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# Stress, Coping and Mental Health of Arsenic Victims in Bangladesh

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**STRESS, COPING AND MENTAL HEALTH OF  
ARSENIC VICTIMS IN BANGLADESH**

**By**

**Mahbuba Kaniz Keya**

A Thesis

Submitted to the University of Rajshahi  
in Fulfillment of the Requirements  
for the Degree of

**DOCTOR OF PHILOSOPHY**

Department of Psychology  
University of Rajshahi  
Rajshahi, Bangladesh

April, 2005

*[Faint purple stamp, likely a library or archival mark, with illegible text]*

**Dedicated to my mother,**

*Mastura Khanam*

*who, with reflections, ever fresh, of her husband – the fallen hero in another, waged an immolating lifelong war for our upbringing. The thought of making her proud had been the motivation that gave me the strength to see this thesis completed.*

## DECLARATION

I declare that the thesis, entitled: *Stress Coping and Mental Health of Arsenic*























































































## 3.2 Conceptual Framework In Bangladesh Railway Perspective

### 3.2.1 Historical Background Of Bangladesh Railway

The history of Bangladesh Railway goes back to the middle of the nineteenth century which is now the largest mode of transport of the country. The history of this enterprise is a primordial record of at least 158 years. The contemporary communication system of the Indian subcontinent began in 1840 through the steamer service as the standard of communication. Continuing this way, 'In 1843, at the time of his visit to Bhandup, the chief engineer of Bombay, Mr. George Clerk prepared a plan to connect Bombay with Thaney, Kollayan and Borghat through Railway service. On 13 July 1844, Mr. Clerk arranged a conference with the prominent Elites of Bombay on this regard. The chief justice, Sir Ercosin Perry presided over the conference. In this conference, it was projected to originate a Rail communication service between Bombay to Thalghat and Borghat by a Rail company, Bombay Great Eastern Railway Company of India. In the mean time, the Great Indian Peninsula Railway Company (GIPR) was established in England with the assistance of John Chapman, Messrs W and Borrett, Soliciter Whitehall London. GIPR articulated its first agenda on 15 July 1844. Baronet Sir Jamshedji Jijiboi was appointed the first director of GIPR. The famous inventor of Railway engine, Sir George Stephenson (1781-1848) was another director of GIPR. Robert Stephenson (1805-1859), the son of Sir George Stephenson was appointed as the consultant engineer of GIPR also. At last, on the 1 August 1849, an agreement was signed between the Court of Directors of England and GIPR for collecting a fund of 5, 00,000 pound within the 17 August 1849 to establish the railway communication system. On the 14 November 1849, J.J. Barkley was appointed as the chief engineer of the Indian railway. Barkley came to India on the February 1850 and concluded the survey within a year. At that period, Lord Dalhousie was the Governor General of the Indian subcontinent who took the vital role to establish Railway communication system in India as the most modern transportation system of the World. As the result of the attempt of Dalhousie, the first Railway communication system of India was fully established on the 16 April 1853 constructing 21 mile route track between Bombay and Thaney. On that memorable day, a train was driven from the Bory Bandar to Bory

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At the time of establishment, the Indian Railway sector was not an individual separate department or division of the Government. Firstly, it was planned non-governmentally through the initiative of non-government organizations of both of England and India. Then it was directed by the Court of Director of England. After that, it was supervised by the Secretary of State of England. In India, the Railway sector was controlled by the Military Board at first. In 1845, Lord Dalhousie founded the Public Works Department (PWD) and attached the Railway sector under the supervision of PWD directing by a consultant engineer as the chief. In 1866, the railway sector was reformed as a branch or division under a Deputy Secretary of the Indian Government. In this way, through various change and diversity there founded a separate a railway Board in 1905 and the Indian Railway got the status of an individual institution. (Malik, 1962, p. 58) In order to spread Railway communication network among the whole India, the Government of India handed over the duty to some non-government company like:

- a. Eastern Bengal Railway (EBR) : 1856 to 1947.
- b. Northern Bengal State Railway (NBR) : 1878 to 1947.
- c. Bengal Central Railway (BCR) : 1884 to 1947.
- d. Assam Bengal Railway (ABR) : 1892 to 1947.

Except the above mentioned companies there were other small companies which played a vital role to connect different parts of India with a Railway network like: Shara to Sirajgonj, Mymensingh to Bhairab Bazar, Jessore to Zhenidah, and Khulna to Bagherhat. (Khan, 2007, p. 30) In this way, these companies made a large network over India within short time.

On the 1 January 1942, The Assam Bengal Railway was taken by the state and was amalgamated with the Eastern Bengal Railway under the name of "Bengal and Assam Railway". At the time of partition of India in 1947, Bengal Assam Railway was split up and the portions of the system about 1,618 miles (2,603.92 Km) long which fell within the boundary of erstwhile East Pakistan was named as Eastern Bengal Railway, the control remaining with the Central Government of Pakistan. In effect from 1 February 1961, Eastern Bengal Railway was named as Pakistan Eastern Railway. Then, in the year,

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Paksey. (Information Book: Bangladesh Railway, 1975, p. 7) On 2 June 1982, the management and development of the Railway was vested with a Rail Board, comprising a Chairman and four members. But for the administrative convenience and operational reasons, that Railway Board was abolished with effect from 3 June 1982. Subsequently, two separate Administrative zones East and West, were created and two General Managers were appointed for the purposes of administration and operation of these zones. In addition, another General Manager was appointed for implementation of major development projects; in particular, foreign aided ones. But the overall management and development of the Railway was vested with a Director General. The Director General also acts as the Secretary to the Minister in Railway Division of the Ministry of Communications.

Some Important Historical Events of the diversity of Bangladesh Railway  
(Information Book: Bangladesh Railway, 2011 p. 1-4)

- 15 Nov. 1862 : Construction of 35.11 Km. of Broad Gauge line between Darsana and Jagati of Kushtia district by Eastern Bengal Railway.
- 01 Jan. 1871 : Extension of Darsana-Jagati Railway line up to Goalanda by Eastern Bengal Railway.
- 1874-1879 : Construction of Meter Gauge Railway line from Sara (near Paksey) to Chilahati, Parbatipur to Dinajpur and Parbatipur to Kaunia and construction of Broad Gauge Railway line from Damukdia (opposite to Sara) to Bradaha.
- 1882-1884 : Bengal Central Railway Company constructed Benapole Khulna Broad Gauge Railway line.
- 01 Jul. 1884 : Government took over the management of Eastern Bengal Railway.
- 04 Jan. 1885 : Railway Meter Gauge connection between Dhaka to Narayangonj, a distance of 14.98 Km. by Dhaka State Railway, which was later on merged with Eastern Bengal State Railway.
- 1885 : Construction of Dhaka-Mymensingh railway section by Dhaka State Railway.
- 01 April 1887 : Eastern Bengal Railway was merged with Northern Bengal State Railway.
- 1891 : Construction of the Assam Bengal Railway taken up with British Government assistance but was later on taken over by Assam Bengal Railway Company.
- 01 Jul. 1895 : Opening of 149.89 Km. Meter Gauge line between Chittagong and Comilla and 50.89 Km. Meter Gauge line between Laksam and Chandpur by Assam Bengal Railway.
- 03 Nov. 1895: Chittagong to Chittagong port line was constructed.
- 1896 : Construction of Meter Gauge line from Comilla to Akhaura and Akhaura to Karimgonj.

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1948-1949	:	Government took over Mymensingh Bhairab Bazar Railway Company and Rupsha Bagerhat Branch Line Company.
21 Apr. 1951	:	Jessore Darsona Railway line opened to traffic.
Oct. 1954	:	Sylhet to Chatak Bazar Railway line opened to traffic.
01 Feb. 1961	:	Eastern Bengal Railway renamed as Pakistan Eastern Railway.
1962	:	A Railway board was formed and management of Railway was placed under the provincial government.
1972	:	Pakistan Eastern Railway was renamed as Bangladesh Railway after emergence of Bangladesh as sovereign state and continued to function under a Railway board.
03 Jun. 1982	:	The Railway board was abolished and its function was placed under the control of Railway Division of Ministry of Communications with the Secretary of the Division being Director General. For administrative convenience and operational reasons, BR was bifurcated into two zones, East and West zone, headed by two General Managers.
12 Aug. 1995	:	Bangladesh Railway Authority (BRA) was formed comprising 9 members with honorable minister for Ministry of Communications as Chairman, for giving policy guidance of Bangladesh Railway.
23 Jun. 1998	:	East West Railway connectivity over the mighty river Jamuna was established from the day one, the day of formal opening of Jamuna Multipurpose Bridge, after completion of construction of Broad Gauge track from Jamtoil to Ibrahimabad.
14 Aug. 2003	:	Direct communication between Dhaka (Joydebpur) and Rajshahi over Jamuna Multipurpose Bridge was established by introducing first inter-city passenger train after completion of construction of new Dual Gauge track from Ibrahimabad to Joydebpur.
14 Apr. 2008	:	Direct communication between Dhaka and Kolkata was established by introducing "Maitree Express" Train.
04 Mar. 2010	:	Introduction of Ticket selling through Mobile Phone.

### 3.2.2 Marketing Management Process In A Railway Environment

Marketing seeks to improve corporate profitability by modifying the Marketing Mix, consisting of the four variables, the Seven P's, just described, in order to satisfy customer wants and needs. Clearly, units of the organization other than the Marketing or Commercial department will also have an important "Marketing" role. In the case of railways, those departments with a primary role in service delivery mainly the Operations, Mechanical Engineering and Civil Engineering Departments can crucially affect the quality and other characteristics of the Seven P's, and hence will have an important influence on the marketability of the railway product. However, it is the Marketing or Commercial

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governments, to reverse the declining trend in their net financial results. Closely linked with this requirement is the need for railway organizations to be able to respond effectively to competition which could, if allowed to go unchecked, drive down their net financial results to levels which would be politically unsustainable and might therefore lead to their demise. In this context, this section outlines the recent experience of some railway organizations of the ESCAP region.

