periods. A liquid stock market induces investors to keep their savings in shares to make investment less risky and more attractive because they allow savers to acquire and asset equity and sell it quickly at the least cost if they need access to their savings or want to alter portfolios. A vibrant stock market can also lead to more investment by making investment less risky and more profitable. Stock market is considered as one of the vital macroeconomic indicators of a country. The capital market of Bangladesh have been contributing immensely to the economy with strong positive impact on growth , employment , reserve and balance of payments. Capital market contributes to our national economy is a large scale by increasing life style, per head income and employment opportunities. Capital market

have been continuously playing and increasing large role to the economic growth and the livelihoods of people in Bangladesh. It has been continuously lifting-up the Gross Domestic Product (GDP) of Bangladesh. The percentage of Market Capitalization (MC) in GDP increased continuously from 2006 to June in 2010 ( that is, increased from 6.5% to 36.6%). As of June 2010, Market Capitalization (MC) of securities reached Tk.253439.99 crore (36.6% of GDP) which is 1078.73% higher than that of 2004. Capital market is positively the socio-economic condition of our families. Capital market income makes more strong local currency (Bangladesh) against US dollar. The government of Bangladesh is using capital market income to build schools, colleges, universities, hospitals, roads & highways, bridges, culverts, etc. Capital market income helps the government of Bangladesh to prepare or calculation of GDP. Capital market has been continuously keeping the contribution to alleviate the poverty of Bangladesh through micro-enterprise development, generating substantial employment and income.

### **Conclusion**

The stock market can work as the best cost effective alternative source of industrial finance by attracting institutional saving and channeling them into productive sectors. Capital market in Bangladesh is now going through a hard time currently as there are some upheavals in the market and there exists an upsetting condition in the stock markets. But as per the past occasions, it is evident that our current capital market has a good ground now for future developments. We should take this opportunity to boost up the market as well as contribute to our economy. In addition, our mindset needs to be changed regarding earning profit from the capital market overnight. Foreign investments also need to be increased to ensure a sound capital and along with this, the government should make an authentic list of the companies that has credibility and accountability. Both Dhaka Stock Exchange (DSE) & Chittagong Stock Exchange (CSE) are operated capital market in Bangladesh with more contribution in economy of Bangladesh. Both are most essential part of the country's developing. But after analyzing we found that Dhaka Stock Exchange (DSE) are more contributor than Chittagong Stock Exchange

(CSE) for the economic development of Bangladesh. Hence, at present capital market has been facing huge market crash & decreasing the price index during the last two years. So, a strong capital market acts as a vehicle for growth of the economy. Therefore, it should be the joint responsibility of the regulators, the exchanges, Securities and Exchange Commission and the government to properly discharge their due roles. At the same time, there must also be adequate, update and relevant information flow from the listed companies & joint initiatives of the SEC to the investors at the after checking and re-checking them properly. Concerned agencies should also educate the investors. In addition, investment facilities and law and order situation of the country need improvement. These issues are important to security analysts, investors and security regulatory exchange bodies in their policy making decision to improve the market conditions. Although, the government has sophisticated plan but it has not been that effective for the revival of foreign investment. Last but not the least, the market intermediaries including the financial intermediaries must discharge their responsibilities to boost the capital market. Keeping in view the objectives of capital market, the regulators need to be more cautious. Specific recommendations for improving the roles of regulators as provided in this paper to improve long way in activating capital market and ensuring on, they are to build their image as a necessary alternative by maintaining a smooth relation public confidence. Ensuring effective monetary management and developing an efficient and reliable financial market are the prerequisites for achieving the goals of macroeconomic stability. Monetary policy should be geared towards maintaining low level of inflation and price stability, promoting low rate of interest in the banking system and changeling increasingly larger volume of financial resources to the productive sectors of an economy. In recent years; monetary policy is directed towards maintaining price stability, keeping money supply at the optimum level in the productive sectors of the economy as well as accelerating economic growth. Finally, developing countries which accounts for 75% of the world's population, have an enduring need to attract capital and technology to improve their infrastructure and standard of living. Developing economies, thus, look forward to their capital markets as the engine for future growth as its

existence ensures mobilization of surplus funds to the ones suffering from deficit. In addition, there is an initiative to frame Financial Reporting Act to maintain stability in capital market. The government has been considering a plan to establish a Financial Reporting Council to oversee the audit and accounting standards and their transparency. It is expected that these initiatives will regain investors' confidence in the capital market. Capital market of Bangladesh separately to find out their contribution towards the national income of Bangladesh. Continuous research on this area is very essential to reach at a conclusion about the level of efficiency in emerging markets.

### **Recommendations**

If we can develop our capital market, it will definitely enhance our national economy. The following recommendations can be made to improve the operational activities of the capital market in Bangladesh.

#### ***Minimum profit***

Minimum profit should be declared by the Government for each investment to attract the positive attention of the risk avoider persons & Institutions.

#### ***Special initiative by the Government***

Government should be taken special initiative for the establishment of capital market functioning in the district level, so that the market become easy accessible to the general people which will encourage & influence them in investing in the capital market. Financial statements of the company should be prepared in time according to Securities and Exchange Commission Ordinance 1969 and the Securities and Exchange Commission Act 1993.

#### ***Correction of book building method***

Steps should have take to identify the problems of book building method and make correction of the system. It will also provide corrective measures to rumours and fake reports and thus making the trading of securities smooth and uninterrupted.

***Infrastructure facilities***

Merchant banks (MBs) should be allowed to deal in secondary securities on their own account, which are not currently allowed. Quick transformation is expected to reduce workload of physical deposit and withdrawal of securities.

***Good dividend declaration***

Each & every company should arrange the AGM in due time & declare dividend to their shareholders considering the controllable factors.

***Increase of Share Supply***

The government should off load its equity holdings in SOEs and MNCs through stock market. This will improve the supply of securities in the market. Unlisted companies and unscheduled Bank Should be incorporated in the Securities and Exchange Commission providing incentives and extra facilities.

***Practices of Accounting Standard***

To represent the real status in terms of every aspect of the company, audit reports should be prepared according to the International Accounting Standards (IAAS).

***Establishment of separate judicial***

Establishment of a separate judicial security tribunal for dealing with cases related to securities market.

***Training & development***

Training & research activities should be developed for the development of the capital market in Bangladesh.