### 3.2.4 The Place Of Marketing In The Railway Organization

#### 3.2.4.1 Considerations For Railway Marketing Unit

The position of the marketing unit in the railway organization chart and the structure of the marketing unit itself are important considerations, since they indicate very clearly the significance attached to the role of Marketing within the corporate organization and largely determine the effectiveness of the marketing function in achieving corporate goals. So, for the development of a Marketing capability, careful consideration should be given to the structure of the Marketing unit, the reporting relationships within this unit, and the reporting relationships between this Marketing unit and the senior corporate management positions in the overall organization. The structure and form of organization adopted desirably should permit:

- (i) Close and frequent communications between the Chief Executive Officer and the head of the Marketing unit, with both persons accepting a leading role in promoting a customer oriented marketing culture throughout the organization. (This is likely to require that the reporting line from the Chief Executive Officer to the head of the Marketing unit be as short as possible);
  - (ii) Effective co-ordination of railway commercial and operational activities, perhaps suggesting that both functions should be integrated in an organizational sense;
  - (iii) Integration of all elements of the marketing mix under a single management function, suggesting that responsibility for sales, market research and planning, pricing,
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Figure-4  
The Functional Department Model of Railway organization

Source: ESCAP: Guidelines for Development of Railway Marketing Systems and Procedures  
[<http://www.unescap.org>]

The second form of organization, Marketing as a service department, involves a passive role for Marketing in the corporate organization. Generally, this model integrates Marketing with the Corporate Planning function, under a single senior corporate manager reporting directly to the Chief Executive Officer. While this has the advantage of integrating the lead planning role of marketing within the corporate planning structure, it could threaten the close contact, which should exist between marketing staff and railway customers, thereby reducing the marketing plan to an "academic exercise, devoid of customer inputs. It should be noted also that, almost by definition, a Corporate Planning unit within any organization has a coordinating function; it must assemble planning inputs from all other units in the organization. Arguably, such a unit would be no less effective in discharging this role if Marketing were to be organizationally independent of it, in the sense that Marketing would be just like any other unit of the organization, contributing planning inputs under the coordination of the central Corporate Planning unit.

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the third listed form of organization (business units) with features of the second listed type of organization (marketing as a service department).

In 1992, the Malayan Railway or Keretapi Tanah Melayu (KTM) was separated from direct government budgetary control and restructured as a business enterprise under government ownership. The new corporatized organization, designated KTM Berhad, was built around an entirely new organization structure, which included Strategic Business Units, or SBU's, but also embodied some features of an organization with a Marketing cell functioning as service department.

There are four SBU's, of which three Passenger Services, Freight Services and Commuter Services have a reporting line to the Director, Operation and Customer Service who is also responsible for the Operations or Traffic function. The fourth SBU, Property, has a reporting line to the Director, Property Management. The three core business SBU's integrate marketing functions with some operating functions which are specific to their business. e.g. the Freight SBU has responsibility for wagon distribution, the Passenger SBU has responsibility for ticketing, etc. Responsibility for advertising and promotion is, however, exercised by the Corporate Services Division, which is also responsible for coordinating the preparation of the 5-year Corporate and annual Business Plans (with planning inputs from the SBU's which must prepare their own annual marketing plans). For this reason, the SBU's have a "dotted" reporting line to the Director, Corporate Services.

However, there are, both within and outside the region, examples of large railway systems which have opted for complete separation of management responsibility for the marketing and operations functions. One such is the National Rail Corporation of Australia which transports all interstate rail freight. It has a Corporate Headquarters located in Sydney, a Marketing Headquarters located in Melbourne, and an Operations Headquarters located in Adelaide (which is some 778 km by rail from Melbourne). The heads of the Marketing and Operations Divisions report directly to the Managing Director, based in Sydney. In this organization, only the operations and engineering functions are regionalized. To a large extent, the geographical environment in which the NRC operates, with a major concentration of railway customers in the east of the country, has dictated its organizational

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It is important that the Marketing unit should have responsibility for all seven elements of the Marketing mix. The unit will normally have four sections, each under a section manager, with responsibility for Sales, Planning/Market Research, Pricing and Advertising/Promotion. If justified by the workload, it may also be desirable to have a fifth department to provide advice to customers in logistics and materials handling matters (including the layout of rail loading/unloading facilities). Alternatively, responsibility for this function can rest with the Sales section.

### 3.2.5 Role Of Marketing In Railway Corporate Planning

#### 3.2.5.1 Importance Of Corporate Plan

Not all of the region's railways have so far implemented a corporate plan, but an increasing number are embracing a corporate planning philosophy. A well structured, practical corporate plan will ensure that an organization's resources and activities are always directed to the achievement of its own goals on the one hand and those of governments (and by inference taxpayers) on the other. Marketing can and must play a leading role in the corporate planning process by translating customer requirements into railway requirements for human physical and financial resources and management actions. The Railway Marketing Unit will also have a key role, along with top level management in developing the spirit of marketing in other departments of the railway, notably the Civil Engineering, Mechanical Engineering and Operations departments. It is therefore essential that the marketing system should be an integral part of the railway corporate planning structure, which embodies a mixture of "top down" and "bottom up" planning philosophy.

#### 3.2.5.2 Corporate Plan Linkages

In essence, a corporate plan will link together the plans of the functional departments of a railway within a cohesive framework, which will also integrate planning inputs from external sources, such as the National Economic Development, or other government plans. One possible approach to a railway corporate planning process is illustrated in Figure 4. In this process, interlinked plans are prepared at four levels: the macroeconomic level in

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Figure -5  
The Railway Corporate Planning Process

Source: ESCAP: Guidelines for Development of Railway Marketing Systems and Procedures  
[<http://www.unescap.org>]

Next in the planning hierarchy below the level of the Corporate Marketing or Business Unit plans have the function of developing pricing, sales and promotional strategies aimed at satisfying customer needs and maximizing revenue for the railway organization. Most importantly, they have the key function of translating the needs of the marketplace into requirements for railway service and resources in the form of manpower, route infrastructure, locomotives and rolling stock.

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This type of mission statement should be backed up with more specific statements of the corporate aims of the organization.

#### 3.2.5.3.2 Corporate Objectives

While the Corporate Mission Statement should define the broad purpose and direction of the organization in the longer term, the Corporate Objectives will have a more specific focus. They should indicate the specific targets, both physical and financial, to be achieved by the organization within the tenure of the corporate plan. For example, they could incorporate cost recovery objectives, such as "Reduction of the operating deficit to \$ W million, by year X" or productivity improvement objectives, such as "Increase gross tones per annum per employee to Y, by year Z". They will provide a clear target at which the strategies and plans of all components of the organization will be aimed during the timeframe of the corporate plan.

#### 3.2.5.3.3 Corporate Level SWOT Analysis

At the corporate level a SWOT Analysis should provide a realistic assessment of the strengths, weaknesses, opportunities and threats working for or against the organization in its quest to achieve its corporate objectives. SWOT factors may be assessed in relation both to the organization's external and internal environments. For an external SWOT analysis, the organization would need to assess the likely influence of factors external to the organization, which might present opportunities or threats for the organization. An example of an external opportunity might be the imposition by the government of increased road user charges on commercial road transport operators, since this might have the effect of improving the competitiveness of rail in relation to road transport operators.

Conversely, an increase in allowable axle loads for trucks might be an externally imposed threat for rail, since it would reduce its competitiveness with road transport. Internal SWOT analyses on the other hand are intended to identify the SWOT factors of the organization, in relation to those of its major competitors. They are intended to identify any positive or negative characteristics of the organization which must either be exploited or corrected to enable the organization to achieve its stated corporate objectives. An example of an internal

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### 3.2.5.3.7 Investment Plan

The Investment Plan details the organization's requirement for investment in new capital assets during the tenure of the corporate plan. The physical requirement of rolling stock and locomotives, extra track capacity or new line construction, and terminal infrastructure is identified and costed in the plan. Again, these requirements are sourced from the assessment of a train operating plan which has its origins in the appraisal of customer needs in the Marketing plan.

### 3.2.5.4 The Railway Marketing Plan

#### 3.2.5.4.1 Rationale & Goal

Apart from its importance as the primary source of input of customer related data as well as of traffic and revenue forecasts to the Corporate Plan, the Marketing Plan has a vital role as the vehicle for expression of: the organization's commercial objectives; the steps for realization of these objectives; and the actions (with assigned responsibilities) necessary to implement the strategies. Necessarily, the focus of the Marketing Plan is at the level of individual traffic, or market, segments, and indeed an important element of the Marketing Plan is the definition of these segments. Realization of objectives set for individual segments will collectively result in achievement of the overall corporate objectives as identified in the Corporate Plan. An essential requirement of any Marketing Plan is that it must be both practical and actionable.

#### 3.2.5.4.2 Market Segmentation

A good Marketing Plan must contain techniques for segmenting the market. Markets consist of buyers and buyers are not homogeneous in terms of demographic profiles, wants, purchasing power, geographical location, buying attitudes, and buying practices. Therefore it is unlikely that a broad marketing strategy applied across the entire spectrum of a railway's customers will succeed, because the needs of some (or probably most) customers will not be met in this process.

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Within the higher income, business or tourist segments thus identified in the Medium Distance Passenger market, there may be a further subdivision into service segments (e.g. airconditioned sitting car services and airconditioned sleeping car services).

For Freight customers, the subdivision into market segments is likely to be based on a combination of commodity type and handling mode (bulk, break and container). Almost all of the region's railways now identify container traffic as a segment in its own right.

Other segments are mainly commodity based. For example, in addition to containers, the Thai and Malaysian railways identify about 14 commodity based segments and the Indian Railways 10 or 11 commodity based segments. Each segment generally has its own requirements in terms of loading/transport cycle, wagon type, handling method and tariff (price). Bangladesh Railway can easily identify several commodity based services like garments, bulk commodities and other export goods. The commodity segments actually identified will be of particular significance to the railway seeking to segment its markets.

While there appears to be no obvious basis for the segmentation of parcels and express freight traffic, it is likely that this market may be subdivided on the basis of time sensitivity (e.g. overnight delivery, second day delivery, etc.).

The Commercial Property Leasing market will desirably be segmented in terms of end use, e.g. Warehousing, Retail Trade, Office accommodation, Hotel accommodation, etc., and possibly also in terms of lease tenure (short, medium and long term). Such as the Indonesian Railways with their Parahyungan and Argogede executive services between Jakarta and Bandung, and the Indian Railways with the Shatabdi and Rajdhani premium services between significant business centers and between the capital and significant business centers, respectively.

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The present age is the age of tough competition. BR has to develop and apply some specific strategic marketing plan to hold and increase market share. Some of the major strategies are as follows:

- 1 Inherited physical and structural weaknesses will be reduced to a minimum level by constructing new direct link route on priority basis.
- 2 Giving proper attention to time schedule, passenger comfort, and risk analysis quality of service will be increased.
- 3 Expired locomotives, coaching vehicles, goods will be replaced urgently.
- 4 Efficient and coordinated management system will be developed.
- 5 Special attention will be given to container handling in both zones.
- 6 Ensuring security and comfort as well as better services new markets will be explored.
- 7 Proper utilization of railway lands and properties should be ensured.