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## Teaching Analytical Writing to the Students of English Literature: Applying Cognitive Strategies

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### Abstract

*Writing English is one of the four skills that require learners' knowledge of vocabulary and grammatical knowledge for practical purposes or certification. Literature offers various materials that are related to human issues which must be authentic about cognitive strategies for understanding, interpreting, writing and evaluating analytical essays. As a teacher of Honours courses, I try a lot to infuse the knowledge of syntax, tenses and the linking words which they lack. The purpose of this paper aims at emphasizing cognitive approach to reading and writing of English language learners (ELLs) of Honours courses. Learners, after repeated practice on cognitive and guided tasks of a variety of strategies become able to read literary texts and write analytically. What is spectacular about the article is its integrity and fidelity to three core dimensions: Teachers and students with the exposure of cognitive strategies coupled with a wide array of curricular approaches leading to comprehensiveness and application of those strategies in reading and writing analytical issues.*

### Introduction

Language is the most effective and practical way of expressing views on ideas, feelings and emotions of mind. It plays an important role to communicate with different members of different social groups. To keep pace with the rest of the world, now it is the demand of the time to take up learning of English as a challenge of the 21st century. In my courses, most of the evaluation of the students' performance and marking is based on writing skill. A student of B.A. (Honors.) of English class finds it difficult to use a kind of reading that is needed for critical analysis. For this reason, I chose cognitive style which is broadly defined, as an "individual's characteristic and consistent manner of processing and organizing what he [or she] sees and thinks about. Cognitive style, broadly defined, is an "individual's characteristic and consistent manner of processing and organizing what he [or she] sees and thinks about" (Harr' and Lamb 98). In theory, cognitive style is separate from verbal,

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quantitative, or visual intelligence. It is not measures of how much people know or how well they mentally perform a task, but the manner in which they perform, their way of going about solving a problem, their style. Cognitive style research emerges out of the study of individual differences, and there have been a number of theories of cognitive style proposed in American and British psychology since the late 40's. Varied though they are, all the theories discuss style in terms of a continuum existing between two polar opposites: for example, reflectivity vs. impulsivity, analytic vs. global, complexity vs. simplicity.

It is important to keep in mind that Piaget's perspective on cognition is fundamentally logical and mathematical. Late in his life he observed that he did not wish "to appear only as a child psychologist". With this perspective in mind, let us very briefly consider remedial writers. The cognitive milestone is that children are free from immediate perception and enter the realm of logical-if concrete-operations. They can use logic to solve everyday problems, can take other points of view, can simultaneously take into account more than one perspective. Children have trouble separating out and recombining variables, performing sophisticated conservation tasks, and solving proportionality problems. They also have trouble planning systematic experiments and understanding "purely hypothetical questions that are completely divorced from anything in their experience" (Siegler 90). During this stage, children develop into sophisticated logical thinkers-Piaget compared them to scientists solving problems. The older individual's thinking can . . . be totally abstract, totally formal logical in nature." Piaget and his colleagues developed a number of tasks to distinguish concrete from formal operational thinking. If students couldn't produce coherent abstractions in writing, if they wrote about what was in front of them and couldn't express themselves on the conceptual level, if they described something in writing as though their reader shared their knowledge of it-then those limits in written expression suggested something in the framework itself. As any developmental psychologist will point out, there are major conceptual problems

involved in applying a developmental model to adults. I will conclude this brief critique by considering, once again, the mathematical-logical broad and general about the state of their thinking: they might be unable to form abstractions . . . any abstractions; they couldn't de center . . . at all. There are problems with this line of reasoning, however, and they have to do with the application of the framework as well as with base of Piaget's theory.

So, without strategy, no one can get competence in writing. As there is no evidence that writing helps a man to get writing competence and those who write more do not write better .Moreover, increasing writing does not result in letter writing (Krashen, 1984, 1984).Only writing can make a person smarter. So John Bacon says "Reading maketh a full man; conference a ready man, and writing an exact man". When we write something on the page, we make a representation of our thoughts in our "cognitive structure".

Here our emphasis is on the role of reading in developing writing competence through competence strategies. The strategies will help the writers to use them in order to discover the meaning of different texts and to adapt the composing process. So reading provides writers the knowledge of writing, the vocabulary, and discourse styles that many writers' use. A number of studies are consistent with the fact that the development of the language (1st and 2nd language) is only possible by reading more. So those who read more can acquire more of the reading language.

Now writing makes such a profound contribution to intellectual development and because the composing process allows us to use writing as an intellectual tool, to the composing process does in fact transfer, education in the first language in an efficient means of promoting intellectual development.

Learners of B.A.(Hons.) Language course have to struggle with the analysis of different aspects of literature because in the past they depended on memorizing some essays, letters and paragraphs. The first year learners get idea of the writer's age, contemporariness, and

the aspirations, achievement and the failures of the people of the age. Our students who depended on memorization, set notes supplied by the coaching centers expect similar things in the honors course also. Without practice, their ability for free thinking and free writing are fossilized earlier.

A perplexing situation baffles a newly admitted University student. He confronts a kind of writing that lies far beyond his Higher Secondary competence. After narrating and describing scenes of a journey by boat, train or bus, or a rainy season, a learner faces the task of analyzing the theme, imagery and thought used in 'To a West Wind' or a 'Grecian urn'. Students struggle to do the abstraction or to analyze any character or theme and the result is: 'Hollow men' remain 'hollow' in their narrative/descriptive writing and analytical writing involving different cognitive, strategic and structural processes. However, this simple fact is mostly not identified by students and tends to be overlooked by teachers with a resultant frustration faced by both. As the nature and the design of the course being remedial, they will be required to do analytical writing. This is frequently ignored with the result: teachers ask for an analysis of the imagery of a poem and receive a summary instead. While teaching both language and literature classes in the Honors level, I have become seriously conscious of this problem and of the need to study the problem in an attempt to identify the causes, and also to propose some solutions helpful for all concerned.

### **Methodology**

The word "analytical" has been used before to describe a certain writing style that is crisp, concise, to the point, and informative. In 1966, Thomas R. Johnson wrote a book called "Analytical writing" (Harper and Row). Much of what I will share here is an expansion of Johnson's insightful concepts and Mike Rose's article named "Competence in Foreign Language Writing". It is an action research which is carried out by me in my own classroom without the involvement of others. It is first and foremost situational secondary research, being concerned with the identification and solution of

problems of situational context. For this, I got help from a Teachers' training course programmed in E.L.T, conducted by a few Professors of Dhaka University in Presidency University, studying different books and through electronic webs. I am thankful to the students of 12th batch in B.A.(Hons.) course for their exquisite persistence. They were fifteen in number with the identification and solution of problems of situational context. Being deeply moved by Mike Rose's book "Competence in foreign language writing", and challenged by my students' cognitive deficiency made me conscious about solving the problem. At the initial stage, I was disheartened at my students' inability to make analysis and synthesis of John Milton's "Paradise Lost". I made them read the text repeatedly. Then I asked them to find out the principal clause and subordinate clause in some sentences. Next I told them to compare Satan with Adam as regards convincing skill.