#### 3.2.5.4.5 Action Programs

Another important element of the Marketing Plan is the statement of actions needed to put the plan into effect and the assignment of responsibilities for these actions. This feature of the Marketing Plan recognizes the vital role of Marketing in leading and coordinating all of the railway activities aimed at delivery of railway services to satisfy customer needs. Thus, actions will be required of functional departments, but especially the Operations, Mechanical Engineering and Civil Engineering departments, to support achievement of the organization's commercial objectives. For example, if high standards of locomotive availability are necessary to support frequent high volume traffics, then the Marketing Plan will require actions on the part of the Chief Mechanical Engineer and his staff to assure the necessary level of availability.

#### 3.2.5.4.6 Traffic, Revenue And Profit Projections

Forecasts of traffic volume, revenue and financial contribution are important outputs of a Marketing Plan (and important inputs to the Corporate Plan). They are market segment related and are usually prepared as annual totals over a five year timescale. In most

## CHAPTER FOUR

### METHODOLOGY

The method of the study depends on the nature and purpose of the study. So every research study has its own individual method respectively. Methodology is the systematic and logical study of the principles of guiding scientific investigation, (Gould and Kolb, 1964, p. 425)

Methodology plays a vital role in any research, but the methods in practical uses somehow differ from one research to another. Any scientific investigation requires one or more research methods which enable researcher to conduct the study systematically. Research is a disinterested or unbiased search for knowledge, is a scientific effort of finding the truth. (Abedin, 1996, p.11)

Documentary analysis' (Kothari, p. 117, Good and Scates, 1954, p.) 630 used in the present study. This is defined as an attempt to find out what has happened in the course of time and to correlate the events, within the limits of available material on the one hand and of the researchers' intelligence and understanding on the other, into a meaningful sequence. (Abedin, p. 53)

A potential practical situation observation (Kothari, 1996, p. 117) and documentary analysis (Kothari, p. 117, Good and Scates, 1954, p. 670) conducted for descriptive analysis.

Hence selection of a well defined method is inevitable for conducting any research work. The documentary method is widely used here to draw the inference from the compilation, analysis and interpretation of assembled data. Here, 'Opinion Survey' (Kothari, p.117) is also used for qualitative judgments (Rummel, 1994, p.2) from the lower class passengers upper class passengers and middle class passengers at the field of Railway sector. For opinion survey 400 respondents were selected randomly from the two divisions (Pakshi and Lalmonirhat) of the west zone of Bangladesh Railway.



communication in 1971 after the independence of the country through the liberation war of 1971. So, the research period is considered from 1971 to 2012.

### 4.3 Population

All the passengers (lower class, upper class and middle class) traveling by Bangladesh Railway are considered as the population of the present study.

### 4.4 Sampling Technique

To analyze the First Objective of the study, Secondary data has been taken. A questionnaire related to the 2nd and 3rd objectives of the study has been prepared by the researcher. Having prepared the questionnaire, a pilot study in the form of a preliminary try out has been conducted on a small sample of 100 respondents. The items of the questionnaire have been selected on the basis of the findings of a pilot study. Then it has been implemented on the respondents and collected the raw data from their responses. Another questionnaire has been framed also to find out the customer care satisfaction of passengers (lower and middle class) regarding the problems of Service Marketing of Bangladesh Railway. After that the primary data has been put for analysis. In the present study, the Simple Random Sampling (SRS) technique has been followed to collect primary data.

### 4.5 Sample Size

A total of 400 respondents constitute the sample of the present study. Among them 100 are the lower class passengers, 100 are the upper class passengers, and the rest 200 respondents are the middle class passengers traveling by railway in different times. The reason behind selecting more number of middle class passengers than that of other classes is that, researchers found this group of passengers replied more enthusiastically. Passengers of Bangladesh Railway are classified into three groups as upper, middle and lower class considering the Ticketing value differences.

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selecting measuring instruments. Fourthly, personal competence of the investigator and ethical consideration for using the scale may account selecting a particular type of measuring instrument. Lastly, the accuracy for scoring the data, the feasibility of using appropriate statistical technique and the interpretation of results may influence the instrument selection in an empirical study. In view of above considerations, a questionnaire has been developed by the researcher for measuring problems and has been used for data collection in the present study.

### Construction Of The Questionnaire From Pilot Study

A Pilot study (Kothari, p. 125) has been conducted in order to select the items of the questionnaire. First, the researcher has collected a range of information regarding the issue through interview, consultation and observation. 120 persons have been interviewed (35 lower class passengers, 35 upper class passengers and 50 middle class passengers). All of them have been asked to express their opinion about the existing service marketing situation of Bangladesh Railway. The statements have been noted on the basis of their opinion and 49 items have been consisted under the supervision of the supervisor in the present study.

Then, the method of finding the Discriminative Power (DP) (Good and Hatt, p. 276) of each statement has been followed for primary item analysis. The method involves the process of identifying a statement which consistently separates those who are high from those who are low on the characteristics to be measured. That kind of item analysis used a technique different from correlation technique. Here, each item has been subjected to a measurement of its ability to separate the "Highs" from the "Lows". This is called the Discriminative Power (DP) of an item. Each item has been arbitrarily weighted on a point scale ranging from 0 to 4 depending on unwilling to answer, low support, support, High support and Very High support. This is called arbitrary method of weighting the response. After the first application on a sample of 120 respondents each item has been scored on the 0 to 4 scale points (Kothari, p. 105). The technique of finding the DP of the item the arbitrarily scored item for each subject has been summed up and the total scores for all the individuals have been arranged in order from the highest to the lowest. The first and the fourth quartiles of these scores have been calculated. So, those who fall above  $Q_1$  and those who fall below  $Q_3$

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Q.25	84	2.80	75	2.50	**0.30
Q.26	93	3.10	62	2.07	1.03
Q.27	79	2.63	68	2.27	**0.37
Q.28	85	2.83	59	1.97	0.87
Q.29	76	2.53	64	2.13	**0.40
Q.30	106	3.53	73	2.43	1.10
Q.31	108	3.60	69	2.30	1.30
Q.32	103	3.43	72	2.40	1.03
Q.33	78	2.60	65	2.17	**0.43
Q.34	96	3.20	63	2.10	1.10
Q.35	103	3.43	68	2.27	1.17
Q.36	99	3.30	74	2.47	0.83
Q.37	87	2.90	58	1.93	0.97
Q.38	81	2.70	55	1.83	0.87
Q.39	72	2.40	63	2.10	**0.30
Q.40	86	2.87	67	2.23	0.63
Q.41	89	2.97	65	2.17	0.80
Q.42	103	3.43	78	2.60	0.83
Q.43	84	2.80	72	2.40	**0.40
Q.44	73	2.43	58	1.93	0.50
Q.45	88	2.93	52	1.73	1.20
Q.46	94	3.13	66	2.20	0.93
Q.47	85	2.83	53	1.77	1.07
Q.48	97	3.23	61	2.03	1.20
Q.49	73	2.43	62	2.07	**0.37

\*\* Below 0.50 Value

Source: Survey data

The above analysis shows that 14 items have been excluded which are below 0.50 as a result, final lists of questionnaire contains 35 items. The selected 35 questions are classified into five major groups according to Five Marketing Mixes as product, price, place, promotion and people. That has been remained final form of questionnaire to be applied on selected respondents finally for collecting primary data.

## 4.7 Ethical Consideration

Throughout history, research has been shaped by ethical issues as these 'ethical decisions necessarily involve one's personality' (Taylor and Bogdan, 1975, p. 29). Ethics has become a cornerstone for conducting effective and meaningful research. As such, the ethical behavior of individual researchers is under unprecedented scrutiny (Best and Kahn, 2006;

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anybody and has not undertaken the research involving the collection, analysis, and interpretation of data what is known as academic fraud.

The researcher has followed appropriate statistical techniques and methods for analyzing data. Computing of various percentages corresponding, coefficient variation (CV), one sample t-test, pair t-test etc. have been done by applying SPSS and Excel software. The researcher finds out the relationship or differences supporting or conflicting original or new situation should be tested to determine with what validity data can be said to indicate any conclusion. Overall, the researcher has abided by the golden rule highly ethical behavior can be characterized as being fair, just and acceptable (Folch and Babin, 1997, p. 563).

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articles, published dissertations written by eminent scholars have been also considered as source.

## Data Analysis Procedures

The Present research study has followed the chronological order of the specific objectives for the analysis of Data.

### Objective One

To Analyze The Existing Service Structure Of Bangladesh Railway.

During the last decades, the shares of different modes have undergone major changes and in compensation with other countries, Road transport of the country has grown rapidly and rail's share has slipped down considerably. Critical analysis of the efficiency of Bangladesh Railway points up the dramatically worsening operating ratio over the last decades. This raises the question 'how far will the present trends continue?' and 'is it not possible to upgrade the overall operating performance of BR at all?'

The pessimism as to whether Bangladesh Railway can, in fact turn itself around is based on a number of considerations. The three critical ones appear to be:

The ongoing decline in Bangladesh Railway's operating performance.  
BR's failure to meet its action plan commitments on reform processes: and  
BR's inability to get the political attention to resolve its problems.

Although some of the problems are well documented, others have curiously received little attention of any governments in the past.

In the post liberation period and till early eighties Bangladesh Railway seemed to perform well, optimally realizing its full potential, of course, subjected to inherited structural and physical constraints. Current poor performance is usually a reflex of poor operating performance due to inefficiencies/lower productivity of both physical and human capital cost by development resource and institutional and policy constraints. in term

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## 5.1 The Existing Service Structure Of Bangladesh Railway

### 5.1.1 The Network

Bangladesh Railway has a total of 2,835 route kilometers at the end of the year 2009. East zone has 1,266 route kilometers of MG track only and West zone has 535 route kilometers of MG and 659 route kilometers of BG and 375 route kilometers of DG track. The total length of running track including track on double line, in the yards and sidings is 3,974 kilometers. (Information Book: Bangladesh Railway, 2012, p. 13)

### 5.1.2 Route Length By Civil Districts

Bangladesh Railway is not connected with all the civil districts of the country. At the end of 2008-2009 only 44 civil districts of the country could be connected by Railway. (Information Book: Bangladesh Railway, 2012, p. 13)

### 5.1.3 Tract Maintenance

Sophisticated tract maintenance methods are under active consideration of the Railway Administration to replace conventional methods. Mechanical tract lifting, slewing, tamping and laying machines have been introduced to Dhaka-Dakshin main line for tract maintenance. A tract recording trolley car is in use. (Information Book: Bangladesh Railway, 2012, p. 14)

### 5.1.4 Bridges

At the end of 2009-2010, there were a total of 3,380 bridges of which 2,903 are minor and 477 are major ones. Foot overbridges are provided in important cities and district towns. (Information Book: Bangladesh Railway, 2012, p. 14)

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modernize with computerized signaling and interlocking system. In ~~first~~ of the work 10 stations have already introduced computer base interlocking system including Akhaura and Sylhet station. Among the rests of 12 stations, 3 stations have already introduced computer base interlocking system and in other 9 stations, ~~signal~~ works are in process.

In Laksham~~am~~Noakhali branch line section in 8 stations, Mechanical Semaphore Arm signal have already replaced by non interlocked color light signaling system.

In Joydebpu~~ur~~Dhaka section, introduction of Dual gauge double line ~~computer~~ base interlocking system have been taken in hand & works progressing under ~~(IPDC)~~ Information Book: Bangladesh Railway, 2012, p. 14,15)

### 5.1.8 Telecommunication

Till late eighties, Bangladesh Railway's most of the Telecommunication facilities ~~were~~ taken on lease from Bangladesh Telegraph & Telephone Board (BTTB). These facilities were land line based, prone to interference and unreliable. In 1984 BR went for the modernization of its Telecommunication facilities. BR has an optical fiber based ~~tele~~ telecommunication network. The telecommunication network spans approximately over 1800 kms. And connects about 300 Railway stations. The system also serves about 1100 users through 10 exchanges. In addition to 1100 dial up type digital telepho~~nes~~, BR Telecommunication system provides about 300 train control Telephones and the same station to station telephones. Copper conductors are used for Block Instruments and the Block Telephones. Computerized Seat Reservation and Ticketing System (CSRTS) and Computerized Wagon Control System (CWCS) have been installed using this network. (Information Book: Bangladesh Railway, 2012, p. 16)

### 5.1.9 Locomotives

Bangladesh Railway now has basically two types of locomotives viz diesel Electric (DE) & Diesel Hydraulic (DH). The total fleet as on ~~30~~ June 2009 comprised 253 Diesel Electric (69 BG, 185 MG) and 26 Diesel Hydraulic (3 BG& 23 MG) locomotives.

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### 5.1.13 Mechanical Workshops

Bangladesh Railway has sheds, depots and workshops for maintenance of Rolling Stock. Locomotives are maintained in 3 (Three) places viz shed, shop and CLW, Carriage and Wagons are maintained in two places i.e. C & W Depot and Workshop. (Information Book: Bangladesh Railway, 2012, p. 18)

#### i) Locomotives Are Maintained In Following Workshops

1. Central Locomotive Workshop at Parbatipur, Dinazpur (CLW)
2. Diesel Workshop at Pahartali, Chittagong.
3. Diesel Workshop, Dhaka.
4. Diesel Workshop at Parbatipur, Dinazpur.

#### ii) Carriage & Wagons are maintained in following workshops

1. C & W Shop at Saidpur, Ishamari.
2. C & W Shop at Pahartali, Chittagong.

### 5.1.14 Railway Ferry Services

There were 28 marine vessels under Mechanical Department at the end of the year 2008-2009. The fleet of the marine vessels consists of two passenger vessels, 4 Tugs, 4 Wagon Ferry Barges, 5 Pontoon ramps, 4 Flats and 2 Berthing pontoon and 7 other crafts. (Information Book: Bangladesh Railway, 2012, p. 18)

### 5.1.15 Stores

Railway Material Management Department known as the Store Department of Bangladesh Railway carries out the responsibilities of assessment, purchasing, inspecting, stocking, preservation and supply of the materials as required and demanded by different using departments. Apart from the non-recruiting items, about 35,000 items are stocked in the

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main depots at Parhali and Saidpur and also at Diesel Sub Depots at Parbatipur, Dhaka and Pahartali for diesel spares.

The department also owns a modern offset printing press where intercity tickets, Printed Card Tickets and all sorts of money value forms are printed and supplied against the demand received from the user departments.

#### 5.1.16 Passenger Traffic

Bangladesh Railway is the principal mode of transportation of the country. With the development of road transport facilities there has been a shift in the passenger traffic with short distance passengers preferring road transport, because of their frequent and point to point services. During 2008-09 about 65 million passengers were transported by Bangladesh Railway against about 54 million during 2007-08. In order to render better services to the passengers, Bangladesh Railway introduced Intercity Train services in 1985. At present there are 70 Intercity Trains. Around 36.8% of the total passengers of Bangladesh Railway are being carried by the intercity trains which contribute approximately 79.2% to the total earning of passenger traffic. (Information Book: Bangladesh Railway, 2012, p. 19)

#### 5.1.17 Trade Union

There are 8 registered trade unions in BR to maintain a healthy relation between the employees and administration to pave the way for congenial working atmosphere on the system. (Information Book; Bangladesh Railway, 2012, p. 23)

#### 5.1.18 Social Cost

The BR is one of the largest government enterprises in the country and constitutes so to say the 'life line' of the nation. The network of Railway not only serves the country's trading community but also plays a vital role in the economic development and industrialization of the country. Although BR is expected to serve both as a commercial enterprise and as a public utility service but, as a commercial enterprise, it has an obligation

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3. The maintenance of law and order at stations and in standing passengers trains, prevention of overcrowding.
  4. Watching, loaded passenger trains when standing in the station.
  5. The arrest of those found committing nuisances or suffering from infectious disease and keeping the Station Premises clear of Idlers and Beggars.
  6. The examination of all empty carriages on arrival at terminal station for property left behind by passengers and to see that carriage fittings have not been tampered with.
  7. The removal of bodies and persons dying in the train and on station premises and the conveyance to hospital of the sick people.
  8. Investigation into cognizable offences committed with Railway limits and presentation of the same.
  9. The Arrest offenders in cognizable cases and detention of them in custody as well as persons arrested by Railway officers and made over to the police, and their production before the Magistrate.
  10. The Reporting of no cognizable case or infringement of byelaws of the line to proper authorities as also all instances of oppression or fraud on the part of Railway subordinates or others.
  11. The prosecution of cognizable case as well as no cognizable offences under Railway Act, 1890 on behalf of the management.

(Information Book: Bangladesh Railway, 2012, p. 25)

### The Railway Nirapatta Bahini

The responsibility of producing security to the Railway men, Railway properties and the properties entrusted to it for carrying falls under the duties of Railway Nirapatta Bahini (RNB).

### Railway Nirapatta Bahini Is Responsible For

1. Prevention and detection of crime on the Railway.
  2. Protection and safeguarding the Railway properties.
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Figure-6  
Organizational Structure Of Bangladesh Railway

Source: Information Book: Bangladesh Railway, 2012, p.9

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Table-3  
Organizational Structure Of Bangladesh Railway Staffs

Sl.		Designation	Duty
01	a.	Potter	Office Bearer of Goods Carrier
	b.	MLSS	Office Bearer of Goods Carrier
02	a.	Tally Clerk	Counting Goods
	b.	Train Number Taker (TNT)	Counting Loaded Goods in Trains
03.	a.	Goods Clerk (Grade: I)	Booking Goods
	b.	Parcel Clerk (Grade: I)	Booking Parcel
	c.	Booking Assistant (Grade: II)	Selling Ticket
	d.	Ticket Collector (T. C)	Collecting or Checking Ticket at the Stations
	e.	TRC	Counting the Shifted Goods
04.	a.	Goods Clerk (Grade: I)	Booking Goods
	b.	Parcel Clerk (Grade: I)	Booking Parcel
	c.	Booking Assistant (Grade: I)	Selling Ticket
05.	a.	Head Goods Clerk	Supervising of GCs
	b.	Head Parcel Clerk	Supervising of PCs
	c.	Head Assistant Clerk	Supervising of BA
	d.	Head Ticket Collector	Supervising of TCs
	e.	Train Ticket Examiner (T. T. E)	Collecting or Checking Ticket in the Trains
06.	a.	Junior Traffic Inspector Commercial (JRI)	Supervising of TTE
07.	a.	Senior railway Inspector (SRI)	Supervising of TTEs
	b.	Traffic Inspector of Commercial (TIC)	Supervising all below commercial Staffs
	c.	Traffic Inspector of Transportation (TIT)	Supervising all below Transportation Staffs
	d.	Traffic Inspector of Audit (TIA)	Auditing the Commercial Accounts
08.	a.	Assistant Commercial Officer (ACO)	Supervising all below commercial Staffs
	b.	Assistant Chief Commercial Manager (ACCM)	Management of Commercial Staffs
	c.	Traffic Account Officer (TAO)	Auditing the Commercial Accounts
	d.	Accounts Officer (AO)	Auditing the Commercial Accounts
09.	a.	Divisional Commercial Officer (DCO)	Supervising all below commercial Staffs
	b.	Additional CCM	Management of Commercial Staffs
	c.	Divisional Finance Advisor (DFA)	Financial Advisor
	d.	Divisional Accounts Officer (DAO)	Auditing the Commercial Accounts
	e.	Additional FA & CAO	Financial Advisor
10.	a.	Divisional Railway Manager (DRM)	Supreme Management
11.	a.	Chief Commercial Manager (CCM)	Top Most Management
	b.	FA & CAO	Top Most Financial Advisor

Source: Staffing Pattern of BR Traffic -Commercial Sector: Ascending Order



### 5.1.20 Number Of Officer And Staff

As on 30th June, 2012 there are 409 Officers and 23562 of different categories. The Staffs are graded/Classified as Class I and Class IV Staff. The ratio of officers and staffs is about 1:67 (Information Book: Bangladesh Railway, 2012, P22)

### 5.1.21 Training

Bangladesh Railway has got a built in system of imparting training to Railway officials including BCS officers and all categories of non-gazette staff to enable them to improve their skills and ability. For safe and efficient operation of the Railway a well equipped and modern railway training academy has been established in 1984 which is now located at Haliashahar, Chittagong. Four workshop Training units at Pahartali, Dhaka, Parbatipur and Ishurdi have been transferred under the control of Rector/Railway Training Academy, Haliashahar, Chittagong w.f 03.01.04 for imparting training in locomotive maintenance and operations staffs of mechanical department. In the year-2011 total 309 persons of different categories were trained including 34 no. BCS officers (Information Book; Bangladesh Railway, 2012, P22)

### 5.1.22 Financial Summary

The total operating revenue without considering the effect of public service obligation (PSO) and welfare grant of Bangladesh Railway for the year-2009 amounted to TK. 563.04 million. After meeting the total operating expenses of TK. 11272.79 million, the net operating income for the year came to TK. 5609.75 million.