Later on I let them write a note on the seducing scene and to bring out the arguments of Satan in order to convince Eve. Learners could point out the temptation of Satan to eat the fruit but could not recognize the main point that is, "God does not want man to be as good as angels."

In order to develop my students' confidence and competence, I at first provided them systematic and explicit instruction and helped students develop declarative, procedural, and conditional knowledge of cognitive strategies. In order to do so, I shared some reflections with the research under the Path Way project. The name of the paper is "A randomized experiment of a cognitive strategies approach to text based analytical writing for main streamed Latino English Language learners in grades 6 to 12" which is carried out by Kim J. s. Olson, C. B. Scacella, R. Kramer, J. Pearson, M. van Dyke and few others. Students, including ELLs, who were assessed on their ability to perform a range of complex tasks including: summarizing texts, using linguistic cues to interpret and infer the writer's intentions and messages, assessing the writer's use of language for rhetorical and aesthetic purposes, evaluating evidence and arguments presented in texts, and composing and writing extended, reasoned

texts. To address the needs of tertiary level ELLs, this article will encourage teachers to help ELLs' use of cognitive strategies, to understand, interpret, and write essays about complex texts.

### **Literature Review**

Tasks include modeling, scaffolding, guided practice, and independent use of strategies so that students develop the ability to select and implement appropriate strategies freely and to monitor and regulate their use. Similarly, Fitzgerald and Shanahan (2000) said that reading and writing rely on "analogous mental processes" and four basic types of shared knowledge: meta knowledge about the processes of reading and writing; domain knowledge that the reader or writer brings to the text; ; knowledge about text attributes; and procedural knowledge and skill to negotiate reading and writing. Experienced readers and writers purposefully select and orchestrate cognitive strategies that are appropriate for the literacy task at hand (Flower & Hayes, 1980; Paris et al., 1991; Pressley, 2000.) Langer (1991) observes, "As children learn to engage in literate behaviors to serve the functions and reach the ends .They see models around them, they become literate – in a culturally appropriate way; they use certain cognitive strategies to structure their thoughts and complete their tasks, and not others". The cognitive strategy promotes and enhances critical thinking. In fact, this research indicates that "reading and writing in combination have the potential to contribute in powerful ways to thinking" (Tierney et al., 1989, p. 166). It is precisely because reading and writing access similar cognitive strategies but in differing degrees that reading and writing make such a powerful combination when taught in connection with each other.

### **Description**

The cognitive strategy promotes and enhances critical thinking. In fact, this research indicates that "reading and writing in combination have the potential to contribute in powerful ways to thinking". The strategies of analytical reflection of education are given below:

## Analytical Reflection in Education

### Guidelines for writing

1. Read, reflect and think critically about the text or learning experience.
2. You might like to start a reflective journal containing key reflection questions, reflection on observations and ideas to further develop your own practice.
3. Discuss text, experience or learning episode with a colleague, friend or teacher. Ask them to share their critical perspective
4. Identify the intended audience of your reflection and consider what do they want to know?
5. Consider what the purpose of the reflection is.

Describe Practice	Analyze Practice	Transform Practice
		Reflective Questions to ask about the text / experience / practice*
Describe the selected learning experience.	Write a personal response that reflects your overall assessment of what happened by:	In summary, what do you think about this situation/ experience or practice?
Explain clearly:	Explaining how the practice specifically links to your own experiences or emerging pedagogy?	* What conclusions can you draw? How can you justify these?
* What happened?	Explaining what specifically worked (or didn't work)?	* In hindsight, would you do something differently next time and why?
* What was I doing/ involved in?	Describing how you felt, and what made you feel that way?	* How has your participation or experiences shaped your own understanding of teaching a particular subject, grade level, group or in a particular school context?
When?	How did others respond, and what made them feel that way.	* How has the experience impacted on or shaped your understanding of an effective teacher or an effective classroom?
Where?		
* What did you observe?	Reflecting on how the experience connects with your own knowledge, understand or skills? And in what ways?	* What new questions have emerged for you in regard to your teaching?
* What seems significant to pay attention to?	Providing an explanation for what happened? How does the relevant theory, literature	* What have you learnt about yourself as a learner? * What are the significant learnings for a pre service teacher as a professional?
		* What are the take home messages

<p>If you are reflecting on a written text you might attempt to:</p> <p>* Examine how the writer's prior experience (discourse field, culture) has shaped his or her views. Does this affect the validity of the ideas presented?</p>	<p>and/or research inform your thinking about this.</p> <p>Considering the ideas in terms of their logic, usefulness, theoretical soundness and pedagogical implications.</p> <p>It is acceptable to provide an opinion but it must be supported with evidence or examples.</p> <p>If your reflection relates to observation, link what you observed to your own ideas about your own emerging pedagogy and future practice.</p>	<p>you have uncovered in relation to pedagogy and your own developing philosophy?</p> <p>* What actions result?</p> <p>*How could you use this experience to further improve practice in the future?</p>
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### Task Words and Definitions

**To Reflect in Education:** To think deeply and carefully about pedagogy, theory, practice and emerging teaching philosophy.

**Describe:** This essay describes the attributes or characteristics of a subject

**Examine:** To examine means to investigate or inspect closely.

**Explain:** To explain requires an answer that offers a rather detailed and exact explanation of an idea or principle, or a set of reasons for a situation or attitude. The explanation should increase the reader's understanding of a topic or idea.

**Comment on:** Comment requires you to state your opinion on a topic, sub-topic, or idea. In addition, you may explain the idea, topic, or sub-topic more fully

**Outline:** Outline requires an answer that contains a summary of all the available information about a subject. Only the main points and not the details should be included. Questions of this type often require short answers. Very much the same as "Summarize".

**Discuss:** Discuss requires an answer which explains an item or concept, and then gives details about it with supporting information, examples, points for and against, and explanations for the facts put forward from various points of view. This can be one of the most difficult types of essay questions.

**Comment on:** Comment requires you to state your opinion on a topic, sub-topic, or idea. In addition, you may explain the idea, topic, or sub-topic more fully

**Analyze:** Analyze requires an answer that takes apart an idea, concept or statement in order to consider the elements it comprises. Answers of this type should be very methodical and logically organized.