On the other hand, Government paid an amount of Tk. 860.00 million and Tk. 208.57 million as PSO compensation and welfare grant respectively. As a result, total operating revenue duly considering the effect of PSO and welfare grant for the year 2009 amounted to Tk. 6731.62 million. So, after meeting the total operating expenses of Tk. 11272.79 million, the net operating income for the year came to Tk. 4541.17 million.

Table- 4  
FINANCIAL SUMMARY

Item		196-7C	200-0E	200-1C	(+)/( -)	Comparison with 200910 to 200-09
PLANT :						
Routekilometers		2,858.23	2,835.04	2,835.04	--	--
Trackkilometers		4,448.02	3,973.49	3,973.49	--	--
Locomotives						
Steam		343	--	--	--	--
Diesel		143	279	248	(-)	11.11
Coaching vehicles (in units)						
Passenger carriages		1,165	1,451	1,445	(-)	0.41
Other coaching vehicles		478	35	33	(-)	5.71
(including departmental vehicles)						
Freight wagons (including departmental wagons)						
In units		16,823	8,998	8,902	(-)	1.07
In terms of fourwheelers		19,616	11,909	11,821	(-)	0.74
Service (Figures in millions)						
Passenger carried		72.9	65.0	65.6	(+)	0.92
Passenger kilometers		3,317	6,801	7,305	(+)	7.41
Tonnes carried		4.88	3.01	2.71	(-)	9.97
Tonne kilometers		1,265	800	710	(-)	11.25
Operations :						
Vehiclekilometers						
pervehicle day on line						
Passenger	BG	243	366	368	(+)	0.55
Carriages	MG	211	264	265	(+)	0.38
Other coaching	BG	145	144	145	(+)	0.69
Vehicles	MG	79	90	90	--	--
Operations-Contd.						
Average number	BG	16	23	39	(+)	69.57
of passengers per	MG	19	26	30	(+)	15.38
4-wheeled vehicle						
Average number of passengers per train	BG	220	409	434	(+)	6.11
	MG	315	505	549	(+)	8.71
Wagorkilometers per	BG	24.5	136.0	29.2	(-)	78.50
wagon day on line	MG	29.3	10.7	17.3	(+)	61.68
Average wagon load	BG	13.7	25.7	25.1	(-)	2.33
during the run(in tones)	MG	9.3	10.4	8.58	(-)	17.5
Wagons per train	BG	41.9	50.4	50.5	(+)	0.20
	MG	50.1	46.9	46.9	--	--
Net load per	BG	338	752	733	(-)	2.53
train (in tonnes)	MG	320	397	317	(-)	20.15
Net tonnekilometers	BG	229	2043	424	(-)	79.2



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Item	196-70	200-09	200-10	(+)/( -)	Comparison with 200910 to 200-09
EMPLOYEES:					
Number of employees	55,825	30444	27971	(-)	8.12
Number of employees per 1,000 trainkilometers	3.23	1.93	1.76	(-)	8.80
Cost of Employees in crc (Taka)	12.37	401.9	435.56	(+)	8.37
Average cost per employee per month (Taka)	185	12711	12976	(+)	2.08
Percentage of cost employees to	48.9	39.6	38.6	(-)	2.52

Source: Information Book; Bangladesh Railway, 2012, P26

From the following tables some facts and figures of Bangladesh Railway service can be seen





Table-6 (Source:Information Book, Bangladesh Railway, 2012 <del>3</del> )												
ROUTE KILOMETERS												
Figures are in Kilometers												
Year	MG			BG			DG			Total System		
	East Zone	West Zone	Total	East Zone	West Zone	Total	East Zone	West Zone	Total	East Zone	West Zone	Total
July-June	1279.09	553.03	1832.12	-	936.25	936.25	-	-	-	1279.09	1489.28	2768.37
2000-2001	1276.71	553.03	1829.74	-	936.25	936.25	-	-	-	1276.71	1489.28	2765.99
2001-2002	1276.71	553.03	1829.74	-	660.22	660.22	-	365.00	365.00	1276.71	1578.25	2854.96
2002-2003	1276.71	553.03	1829.74	-	660.22	660.22	-	365.00	365.00	1276.71	1578.25	2854.96
2003-2004	1276.71	553.03	1829.74	-	660.22	660.22	-	365.00	365.00	1276.71	1578.25	2854.96
2004-2005	1266.21	534.67	1800.88	-	659.33	659.33	-	374.83	374.83	1266.21	1568.83	2835.04
2005-2006	1266.21	534.67	1800.88	-	659.33	659.33	-	374.83	374.83	1266.21	1568.83	2835.04
2006-2007	1266.21	534.67	1800.88	-	659.33	659.33	-	374.83	374.83	1266.21	1568.83	2835.04
2007-2008	1266.21	534.67	1800.88	-	659.33	659.33	-	374.83	374.83	1266.21	1568.83	2835.04
2008-2009	1266.21	534.67	1800.88	-	659.33	659.33	-	374.83	374.83	1266.21	1568.83	2835.04
2009-2010	1266.21	534.67	1800.88	-	659.33	659.33	-	374.83	374.83	1266.21	1568.83	2835.04
(MG = Metre Gauge, BG = Broad Gauge, DG = Dual Gauge (Both Broad and Metre Gauge mixed												

Table-9  
Summary Of Rolling Stock

Stock		BG		MG		Total	
Locomotives	Steam	-		-		-	
	Diesel	78		208		286	
	Total	78		208		286	
Carriages	Passenger Carriages	322		1150		1472	
	Other Coaching Vehicles	4		33		37	
	Total	326		1183		1509	
Freight		Units	4-W	Units	4-W	Units	4-W
	Covered Wagons	1190	1642	5760	6283	6950	7925
	Special Type Wagons	726	1025	2294	4158	3020	5183
	TOTAL	1916	2667	8054	10441	9970	13108

Note: 4-W = Four Wheelers

Source: Information Book: Bangladesh Railway, 2012, p.46

Table-12  
Punctuality Of Passenger Trains(BG & MG)

Year July- June	BG			MG		
	Intercity Trains	Mail & Express Trains	Local Trains	Intercity Trains	Mail & Express Trains	Local Trains
1969-70	-	90.5	90.1	-	72.4	79.0
2001-02	77.5	31.7	54.2	73.8	65.3	63.1
2002-03	61.8	37.2	44.4	70.7	57.5	63.3
2003-04	64.5	43.8	40.7	79.8	60.9	59.7
2004-05	61.4	44.3	31.7	69.8	60.5	57.2
2005-06	78.9	48.8	38.0	62.8	50.7	58.9
2006-07	81.9	59.5	47.4	68.9	50.9	68.4
2007-08	90.7	89.4	68.8	63.2	63.7	79.0
2008-09	88.3	83.6	62.3	61.0	65.5	83.1
2009-10	67.3	71.4	58.5	69.3	57.5	72.0

Note: The figures of the passenger and mixed trains for the year 1969/70 have been included in local trains.

Source: Information Book: Bangladesh Railway, 2012, p.68

Table-13  
Coaching Vehicle Performance(BG)

YEAR JULY - JUNE	Vehicle kilometers per vehicle day on line		Percentage of average number of vehicle under or awaiting repairs daily to average total number on line		Average number of passenger per vehicle	Average number of passenger per train
	passenger carriages	other coaching vehicles	passenger carriages	other coaching vehicles		
1969-70	243	145	12.6	11.0	16	220
2001-02	226	126	31.7	19.0	14	192
2002-03	229	152	28.1	19.0	15	209
2003-04	257	192	20.6	22.0	17	242
2004-05	276	147	20.0	9.52	16	256
2005-06	278	157	23.25	14.2	19	303
2006-07	296	169	24.4	8.12	20	322
2007-08	343	151	25.5	8.16	22	398
2008-09	366	144	20.5	19.0	23	409
2009-10	368	145	22.1	14.3	39	434

Source: Information Book: Bangladesh Railway, 2012, p.8

TABLE NO: 16 (Source:Information Book: Bangladesh Railway, 2012, 2010)												
OPERATING REVENUE AND OTHER PERCENTAGE												
TAKA IN THOUSANDS												
YEAR	passenger earnings tk.	%	other coaching earnings tk.	%	freight earnings tk.	%	Miscellaneous earnings tk.	%	Sale of Land tk.	%	Reg eivable tk.	Total tk.
196970	101711	33.6	25737	8.49	169422	55.9	6169	12.04	-	-	-	303039
200102	1589163	40.9	95883	2.50	1465862	37.7	733077	18.9	-	-	-	3883985
200203	1611062	38.3	100201	2.40	1449546	34.5	1040167	24.8	-	-	-	4200976
200304	1732435	44.0	104304	2.60	1343592	34.1	761384	19.3	-	-	-	3941715
200405	1661041	37.3	101300	2.30	1262223	28.3	1431677	32.1	-	-	-	4456241
200506	1749986	39.4	97190	2.10	1268717	28.6	1326860	29.9	-	-	-	4442753
200607	1831477	40.45	90951	2.01	1245363	27.51	1359815	30.03	-	-	-	4527606
200708	2240468	39.89	97029	1.73	1410375	25.11	1868589	33.27	-	-	-	5616441
200809	2715962	43.43	107977	1.73	1313678	21.00	2115911	33.84	-	-	-	6253528
200910	2917686	51.52	116577	2.06	1165778	20.59	1463001	25.83	-	-	-	5663042

**TABLE-18 (Source:Information Book: Bangladesh Railway, 2012, 10)**  
**DEPARTMENT WISE NUMBER OF EMPLOYEES**

YEAR	Admin- istration	Nirapat ta bahini	accounts	engineer ing	signal & Tele- commun ication	estate	mecha nical	Traffic	Electrica l	Medical	Stores
1969-70	3138	-	1440	12019	-	-	20005	11885	2160	3204	1974
2001-02	1240	2029	1364	6747	1440	213	10926	7147	1897	1505	1032
2002-03	1238	2031	1341	6560	1420	208	10624	7006	1841	1446	1012
2003-04	1223	2043	1289	6303	1425	195	10534	7000	1781	1400	975
2004-05	1260	2587	1257	6150	1472	201	10952	6977	1865	1429	1022
2005-06	1223	2449	1214	5982	1443	198	10749	6703	1821	1403	1021
2006-07	1178	2408	1150	5775	1409	195	10409	6481	1814	1332	1044
2007-08	1129	2401	1089	5500	1412	190	9900	6255	1760	1250	988
2008-09	1052	2369	1019	5285	1379	181	9392	6012	1644	1180	931
2009-10	998	2273	941	4918	1305	170	8519	5361	1493	1132	861

Table-21  
Number And Cost Of Employees

YEAR July- June 196970	Total number of employees	Total cost of employees (Thousands Taka)	Number of employees per 1000 train kilometers	Average cost per employee per month (Taka)	Percentages of cost of employees to total operating expenses (percent)
1969-70	55825	123715	3.23	185	48.9
2001-02	35540	2417578	2.41	5669	45.1
2002-03	34727	2451926	2.37	5864	41.8
2003-04	34168	2569673	2.28	6267	40.2
2004-05	35172	2882106	2.28	6829	41.5
2005-06	34206	3259014	2.25	7940	33.9
2006-07	33195	3680800	2.19	9240	39.4
2007-08	31874	4237606	2.05	11079	38.9
2008-09	30444	4018992	1.93	12711	39.6
2009-10	27971	4355686	1.76	12976	38.6

\* Excludes cost of superannuation allowances and pensions, contribution to provident fund and gratuities.

Source: Information Book: Bangladesh Railway, 2012, p.19



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	unsuitable service structure			
Q.7	Punctuality of trains is not impressive.	87.75	91.00	92.25
Maximum Support		88.50	93.80	96.00

Source: Survey data

Table exhibits the percentage corresponding to the opinions of the respondents on existing Service offered by Bangladesh Railway.

Here the variable Q.1 is highly supported (96.00%) by the Upper class passengers Q.2 is highly supported by (94.00%) by the Upper class passengers. Q.3 is highly supported (93.50%) by the Middle class Passengers; Q.4 is highly supported (91.25%) by the Upper class passengers. Q.5 is highly supported (91.1%) by the Middle class passengers, Q.6 is highly supported (93.75%) by the Upper class passengers and Q.7 is highly supported (92.25%) by the Upper class passengers.

Table-23:

Co-efficient of Variation (CV) of Product (Railway Service)

Respondent	No. of Respondent	Standard Deviation	Mean	CV
Lower Class Passengers	100	2.110364036	24.53	8.6031962
Upper Class Passengers	100	1.454321321	25.81	5.6347203
Middle Class Passengers	200	1.317747049	25.835	5.1006272

Source: Survey data

Table exhibits the CV of Lower Class, Upper Class and Middle Class Passengers. From the CV of different kinds of respondents, the Middle Class Passengers CV is less than that of others which indicate the opinions of Middle Class passengers are homogeneous and more consistent than that of Lower Class and Upper Class Passengers.

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association of opinion between Upper class passengers and Middle class passengers is not significant at  $\alpha.05$  level.

Table-26:  
Calculation of Scores on Price

Variable no.	Variable Description	Lower Class Passengers (100)	Upper Class Passengers (100)	Middle Class Passengers (200)
Q.1	The existing pricing structure of Bangladesh Railway is inappropriate for the present situation.	91.50%	97.25%	96.00%
Q.2	In order to achieve the goal of Bangladesh Railway there needs a change of pricing structure of Bangladesh Railway.	92.00%	93.75%	94.13%
Q.3	In spite of being a modern transportation system, the overall pricing structure of Bangladesh Railway is too weak.	88.75%	92.75%	92.63%
Q.4	The passengers of Bangladesh Railway are being deprived of getting proper customer care and service according to the value (price) they are paying.	89.00%	91.00%	91.75%
Q.5	Bangladesh Railway will be able to play a vital role in the way of communication sector much effectively than the present situation if it changes its current pricing structure.	90.00%	90.50%	93.25%
Q.6	The weaker pricing structure of Bangladesh Railway acts as an impediment to establish good service.	87.25%	93.25%	94.00%
Q.7	Bangladesh Railway will be able to play a vital role in the sector of internal communication of the country if it changes its pricing structure.	89.75%	94.50%	91.50%
Maximum Support		92.00%	97.25%	96.00%

Source: Survey data

The above Table indicates the One Sample Ttest corresponding to the Price of the service of Bangladesh Railway. The table shows that the opinion of each kind of respondents is significant at  $\alpha$  .05 level.

Table-29:  
Paired Samples Ttest of the Scores on Price

Respondents	Paired Difference					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Upper	Lower			
Pair1 Lower-Upper	-.99000	2.49644	.24964	-1.48535	-.49465	-3.966	99	.000
Pair2 Lower-Middle	-.73000	2.39888	.23989	-1.20599	-.25401	-3.043	99	.003
Pair3 Upper-Middle	.26000	2.12070	.21207	-.16079	.68079	1.226	99	.223

Source: Survey data

The above Table exhibits the paired sample t test corresponding to the price of the service of Bangladesh Railway. Here, it shows that the opinions between Lower class passengers and Lower-Middle class passengers are associated and significant at  $\alpha$  .05 level. But the association of opinion between Upper class passengers and Middle class passengers is not significant at  $\alpha$  .05 level.

Table-30:  
Calculation of Scores on Place (Channels of Distribution)

Variable no.	Variable Description	Lower Class Passengers (100)	Upper Class Passengers (100)	Middle Class Passengers (200)
Q.1	Bangladesh Railway fails to achieve its goals due to lack of time oriented places (distribution channels)	91.00%	94.75%	91.75%
Q.2	Good channels of distribution (Place) will	89.00%	93.75%	90.13%

Table exhibits the CV of Lower, Upper and Middle class passengers. From the CV of different kinds of respondents, the Upper class passengers CV is less than that of others which indicate the opinions of Upper class passengers are homogeneous and more consistent than that of Lower and Middle class passengers.

Table-32:  
One-Sample T-test of the Scores on Place (Channels of Distribution)

Respondents	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Lower	128.391	99	.000	25.0200	24.6331	25.4067
Upper	186.007	99	.000	25.8200	25.5446	26.0954
Middle	167.441	199	.000	24.8150	24.5228	25.1072

Source: Survey data

The above Table indicates the One-Sample T-test corresponding to the Place (Channels of Distribution) of Bangladesh Railway. The table shows that the opinion of each kind of respondents is significant at p05 level

Table-33:  
Paired Samples T-test of the Place (Channels of Distribution)

Respondents	Paired Difference					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Upper	Lower			
Pair1 Lower-Upper	-.80000	2.28301	.22830	-1.25300	-.34700	-3.504	99	.001
Pair2 Lower-Middle	.36000	3.04020	.30402	-.24324	.96324	1.184	99	.239
Pair3 Upper-Middle	1.16000	2.68449	.26845	.62734	1.69266	4.321	99	.000

Source: Survey data

by the Middle class passengers, Q.4 is highly supported (90.25%) by Upper class passengers, Q.5 is highly supported (90.50%) by the Upper class passengers, Q.6 is highly supported (91.25%) by the Upper class passengers and Q.7 is highly supported (91.75%) by the Upper class passengers.

Table-35:

Co-efficient of Variation (CV) of the Scores on Promotion

Respondent	Number of Respondents	Standard Deviation	Mean	CV
Lower Class	100	2.06275289	24.74	8.337729
Upper Class	100	1.420307265	25.75	5.5200438
Middle Class	200	1.786823632	25.385	7.0388955

Source: Surveydata

Table exhibits the CV of Lower, Upper and Middle class passengers. From the CV of different kinds of respondents, the Upper class passengers are less than that of others which indicate the opinions of Upper class passengers are homogeneous and more consistent than that of Lower and Middle class passengers.

Table-36:

One-Sample T-test of the Scores on Promotion

Respondents	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Lower	119.937	99	.000	24.74000	24.3307	25.1493
Upper	181.158	99	.000	25.73000	25.4482	26.0118
Middle	200.914	199	.000	25.38500	25.1351	25.6349

Source: Survey data

The above Table shows the One-Sample T-test corresponding to the Promotion of Bangladesh Railway. The table shows that the opinion of each kind of respondents is significant at  $\alpha$  .05 level

	respond to the needs of customers according			
Q.5	Bangladesh Railway has less number of staffs to give the required service.	87.50%	95.50%	92.75%
Q.6	The Staffs need training on regular basis to perform their dutie well.	89.00%	93.50%	93.25%
Q.7	Staffs have less customer awarenes:	89.25%	95.75%	93.50%
Maximum Support		89.50%	98.00%	96.13%

Source: Survey data

Table exhibits the percentage corresponding to the opinion of the respondents on People (Staffs) of Bangladesh Railway.

Here the variable Q.1 is highly supported (98.00%) by the Upper class passengers, Q.2 is highly supported (96.75%) by the Upper class passengers, Q.3 is highly supported (94.38%) by the Middle class passengers, Q.4 is highly supported (93.0%) by Middle class passengers, Q.5 is highly supported (95.50%) by the Upper class passengers, Q.6 is highly supported (93.50%) by the Upper class passengers and Q.7 is highly supported (95.75%) by the Upper class passengers.

Table-39:

Co-efficient of Variation (CV) of the Scores on People (Staffs)

Respondent	Number of Respondents	Standard Deviation	Mean	CV
Lower Class	100	1.83046607	24.73	7.401803
Upper Class	100	1.175679473	26.54	4.4298398
Middle Class	200	1.22780803	26.25	4.476473

Source: Survey data

Table exhibits the CV of Lower, Upper and Middle class passengers. From the CV of different kinds of respondents, the Upper class passengers CV is less than that of others which indicate the opinions of Upper class passengers are homogeneous and consistent than that of Lower and Middle class passengers.