**Justify:** Justify requires an answer that gives only the reasons for a position or argument. Note, however, that the proposition to be argued may be a negative one (e.g. Justify the abolition of the death penalty). Remember, it should convince the reader about your point of view.

The language of analytical writing

"...This was quite possibly due to ... Alternatively,..."

"...The problem here, I believe, was the fact that..."

"...While it may be true that..."

"...On the one hand, ..., yet on the other..."

"...In thinking back, ... On reflection, ..."

"...I guess that being in a school like X has made me aware of..." It is acceptable to use the personal pronoun 'I' in reflective writing, as long as it is not overly used. Always attempt to vary one's sentence beginnings.

Writing practice involves: strategies to analyze the demands of the prompt; a micro theme graphic organizer (Bean, Drenk, & Lee, 1982) to restructure the organization of the paper; practice writing hooks, TAGs

(title, author, genre) and thesis statements in introductory paragraphs; sentence variety exercises ; and mini-lessons on the skills of academic English (for example, explicit instruction on the use of fixed expressions like “to discriminate against” instead of “he was discriminated,” “to jump to a conclusion” instead of “to jump into conclusion,” the use of transition words like “however” and “nevertheless” for cohesion, and the elimination of informal diction – i.e., sentences beginning with the word “like,” slang terms such as “kinda,” “cuz,” etc.) One of the most successful making visible strategies in the revision process is a color-coding system to help students distinguish between plot summary, evidence or supporting detail, and commentary. Students work with sample high pass and marginal/not pass papers and are taught to color-code the student samples and then their own pretest sentences in yellow for plot summary, green for evidence/supporting detail, and blue for commentary. This helps students to visualize their thinking and to determine whether they have interpreted the text and provided evidence for those interpretations or merely relied on summary to respond to the writing prompt. Students then revise their pretests into multiple draft essays as practice for the on-demand writing assessment. Next step should be focused on analyzing students’ performance on the pretest, on-demand writing assessment in order to determine strengths and areas for growth, and further training in the implementation of cognitive strategies designed to enhance interpretive reading and analytical writing.

The textbook contains instruction in cognitive reading strategies and embeds questions during and after reading selections to facilitate students’ comprehension. The textbook also includes some limited writing process lessons. As mentioned earlier, we tend to overlook the need to identify the different kind of writing required at the university level and it would be helpful to keep in mind what Mike Rose says: “Academic expository discourse seems to be more cognitively demanding than simply narration or description: and it requires kinds of sentences that, on the average, tend to be syntactically different from those found in narration and description.”

Although Rose talks about university level writing as a whole and entitles it as academic discourse,' her description shows that it is the form of analytical writing which is required in university studies. Analytical writing is complex in form and structure, and cognitively more demanding than narrative writing: it is the difference in writing between an essay on the autumn season and a critical appreciation of Keats, 'Ode to Autumn.'

Basically, it is inferential, analyzing given data to discover casual relations, drawing generalizations forming abstract principles and in short making explicit what is implicit in literary texts. To use a simple example the chronological narration of a story is not analytical; discovering its theme is .In fact it is not only a mode of writing but also a way of thinking involving strategies of defining, classifying, comparing, contrasting, arguing, reasoning etc. As to the form and structure of analytical writing, Linda Flower's 9 distinctions between Writer based and Reader based prose is very helpful in revealing the Reader based nature of analytical writing. Linda Flower points out that writer based prose is inward-looking following the structure of inner and egocentric speech using elliptical references and unexpressed contexts for statements, while Reader based prose use an issue –centered rhetorical structure as it attempts to set out and prove a thesis of the writer to the reader.

Before proceeding any further let us examine the work usually done in the remedial literature classes and in the final year classes of B.A.(Hons.) of English. In the language class, the writing skill is developed through the use of paragraph writing, summarizing etc. In all semesters (from 1st to final) follow the same pattern-biography of the writer, summary of the story and in the conclusion, they make some comments. This is far from analytical writing. They can be taught to write topic sentence, writers' age and his specialty. In the next stage, they can be taught to analyze the topic, make a comparative study of the characters, find out the problems in the story and suggest a solution. In case of poetry, they may be taught to comment on the style of the writer i.e. use of imagery, figures of speech, choice of words. In conclusion learners will bring out the poet's philosophy or view on life. As is apparent, these require a mode of

writing totally different from what they practice in the remedial language class. This is Mike Rose's central concern to create an awareness of the fact that academic writing at the university level is totally different from the writings done at the pre-university level.

For me, the shock came when I received an assignment from the students titled: Comment on Blake's imagery in the poem 'London.' The majority of the students labored hard on a summary of the poem ending with descriptions of a few of the images used by Blake. The answers were well-divided into introduction, exposition and conclusion, but contained few analyses of the images which was what I wanted. As I was teaching the Language course to the same group of students, this made me pause and try to discover the underlying reason for this failure. After much thought and discussion, I realized that the students were practicing one mode in the language class, while they were required to use different kinds of mode in the literature class. They have never been taught that different modes are required for different kinds of writing with the result that my shocking experience was not a rare one as I later discovered from discussions with my colleagues.

One of the essential differences between narrative and analytical writing lies in the higher cognitive level required in the later. To indicate the cognitive level required in analytical writing, Vygotsky's classification of the three phases leading to concept formation can be used. Vygotsky classifies the three phases as (i) the initial syncretic stage, (ii) the thinking in complexes stage, and finally (iii) the true---concept formation stage. The final development is from complexes to concepts; complexes collect related objects while concepts express abstract logical relations. Vygotsky further distinguishes between 'spontaneous' concepts----those which are formed as a result of ordinary, day-to-day experiences-and 'scientific' concepts ,which are formed largely in conjunction with instruction .As is apparent, analytical writing requires the formation stage i.e., to form abstract principles in relation to instructions. For example, in the assignment on Blake's imagery mentioned earlier, the required task was to analyze the imagery and discover the underlying pattern and its effectiveness in the poem. This requires a leap from the concrete images to the abstract principles involved in it-a basically inferential process.

A study of the problem reveals the following drawbacks on the part of the students which need to be eliminated:-

- (a) The basis of the problem for the students lies in their unawareness of the difference between narrative/descriptive writing (what they learn and practice before coming to the University, and the analytical writing (which they are required to do this in the university). There is a gap between Higher Secondary school writing and university academic writing, which can be filled up through remedial writing classes.
- (b) Students remain unaware that analytical writing asks questions which are different from those asked in narrative modes.
- (c) Analytical writing is inferential and most of the students are very weak in making inferences. Andrea Lunsford gives a good analysis of this problem at length and advances some very helpful solutions.
- (d) Till coming to the University the students learn to absorb the store information in their minds in narrative structures and as it is simple, they tend to use it all the time.
- (e) Students lack the confidence to think out things for themselves and rely on others' opinions-teachers, critics and the like. Hence, they do not think through a problem to form their own ideas but rely on critical writings which are easily available.

### Findings

Keeping these drawbacks in mind some suggestions are forwarded for teaching of analytical writing to students of literature through remedial language classes. But before going into these proposed assignments, a couple of cautionary remarks may be necessary with regard to writing assignments which must be realistic and motivational. This can be accomplished by using materials from literature they are studying in other classes for their language class. It is of little use to teach definitions to students of literature with examples from physics or Chemistry as is

found in Metaphysical poetry. Only when the students find direct links between what they learn in the writing class and what they do in their literature classes, they deem it worthwhile to work hard in developing their language skills. The following exercises can be used in language class to emphasize the kind of writing they are required to do for their Honors classes:-

- (a) One of the basic problems for students is making inferences and analytical writing is basically inferential. A simple basic way of teaching this is to use a character from a play or novel, discuss his actions and draw out a feature of the character. For example, the first couple of pages from Dickens's "Great Expectations" are read by the students; the teacher asks them questions pertinent to the discovery of the characteristic features of Pip revealed in these passages. The teacher must avoid questions leading to descriptions of the scene.
- (b) The next step is to introduce the concept of analytical writing and an exercise in two parts is very helpful for this. Students are asked to read an incident from a novel or a scene from a play and then write a description of it. e.g. the Christmas dinner scene in Ch. 4. of Great Expectations . After the descriptions are written, the students are asked to analyze the scene using their descriptions as the basis. This will create problems and most probably result in summaries. Then the teacher can go through the assignment step by step revealing the points of analysis .E.g. in the above mentioned scene, the behavior of uncle Pumblechook or Mrs. Gragery or Joe can be analyzed to discover the kind of people they are. The teacher can show how to analyze, ask questions which are different from those in descriptions and how it reaches beyond the surface to discover casual relations. This will come as quite a surprise to the students and serve to capture their attention.
- (c) At this point, a few critical essays on the piece under discussion can be brought in and presented to the students as samples of this kind of writing.

- (d) After this initiation the various aspects of analytical writing can be practiced, not as structures but strategies for thinking and inferring. For example, a number of things can be done with the assignments on Blake's imagery mentioned earlier. Different literary terms can be used to teach defining e.g. image, metaphor, simile, from the poem 'London'. Then classification can be practiced by classifying the images into visual, auditory, aural etc. Comparison and contrasting can be done through these very images and by bringing in some others from Blake's other poems. All these must be done carefully so that they do not take on the appearance of meaningless grammatical exercises-hence the insistence on materials from their literature courses.
- (e) To develop the inferential skill, one of the best in class-activities is pair-work. An inference needs to be questioned and proved and this can be done by students' reading out to each other and questioning the assumptions and proofs of each other. This will train them in questioning as well as supporting their ideas with evidence from the text. Peter Elbow in *writing with power*, comments on dialogues: "Dialogues are specially useful if you have trouble writing analytically (which means you probably have trouble writing essays and reports)." Writing a dialogue produces reasoning, but produces it spontaneously out of your feelings and perceptions. He also says that it produces assertions, supporting reasons, and evidence—all of which are essential to analytical writing for literature. Elbow suggests writing in the form of dialogues, but it is much more stimulating to talk with a real person whose reactions cannot be predicted. Hence pair-work is ideal for stimulating analytical thinking and writing.
- (f) Free-writing is also needed for analytical writing as the latter explores relations not only within the text but also with whatever the student has read up till then.

Hence, free-writing will help to bring out the various information, ideas, impressions and arguments stored in the mind and of which the student may be absolutely unaware. The stored materials will

usually come out in a narrative form and the prose will be writer-based, but then it can be transformed into reader based prose of analytical writing. Students will find it easier to expand and transform their thoughts when they have them written down from their view point.

- (g) Analytical writing can also be motivated and stimulated by the use of debates in the class room. Once a month, a debating contest can be set up between two teams with the other students working as judges. A debate makes one see all sides of an issue, question one's own as well as opponent's assumptions, think through an idea, develop the power of reasoning and come up with evidences. All these help to stimulate analytical thinking. The topics should be related to the study of literature.
- (h) In order to practice analytical writing through Shakespearean tragedy "Romeo and Juliet" the teacher as a facilitator can use color coded graph paper to show different characters' position in different scenes. He will design the text into different segments in order to make the students apprehend the concept of love and the consequences of it. Next, teacher will introduce the Petrarchan love sonnet and its influence on Romeo's life through the introduction of love at first sight. By the time the students are approaching the end of the play, they are bound to have thought about what lovers are prepared to do rather than living without each other. Then the teacher will make the students divide into two groups and conduct a debate on the topic as to how the tragedy could be avoided:
  - i) The stars had been in a different configuration when Romeo and Juliet were born.
  - ii) Romeo had been less impetuous and waited instead of taking poison so quickly.
  - iii) Juliet had refused to take the poison.
  - iv) The two families had sought to be reconciled instead of keeping to their old quarrel.

Edward Albee says, "The meaning of this play is intimately linked with what it is, and it therefore suffers from being paraphrased. This is one reason for our recommendation that teachers try to have their students put the play on, in a more or less elaborate form. Its small cast, almost bare set, and simple language make it ideal for a full-scale performance, where it is possible and desirable. Even a minimally staged reading performance in the class, however, will convey something of its dramatic quality and allow students to appreciate the force of its imagery, as well as its humour and irony."

### **Conclusion**

These suggestions are forwarded as some ways of dealing with the problem of teaching analytical writing and to create an awareness of the existence of the problem.

As the above discussion shows, the inability of the students to express themselves well in their literature class arises not from any innate disability, but simply from ignorance of what is required. Teaching writing is a difficult job and even a wide array of curricular approaches lead to comprehensiveness to cultivate in depth knowledge more so at the university level but a clear knowledge of the need of the students surely helps in coping with the situation. Teaching writing in literature classes can hardly be overwhelming; if taught with care and interest and understanding. The students will easily learn analytical writing and this will increase their appreciation of literature itself. At the same time, it is to be remembered that teachers can only guide and show the way, and it is up to the students to master the art with hard labour. What is spectacular about the article is its integrity and fidelity to three core dimensions: Teachers and students with the exposure of cognitive strategies coupled with comprehensive model of writing, instructions including language instruction, promising in improving the writing skills of mainstreamed adolescent ELLs of an intermediate level of English proficiency. It should be worthy of further practice and application of those strategies in reading and writing analytical treatises.