Table-42  
Calculation of the Score of 100 Lower Class Passengers

Variable no.	Variable Description	Yes Opinion	No Opinion
Product(Railway Service) Related Questions			
Q.1	Is the service of Bangladesh Railway able to satisfy you and capable of accomplishing your expectation?	16%	84%
Q.2	Is Bangladesh Railway giving you better service than other transportation	14%	86%
Q.3	Do you think that Bangladesh Railway has enough equipment and manpower to give your desired service	19%	81%
Q.4	Is it possible to formulate a fundamental development of Bangladesh Railway without constructing its infrastructural change, modification and enlargement?	23%	77%
Price Related Question			
Q.5	Are you happy paying the price for that standard of service you are getting from Bangladesh Railway	15%	85%
Q.6	Are you getting proper customer care for the price you are paying	18%	82%
Q.7	Do you see any advancement of Bangladesh Railway service with the present pricing structure	26%	74%
Q.8	Is the current pricing structure of Bangladesh Railway low?	17%	83%
Place(Channels of distribution) related Questions			
Q.9	Are you satisfied with the number of ticket counters BR has?	15%	85%
Q.10	Do you think that the railway stations are modern enough to deliver satisfactory service	14%	86%
Q.11	Do you think Railway stations are safe enough for you and for your luggage	14%	86%
Q.12	Does Bangladesh Railway ensure door to door services for the passengers and commodities like road services	16%	84%
Promotion Related Questions			
Q.13	Do you see any advertisement of BR which motivates you to take their service	20%	80%
Q.14	Do you think that the existing promotional activities are enough to attract customers towards the organization?	21%	79%
Q.15	Do you think that BR will be able to achieve a commanding position in transport sector without taking any significant promotional program	17%	83%
Q.16	Do you see any seasonal discount, or any sort of discount fare rate for regular passengers	16%	84%
People(Staffs) Related Questions			
Q.17	Is the manpower structure of BR is huge enough to	16%	84%

Talbe-43:  
Calculation of the Score of 100 Upper Class Passengers

Variable no.	Variable Description	Yes Opinion	No Opinion
Product(Railway Service) Related Question			
Q.1	Is the service of Bangladesh Railway able to satisfy you and capable of accomplishing your expectation	15%	85%
Q.2	Is Bangladesh Railway giving you better service than other transportation	13%	87%
Q.3	Do you think that Bangladesh Railway has enough equipment and manpower to give your desired service	17%	83%
Q.4	Is it possible to formulate a fundamental development of Bangladesh Railway without constructing its infrastructural change, modification and enlargement?	20%	80%
Price Related Questions			
Q.5	Are you happy paying the price for that standard of service you are getting from Bangladesh Railway?	14%	86%
Q.6	Are you getting proper customer care for the price you are paying?	16%	84%
Q.7	Do you see any advancement of Bangladesh Railway service with the present pricing structure?	22%	78%
Q.8	Is the current pricing structure of Bangladesh Railway low?	15%	85%
Place (Channels of distribution) Related Question			
Q.9	Are you satisfied with the number of ticket counters BR has?	14%	86%
Q.10	Do you think that the railway stations are modern enough to deliver satisfactory services?	13%	87%
Q.11	Do you think Railway stations are safe enough for you and for your luggage?	14%	86%
Q.12	Does Bangladesh Railway ensure door to door services for the passengers and commodities like road sector?	15%	85%
Promotion Related Questions			
Q.13	Do you see any advertisement of BR which motivates you to take their service?	21%	79%
Q.14	Do you think that the existing promotional activities are enough to attract customers towards the organization?	19%	81%
Q.15	Do you think that BR will be able to achieve a commanding position in transport sector without taking any significant promotional program?	16%	84%
Q.16	Do you see any seasonal discount, or any sort of discount fare rate for regular passengers?	14%	86%
People (Staffs) Related Question			
Q.17	Is the manpower structure of BR is huge enough to ensure customer care?	15%	85%





Table-44:  
Calculation of the Score of 200 Middle Class Passengers

Variable no.	Variable Description	Yes Opinion	No Opinion
<b>Product(Railway Service) Related Questions</b>			
Q.1	Is the service of Bangladesh Railway able to satisfy you and capable of accomplishing your expectation?	17%	83%
Q.2	Is Bangladesh Railway giving you better service than other transportation?	16%	84%
Q.3	Do you think that Bangladesh Railway has enough equipment and manpower to give you desired service?	15%	85%
Q.4	Is it possible to formulate a fundamental development of Bangladesh Railway without constructing its infrastructural change, modification and enlargement?	20%	80%
<b>Price Related Question</b>			
Q.5	Are you happy paying the price for that standard of service you are getting from Bangladesh Railway?	17%	83%
Q.6	Are you getting proper customer care for the price you are paying?	19%	81%
Q.7	Do you see any advancement of Bangladesh Railway service with the present pricing structure?	19%	81%
Q.8	Is the current pricing structure of Bangladesh Railway low?	17%	83%
<b>Place (Channels of distribution) Related Questions</b>			
Q.9	Are you satisfied with the number of ticket counters BR has?	15%	85%
Q.10	Do you think that the railway stations are modern enough to deliver satisfactory services?	15%	85%
Q.11	Do you think Railway stations are safe enough for you and for your luggage?	17%	83%
Q.12	Does Bangladesh Railway ensure door to door services for the passengers and commodities like road transport?	18%	82%
<b>Promotion Related Questions</b>			
Q.13	Do you see any advertisement of BR which motivates you to take their service?	17%	83%
Q.14	Do you think that the existing promotional activities are enough to attract customers towards the organization?	15%	85%
Q.15	Do you think that BR will be able to achieve a commanding position in transport sector without taking any significant promotional program?	13%	87%
Q.16	Do you see any seasonal discount, or any sort of discount fare rate for regular passengers?	12%	88%
<b>People (Staffs) Related Questions</b>			
Q.17	Is the manpower structure of BR is huge enough?	18%	82%

### 5.3 Triangulation

In the present study, the researcher has collected both Qualitative Data and Quantitative Data. Then the Researcher analyzed Data using the mixed approach (Creswell, 2009) of Creswell. Analyzing data, the researcher has interpreted data and their result to formulate the findings of the research study.

Qualitative (Data & Result) + Quantitative (Data & Result) =  
Interpretation (Findings) (Creswell, 2009)

First the researcher has framed three individual questionnaires and has collected primary data from the respondents in Qualitative approach. Then the researcher has calculated the scores of the opinions of the respondents in Quantitative approach. The researcher has formulated the matrix of the beneficiaries using both percentage and mean corresponding of the scores.

Matrix of Beneficiaries and the functions of Service Marketing of Bangladesh Railway:

Table-45:  
Triangular Analysis by Percentage Corresponding

Functions of Service Marketing	BENEFICIARIES		
	Lower Class Passenger	Upper Class passenger	Middle Class passenger
Product	82.00 %	83.75 %	83.00 %
Price	81.00 %	83.25 %	82.00 %
Place	85.25 %	86.00 %	83.75 %
Sales Promotion	81.50 %	82.50 %	85.75 %
People	84.75 %	86.25 %	80.75 %

Source: Surveydata

The triangular analysis of the scores of the respondents shows that they are closely related in their opinion. So, it can be said that the opinions of the respondents are highly significant.

delivery service to the final destination, all these need to be developed in proportion to the demand of age which fails to achieve organizational goals.

2. The standard of customer care is being highly hampered due to lack of good service structure and Punctuality of trains: According to the number of trains operated and route kilometers the existing supplies of locomotives, carriage and wagons are not sufficient. Due to unavailability of locomotives, carriage and wagons, number of train is limited and sometimes few trains in some routes are cancelled. Due to insufficient supply of stores of spare parts, timely and proper outputs of workshops are interrupted. As a result the objective of comfortable, safe movement is not always achieved and trains fail to maintain punctuality (departure and arrival time).
3. The existing pricing structure of Bangladesh Railway is inappropriate and also is a hindrance to achieve organizational goals. BR faces problems in pricing, they are:
  - a. Constraints on charges imposed through government regulation: BR has no commercial freedom to impose charges for their services other than to abide by government regulations. BR is not able to do commercial utilization of assets and land area by its own choice.
  - b. Provision of services at below marginal cost: Tariff of the Railway is not cost based and is dictated by the wide social and economic interest of the country. Consequently, it has not been possible for BR to balance the earning and expenditure due to the continuation of operation of non profitable services, especially, the uneconomic branch lines or train services and few other similar non economic factors. Besides, as a matter of national policy, BR is required to provide transport of essential commodities on top priority basis in emergent situations and also to provide concession transport facilities for essential commodities of common consumption by the economically weaker sections of the community.
  - c. Ineffective in collecting revenues: BR has not been able to collect its revenues properly because of many malpractices done by its staffs.
  - d. Over manning: Like many other government organizations BR has huge number of staffs which is an overburden for the organization causing more expenditure.

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railways, these will include not only passenger stations and freight terminals, but corporate/regional/divisional headquarters, centralized railway reservation offices, hotels, travel agents, and freight forwarders' offices and terminals.

Railway has internal channels of distribution and external channels of distribution.

Internal channels of distribution includes: Passenger Stations and Freight Terminals, Corporate/Regional/Divisional headquarters, Centralized railway reservation offices, Call centers, Websites, fax and email.

External channels of distribution includes: Hotels, Travel agents and Freight forwarders', Offices and Terminals

BR does not provide all these above mentioned Internal and External channels of distributions for its customers.

7. Absence of Advertisements in the media and the Salesmanship is not available and inefficient: For any organization advertisements play a vital role to attract customers towards it and ultimately to increase sales volume. In case of BR, no advertisement is seen in the media. Railway sales forces have a passive or reactive, rather than a proactive role, serving existing customers rather than seeking and securing new customers, order taking rather than order generating. Furthermore, these sales forces have not been organized in a way which would assist them to actively promote railway services and secure new business. Most Railway sales forces have not been able to develop the specialized knowledge of individual market segments needed to be able to effectively sale railway services to these segments
  8. The present promotional policy is not customer oriented and ineffective. Promotion includes advertising, sales force representation and public relations. Only a relatively few railway organizations have encouraged market segment specialization by their sales
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handicapped to serve the country effectively and efficaciously without proper operation and development

### 1. (b) Gauge Problems

Bangladesh Railway has been suffering from various operating bottlenecks. The railway system comprises two gauges, Broad and Metre which involves transshipments of traffic at the break of gauge points. Similarly transshipments are also involved at riverain points. Besides, during rainy season direct route links are often disrupted in many points.