Finally, it is uncertain whether the first year learners will persist over time. Because many educational interventions are vulnerable to fade out (Heckman, 2008), it is critical to study the long-term effects including rates of high school graduation and graduation enrolment.

In many respects, it is possible that ELLs' limited English language proficiency (including lexical, morphological, syntactic, and discourse knowledge) may have undermined their ability to have access to some of the strategies and to use them appropriately is the crying need.

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## ANTHONY BURGESS' 'A CLOCKWORK ORANGE'

### A Document of Disintegration between the Traditional British Culture and the Rise of a New Youth Culture

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#### Abstract

*Anthony Burgess, a British novelist, essayist, semanticist, translator and critic, who authored more than 50 books. "A Clockwork Orange" (1962) is considered as his best work in which he portrayed the disintegration between the traditional British culture and the youth culture, which produced violence and perversity. This youth culture started pervading the layers of the traditional British culture. The 1960s found the British culture assuming a distorted shape both in values and norms. The post war generation had to peep into the collapsed world from a perspective quite different from the previous one, because of the rising tension emerging out of a new threat from the nuclear war hanging overhead. This paper seeks to explore the disintegration between the newly emerging culture and the traditional British culture and its effect upon the young generation, which brought about chaos and disorders in British society.*

#### Introduction

A Clockwork Orange, a best-known novel by Anthony Burgess offered a bleak vision of a violence-ridden future. It follows a murderous, Beethoven-loving teenage gang-leader in complacent and conformist society. Roving bands of delinquents fight steal and rape to assert their freedom against the conformity of a clockwork society. The brutality depicted in 'A Clockwork Orange' emerged after an assault on Burgess' 'First Wife Lynne' in 1943 by the American girls in London that resulted in the loss of their expected child. In 1973 Anthony Burgess express his views through an interview, "my God, I had to write "A Clockwork Orange" in a state of near drunkenness in order to deal with material that upset me very much". Anthony Burgess's profound concern in 'A Clockwork Orange' is with the emergence of a new youth culture, also called sub-culture, in the 1960s. There is no denying fact that this youth

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culture was opposed to the old tradition based on values and norms that formed the basis of British social life. The novel provides an explanation for the sub-culture, which developed in Britain as a resistance and opposition to structural problems after the post-war destruction of the working-class community and its traditional values. Burgess observed that the working-class culture was dominated by middle-class values through hegemony; that the young people born in this working-class culture started negotiating for their own culture. So, they built a sub-culture in their own way in order to be autonomous and different from their parents. This young group was trying to seek for solutions of their problems of unemployment, low pay and educational disadvantages. They joined the sub-culture and expected it to provide solutions to their problems. But ironically enough, as Burgess Views, this sub-culture failed to solve their problems. Alex, and the boys of the younger generation, who were known as hippies started raising revolt against the norms of the time as those norms seemed to them conservative. This youth revolt resulted in the creation of a counter-culture, which eventually turned into a social revolution throughout the western world. As this new youth class began to criticize for establishing social order, new theories about cultural and personal identity began to spread almost all over the western world. The hippies of 'A Clockwork Orange' questioned the traditional British culture and created their own culture, which involved the rotten and dirty mentality. Their depravity in the new culture stopped at no end. They find pleasure in murder, rape, robbery, hooliganism and virtually terrorism. Burgess narrates them as the evil segments of the society, who feel the thrill of theft and violence. On the very first page of 'A Clockwork Orange', he has vividly depicted a candid picture of the dress style of the Teds. The band of young boys, were dressed in the height of fashion, which in those days was a pair of black very tight tights with the old jelly mould as we called it, 'fitting on the crotch underneath the tights'. This being to protect and also a sort of design you could viddy clear enough in a certain light, so that, I had one in the shape of a spider, Pete had a rocker, Georgie had a very fancy one of a flower, and Dim had a very hound-and-horny one of a clown's listo...Then we wore waisty jackets without lapels...We wore out our

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hair not too long and we had flip horror show boots for kicking...These sharps were dressed in the height of fashion too, with purple and green and orange wigs on their gullivers...Then they had long black very straight dresses...they had little badges...with different malchicks' names on them-Joe and Mike and Suckville...Dim was very ugly like his name, but he was a horror show filthy fighter and very handy with the boot.

### Discussion

The protagonist is a man, who enjoys violence, which is indicative of the truth that he is incapable of moral values and dignity. In brutality and violence, Alex resembles Golding's Pincher Martin. Golding calls Martin a Painted Bastard, who robs everything, which belongs to others. This painted bastard here takes anything he can lay his hands on. He takes the best part, the best seat, the most money, the best notice, and the best women. He was born with his mouth and his flies open and both hands out to grab. "He (Pincher Martin) is a castaway, a man isolated from community in all the agonized\_essence of his divided being. He is set within constant shattering cold, hunger and storm, the sufferings of human experience".

Burgess' hero is "a right brutal bastard contemplating the actions of the forces of evil, the workings of the principle of destruction". Again, Alex and Pincher Martin stand on the same footing in terms of anti-heroic qualities and the abuse of free choice. Pincher Martin, inspired by his sense of free choice of evil actions, is finally destroyed. Similarly, Alex is victimized by his own false vision. He freely chooses the evil courses and is finally taken away by moral degradation out of which he cannot escape. Alex fails to raise himself to the status of a hero because he stresses that his delinquency and moral fall are entirely a matter of free choice of evil and of his deliberate self-assertion:

.....that self is made by old Bog or God and his great pride and roadsty. But the not self cannot have the bad, meaning they of the government and the judges and the schools cannot allow the bad,

because, they cannot allow the self. And is not our modern history, my brothers, the story of brave malenky selves fighting these big machines? I am serious with you, brothers, over this. But what I do? I do because, I like to do.

In this text Alex has fallen – fallen down to the deep ditch of moral rottenness and decay. He stops at no depravity and violence. His fallen nature leads him to committing the ugliest crimes and ultra-violence. Alex enjoys violence through the attacks of the victims. Burgess' 'A Clockwork Orange' works out the anti-heroic theme by presenting its hero involved in violence and brutality, villainy and ugliness. Set in a dystopian future, the novel portrays its protagonist, a fifteen-year old boy, Alex, who in collaboration with his friends known as Droops, Dim, Pete and Georgie sets out on a diabolical orgy of robbery, rape, torture and murder. Alex indulges in murderous violence—"an act of rebellion against an especially numbing social machine".

The novel describes the Mod of the sub-culture originated in London in the late 1950s and peaked in the early to mid 1960s. The term Mod derives from the modernist. The mod of lifestyle sometime referres to modernism. Element of the mod lifestyle includes music, clothes and dancing. The 'Teds' (Teddy Boys) also known as the 'Mods', who emerged as a sub-culture group in London in the 1960s having a dandy-like style consisting of strange dresses, which was a fashion of the day, such as, an Edwardian Style Suit, Suede Shoes, Three-Button Suits, Fred Perry and Ben Sherman Shirts, Sta-Prest Trousers and Levi's Jeans, Cropped Hair, Short-hemmed Trousers and very narrow brimmed Trilby Hats commonly referred to in Britain as Pork Pie Hats. The Mods had shorter hair as they thought of long hair as liability in industrial jobs and in street fights. The short haired 'mods' also came to be known as the Skinheads in Britain later on in the 1970s. They wore conservative suits, narrow trousers and short hair. Although, they still fought on the street, they were highly interested in fashion and dancing. The Teds sought entertainment in gangs very much, involved in fashion marked with traditional female expression, they tried to compensate with violence and a tough attitude. The Teds were associated with disturbance by the media and elder people and were

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called 'Folk Devils'. Burgess was very much concerned about the emergence of such an ill sub-culture group in British society. On the very first page of 'A Clockwork Orange', he has vividly depicted a candid picture of the dress style of the Teds, 'the band of young boys'. The world of Burgess's, Teds is a world of violence, brutality and juvenile crimes. It is an immoral world in all respects. Set in a dystopian future, the novel portrays its protagonist, a fifteen-year old boy Alex, who in collaboration with his friends known as Droops, Dim, Pete and Georgie sets out on a diabolical orgy of robbery, rape, torture and murder. Alex indulges in murderous violence—"an act of rebellion against an especially numbing social machine". The setting for the novel is a soulless urban decaying society—a stinking world which "lets the young get on to the old like you done, and there's no law nor order no more". Nothing but perversity, violence, crime and guilt prevail in this stinking world of Alex. This world is riddled with anti-social acts. In the course of the action of 'A Clockwork Orange', Alex and his friends commit numerous anti-social activities—a fact which his parents are not at all aware of. The novel begins with the decay of moral dignity and respect for cultural values among the teenagers Alex, Pete, Georgie and Dim. Alex, along with his friends, swoops on an old man and snatches his money and breaks his umbrella just for enjoyment. His ugly nature reveals itself in the act of humiliating the feelings of the old man that he expresses in the letters to his wife:

"Old Dim gave up his umbrella dance and of course had to start reading one of the letters out loud, like to show the empty street he could read. 'My darling one,' he recited, in this very high type goloss, 'I shall be thinking of you while you are away and hope you will remember to wrap up warm when you go out at night'. Then he let out a very shoomy smack – 'Ho ho ho' – pretending to start wiping his yahma with it...Then we smashed the umbrella and razrezzed his platties and gave them to the blowing winds...that was only like the start of the evening and I make no appy polly loggies to thee or thine for that".

'A Clockwork Orange' presents the youth subversive youth culture of the 1960s—the years from 1960 to the end of 1969, denoting the complex of inter-related cultural and political trends in the west, particularly in Britain, France, Italy and West Germany. The historians, journalists, and other

objective academics nostalgically participated in the counter-culture and social revolution of the time. The decade was also known as the Swinging Sixties, because of the libertine attitudes, which emerged during this decade. Rampant drug use became inextricably associated with the counter-culture of the 1960s. The decade also identified itself with the exciting, radical, and subversive events and trends. Burgess boys' revolt against the traditional British culture on the ground that it is a rigid culture unable to contain the demands for greater individual freedom. They do have a strong desire for breaking away with their parental culture considering its social constraints. The boys abused freedom in the name of new fashion and style. They all indulge in subversive activities and disturb the normal flow of British social life. These boys create a moral panic and terrible violence in the British society.

In the 1960s, the Nadsat Language had emerged as an aggression in the English language. This language became an inseparable part of the new youth culture. The British youths had developed a tremendous love of this language in their daily life. The Nadsat language was mainly used by the youths to address themselves as different from the aged people, who had an undying love for the English language. It is English with a polyglot of slang terms, which Burgess' boys love. The main sources for these additional terms are Russian, Gypsy, French, English slang and other miscellaneous sources, such as, Malay and Dutch also contributed to the emergence of such a language in the 1960s in Britain. The large number of Russian words in Nadsat is explained in 'A Clockwork Orange' as Propaganda and Subliminal Penetration Techniques. Burgess was basically concerned about the disintegration of traditional cultural values and the rise of youth ill sub-culture based on crime, perversity, violence and brutality. With cultural changes in British social life, the sign of cultural decay started to take a substantial form, which was found to manifest itself in the lack of respect and honour to the traditional British culture. Using the Nadsat language became a fashion of the day for the so-called Mods and Teds. Burgess' hero Alex is a Mod-a product of a culture of constant change. Burgess has realistically portrayed the rise of a tendency among the young generation towards using the Nadsat Language, which is evident in the following lines:

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Droops, aren't we? It isn't right Droops should behave this-wise. See, there are some loose-lipped malchicks over there, smacking at us, leering like. We mustn't let ourselves down...There has to be a leader. Discipline there has to be. Right none of them skazatted a word or nodded even...I was surprised and just that malenky bit poogly to sloosh Dim govoreeting that-wise...So off we went our several ways, me belching arrrrgh on the cold coke I'd peeted. I had my cut-throat britva.

The boys are accustomed to frequently using the Nadsat words such as 'Droops', 'malchicks', 'smecking', 'skazatted', 'malenky', 'poogly', 'sloosh', 'govoteering', 'peeted', 'britva' all of which are indicative of the violent nature of the Mods. They speak in other language to make a false show of their fashion of life. They vow to maintain discipline but their language suggests that they have received an ironical reversal to chaos and disorder. The entrance of the Nadsat words into the British culture obliterated the purity of the English language. More specifically speaking, the Nadsat had been a threat to the English language. Impurity in language turned into a fashion for Burgess's Mods.

Burgess' true genius lies in using the Nadsat narrative, which his hero Alex adopts while speaking to adults and people of high order to fool the outsiders who, he apprehends, might ward off his plan for committing violence and creating fear. But in conversation with his parents, Alex uses Standard English. When he is alone and is accompanied by his fellow 'Droops' he speaks in the Nadsat language. Even when he, along with his accomplices, launches attacks on the victims, there Alex speaks in standard gentle English with a polite voice. The use of the Lyrical Language and Nadsat Language masks the horrible imagery of the actions of Alex.

Slang is a part of the world of 'A Clockwork Orange'. It might be right enough to say that the most fascinating thing about the book is its language. Alex and his Droops frequently use slang- 'odd bits of old rhyming slang' to fashion themselves. Alex represents the disease and backwardness of the British society in the 1960s. In the night, he wanders the streets with his droops and creates fear and disturbance in the Nadsat narrative. Alex is unpredictable, dirty, ugly and violent not only physically but also with his words. He forgets the words of his own language and invents and uses the words of other languages. The only merit, on the whole, he deserves is his

handling the Russian vocabulary in a masterly fashion. It has a wonderful sound, particularly in abuse, for example, 'grahzny branchy' sounds better than 'dirty bastard'.

The British teenagers of all economic strata developed a taste in beat and band music by the artists Georgie Fame, The Animals, Small Faces, The Who, The Yard birds, The Spencer Davis Group and The Rolling Stones. Pop music became a dominant form of expression for the young. The band like The Beatles contributed to the formation of youth culture. Youth-based sub-cultures such as the mods, rockers, hippies and skinheads became popular in the 1960s. Burgess' boys are fond of the British beat, pop and band music, which provides them with thrill and sensation. These thrill and sensation make them more crazy and perverse in nature. As an inevitable part of the sub-culture, this music produces in the boys the heavenly feeling and bliss. Alex gets his stereo playing the pop music by the American Geoffrey Plautus and feels enraptured:

Oh, bliss, bliss and heaven. I lay all nagoy to the ceiling, my Gulliver on my rookers on the pillow, glazzies closed, rot open in bliss, sloshing the sluice of lovely sounds. Oh, it was gorgeousness and gorgeosity made fresh. The trombones crunched redgold under my bed, and behind my Gulliver the trumpets three-wise silver flamed, and there by the door the timps rolling through my guts and out again crunched like candy thunder. Oh it was a wonder of wonders...I broke and spattered and cried ah with the bliss of it. And so, the lovely music glided to its glowing close.

Alex is a youth indulged in dirty acts which certainly makes him a morally deformed being who pursues creature comforts and seeks to satisfy physical hunger through brutality and savagery. He rapes two 10-year-old girls, Marty and Sonietta. To them Alex is "a beast and hateful animal, a filthy horror". He rapes and murders Alexander's wife, tortures and ultimately kills an old lady. His moral decay and rottenness reach such a stage from which he does not find even the slimmest chance of escape. This evil-prone boy Alex is busy building "a right dirty criminal world", which produces dirty hooligans. Burgess expresses his profound concern about the rising disorder and anarchy in British society. As a conscious citizen, he is poignantly pained at the disordered social scenario of the sixties. In deep

## ANTHONY BURGESS' 'A CLOCKWORK ORANGE'

shock and awe, he witnesses a terrible world of criminals and hooligans engulfing the entire gamut of the British social life: "What sort of a world is it at all? Men on the moon and men spinning round the earth like it might midges round a lamp, and no attention paid to earthly law nor order no more" Burgess seems to complain against the authority for not paying attention to deterioration of law and order in the society. The collapse of order and law, Burgess finds, is resulting in social unrest and chaos. The world Alex and his mates live in is a dark world—a world of horrible acts, crimes, murders, sexual violence, rapes, robberies, hooliganism—a world peopled with villains and criminals. In the world of Alex and his Droops, all relations with other human beings are instrumental means to a selfish, brutal, hedonistic end. As an individual belonging to the ill culture Alex is entrapped within the egoistical self of his own—a slave of insatiable greed.

Self-realisation does not have positive impact on Alex to change his life. Alex is arrested and imprisoned in the State Jail for murder and rape. In the prison cell, he is psychologically tortured. The Ludovico Method is applied to Alex in prison as a means of turning him into a good and heroic figure. Alex is shown horrific films depicting scenes of extreme violence, pain and suffering—films of the kind of violence that he himself committed. At the sight of the films, he feels strongly nauseous, deeply distressed and within some minutes he begs them to stop the films. The sickening films of Nazi violence leave him "committed to socially acceptable acts, a little machine capable only of good." He seems to be regenerated through sufferings in the prison cell—a purified self. An optimistic note echoes in what Alex says:

...all this drasting and ultra-violence and killing are wrong, wrong and terribly wrong. I've learned my lesson, sirs. I see now what I've never seen before. I'm cured, praise God...It is wrong, because it's against like society, it's wrong, because every veck on earth has the right to live and be happy without being beaten and tolchoked and knifed. I've learned a lot, oh really I have...The old days are dead and gone days. For what I did in the past I have been punished. I have been cured.

### Findings

The fact that remains with the sub-culture is that it only suggested a solution on a symbolic level: by dressing in an upper-class style, for example, a

working-class youth could present an image and a status he could never achieve in his real life. Sub-cultures constructed styles taking symbols out of their contexts and placing them into a new context. This re-contextualization invalidated conventional meanings and was easily seen as a provocation. Sub-culture organized a group-identity and formed a homology which found expression in objects, dress, appearance, language, styles of interaction and music. The boys of the younger generation who were known as hippies started raising revolt against the norms of the time as those norms seemed to them conservative. This youth revolt resulted in the creation of a counter-culture which eventually turned into a social revolution throughout the western world. As this new youth class began to criticise the established social order, new theories about cultural and personal identity began to spread almost all over the western world. The hippies of 'A Clockwork Orange' questioned the traditional British culture and create their own culture which involves the rotten and dirty mentality. Their depravity in the new culture stops at no end. They find pleasure in murder, rape, robbery, hooliganism and virtually terrorism. Burgess narrates them as the evil segments of the society who feel the thrill of theft and violence.

### **Conclusion**

We reach the view that Alex's return to his early dirty and rotten life suggests that he is incapable of going back to the main stream of traditional British culture. Alex, after achieving self-realisation, abuses it and returns to take evil courses. It certainly indicates that Alex is failing, and failing decisively to achieve a good and respectable life. To the last, he remains a part of the world of crimes and criminals. The youth culture makes him a prisoner of the world of crime and violence. This youth culture or counter-culture completely fails to rectify him and make him a man acceptable in the society. Through the newly emerged youth culture Burgess exposes the dark side of the British society. So, we truly consider Anthony Burgess' 'A Clockwork Orange' is a document of the disintegration of traditional British culture and the rise of a new youth culture.

## ANTHONY BURGESS' 'A CLOCKWORK ORANGE'

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