### 2. (a) Managerial Problems

Bangladesh Railway management system is under experiment for a long time. Till June 2, 1982, the management and development of railway was vested with a Railway Board, comprising of a Chairman and four members. But, for administrative convenience and operational reason the Railway Board was abolished with effect from June 3, 1982 and the function of the Railway Board was vested with the Railway Division of the Ministry of Communications with the Secretary of the Division working as the Director General of Bangladesh Railway. For the same purpose the Railway bifurcated into two zones, East & West, under the administrative control of two General Managers (GMs), who are responsible/ accountable to the Director General (DG) of Bangladesh Railway. Subsequently on August 12, 1995, Railway was separated from the Ministry and entrusted with Director General drawn from the Railway professionals. For policy guidance, a 9 (nine) member Bangladesh Railway Authority (BRA) was formed with the Minister of Communications as its Chairman. The Director General is assisted by in Additional Director Generals and second Joint Directors Generals. Frankly speaking, the DG holds little control over different activities especially related to planning & policy formulation. This creates operational as well as planning and development problems.

### 2. (b) Lack Of Coordination

Bangladesh railway is a large organization comprising of two zones East & West, divided by the river Jamuna, under the administrative control of two GMs who are accountable to

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One of the major problems, presently faced by the Bangladesh Railways is a serious shortage of locomotives and route capacity. Far from having insufficient traffic on its trunk routes, the BR suffers an excess of traffic in relation to the capacity of these routes. Operating priority on these routes is given to passenger trains, and freight trains incur major delays and frequent cancellations as a result.

Since the liberation of Bangladesh, instead of constructing new rail routes, some of the branch line railway sections were declared redundant and subsequently closed and no proper attention to maintain the existing asset was being given. The condition of locomotives (rail engines) is also miserable. The musclemen are occupying railway land and properties. Already 12,000 acres lands have been illegally dispossessed out of its 23,900 acres land. No guardian stands to say for BR, to see its future. At present, BR owns 170 trains of which 34 are Intercity, 40 are Mail & Express and rest 96 are local trains (66 in East zone and 30 in West zone). The serviceable life of the locomotives of 140 trains out of 170 has already been expired. Most of the locomotives are running over 50 years. Presently, railway owns 1400 carriages/bogies (400 for Intercity, 400 for Mail & Express and 576 for local trains) and most of them are backdated.

#### 4. Financial Problems

BR has to maintain its track, building, locomotives, coaches & wagons, signaling system, electric substations etc. by its own cost, which cause increase in operating expenses as well as decreases net operating income. Furthermore, the yearly financial budget is too small to maintain only overhead and variable costs. Development works cannot move forward due to insufficient budget. It needs huge investment to come to a standard position and then it can be moved smoothly. Budget constraints act as a barricade towards all the necessary development works.

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4. After the liberation war of 1971, BR has not been able to expand its network significantly. At present, 1200 kms rail lines are under risk for operation due to lack of proper maintenance. As a result, derailment has become common. BR has a serious shortage of locomotives and route capacity. Far from having insufficient traffic on its trunk routes, the BR suffers an excess of traffic in relation to the capacity of these routes. Operating priority on these routes is given to passenger trains, and freight trains incur major delays and frequent cancellations as a result.
  5. Since the liberation of Bangladesh, instead of constructing new routes, some of the branch line railway sections were declared redundant and subsequently closed and no proper attention to maintain the existing asset was being given. The musclemen are occupying railway land and properties. Already 12,000 acres lands have been illegally dispossessed out of its 23,900 acres land. No guardian stands to say for BR, to see its future.
  6. The condition of locomotives (rail engines) is miserable. At present, BR has 170 trains of which 34 are Intercity, 40 are Mail & Express and rest 96 are local trains. The serviceable life of the locomotives of 140 trains out of 170 has already been expired. Most of the locomotives are running over 50 years. Presently, railways have 400 carriages/bogies (400 for Intercity, 400 for Mail & Express and 576 for local trains) and most of them are backdated. Old engines consume excessive amount of fuel due to leakage, wear and tear and sudden engine breakdown/ failure happens and old backdated carriages fail to attract customers and needs excessive maintenance which causes more expenditure.
  7. Most of the route networks are single line based, which reduces traffic density and increase running time. BR has to introduce double line at main network to increase traffic density and reduce running time. New locomotives, coaches and wagons should also be provided to match the growing demands. Modern color light signaling system should also be introduced in all stations. BR needs to improve physical structure and to remove bottlenecks resulting from inadequate infrastructure and outdated rolling stock & workshop facilities. It needs to build adequate infrastructure in rail track signaling, telecommunication, commerce & business, manufacturing & maintenance workshops etc. BR needs to strengthen its existing facilities of workshop and machineries to cope
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## Recommendations

There is a lot of scope to increase the efficiency of Bangladesh Railway. Most important way is to strengthen BR's operational capacity and efficiency through reducing its inherited physical & structural weakness by rehabilitation as well as reorientation and all the way through institutional and organizational reform processes and developing & implementing effective integrated multimodal transport policy emphasizing the importance of railway transportation in respect to our socioeconomic context. The adoption of market oriented philosophy can make BR more competitive and market oriented commercial viable organization. This reorientation and reform processes may be appeared as blessing to BR as well as to country's transport sector for the sustainable development of the country. Operational efficiency of BR would be improved through optimizing the use of assets. Thus railway would be more responsive to market needs through organizational reform incorporating structural changes and sound business practices.

In this context, a transportation act and appropriate regulatory institutions have to be in place for enforcing and overseeing objectives of the transport sector. Legislation must be properly implemented and enforced for proper functioning of transport internal market. An independent Commission for Integrated Transport should be established to advise Government and to monitor progress on the implementation of policy. Present deficiencies of sector bias, improper modal mix, unsustainable development, and integrated development should be removed through strategic planning. Although Bangladesh Railway is a vastly prospective transport organization in Bangladesh, but for the lack of proper marketing application it has failed to achieve its objectives and goals. Based on findings and conclusions of the study, the following recommendations are seen feasible for the improvement of the existing service marketing of Bangladesh Railway.

Recommendations are given accordance with the objectives of the study.

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- c) BR should declare incentives for staffs for fulfilling duties or for increasing sales volume, this way malpractice can be stopped and the amount of revenue collection can be made effectively.
- d) Employee size should be rational for every organization. Over-staffing is a problem in BR. In many countries, experience has shown that fair and equitable treatment of adverse effects on labor is absolutely crucial to the successful completion of a railway restructuring effort.
- e) A profit driven pricing objectives or policy has to be formulated aimed at profit maximization, to recover capital costs, losses or expenditures.
- f) De-politicization and Commercialization is desirable in order to create a stable and credible basis for the commercial operation which will help BR be capable to retain /reinvest surplus funds.
4. Discounts may be provided for: ticket bulk purchases (e.g. weekly, monthly, yearly tickets); off-peak travel (time of day or seasonal); group travel and tours; discriminatory pricing may be provided for student/old aged passengers. BR must ensure quality, availability, safety, comfort and speedy services to the customers who are paying prices for those. BR should be able to convince them that, what they are paying to get the desired service is right.
5. The route network should be modified to connect more commercial cities and to reduce distance between destinations which will reduce running time and can provide door to door service for the customers.
6. In the wider sense, "place" means channels of distribution for the product. Outside of the railway organization itself, the most effective channels of distribution for the railway "product" are likely to be travel agents in the case of rail passenger services and freight forwarders, in the case of rail freight services. The main advantage of using external channels of distribution is that business volume can be maximized through a relatively small number of direct customers, who act as wholesalers selling space on trains to a much larger group of final consumers, accepting the credit and business risk and arranging storage and feeder transport (to/from railheads), where required. By directing a greater proportion of their business through such "wholesalers", railway managements can often achieve significant reductions in their operating costs, with commensurate improvements in the overall corporate financial result.

staffs. If it is done, people will be self motivated to be more efficient and will try their best to use their potential at most.

10. The Staffs of BR should be provided training on regular basis which will help them to be upgraded to perform their duties more efficiently. The staffs of BR have less customer awareness. What is required, therefore, is total customer awareness from the very top to the lowest levels of staffs in the railway organization. Inevitably, this in turn will require that a customer awareness culture be installed throughout the railway organization by its senior management, who in most cases must first make the mental transition themselves, or be prepared to be swept by personnel who already have.

#### Recommendations Against The Problems Identified From Secondary Data:

1 (a) Bangladesh Railway cannot serve the country in full swing, as it was not designed to serve this present geographic territory. Due to truncation from the main railway system, there are a numbers of missing links in different sections of the present railway network. For proper utilization a number of links should be constructed. Besides, due to lack of proper maintenance for a long time, BR has become paralyzed. For this reason, urgent action program should be taken for the rehabilitation of branch lines and modernization of signaling & interlocking systems of different stations to make BR more efficient and functioning.

1 (b) The railway link over the Bangabandhu Jamuna Bridge connecting the East and West zones through the construction of 99 km new dual gauge line and rehabilitation and conversion of 245 km Broad Gauge line from Jamtoil to Parbatipur to Dual Gauge has eased out these operational problems considerably. Further improvement will be achieved after completion of the following on going/ proposed work, viz. 9a) railway link between western side of Jamuna Bridge to Bogra, (b) railway link between eastern side of Jamuna Bridge to Tarakandi. Recently, Dual Gauge (DG) has been constructed in some important sections to ease the problems.

Towards rationalization of gauges in Bangladesh, the on going program of dualization from Parbatipur to Dhaka, should be extended up to Chittagong, to facilitate regional integration,

The present railway infrastructure should be changed to modernize BR. Most of the route networks are single line based, which reduces traffic density and increase running time. BR has to introduce double line at main route network to increase traffic density and reduce running time. Modern color light signaling system should also be introduced in all stations. New locomotives, coaches and wagons should also be provided to match the growing demands. If possible electric locomotives should be introduced to be economical, speedy and convenient transport.

BR is also suffering from lack of investment for proper maintenance of tracks. The span of service life of maximum railway locomotives, carriages, vehicles, tracks, bridges, workshops etc. have already been expired. Sufficient funds have not been allocated for their maintenance and smooth operation for a long time. Thus BR was forced to face the uneven competition with other modes of transport. Recently, derailment has become very common. This has adverse impact on efficiency and reliability of services. Improved services should be ensured by aggressive development and rehabilitation of existing assets. Government has to patronize BR to reduce its operating bottlenecks and help to build its glorious image. As a huge financial involvement is required to increase the overall efficiency of BR, donor agencies should be invited to invest.

Action plan concerning legal, regulatory and institutional measures to achieve the policy objectives of sustainable transport are to be enforced by the government through legislative means.

4. Railway's operational, managerial, Political or Bureaucratic and Financial problems can be removed significantly if private sector participation or involvement in Railway can be ensured

Private sector participation should be allowed. Many railway activities traditionally reserved for monolithic public railways can be more effectively performed by the private sector. In practice, it is possible to identify a range of different institutional arrangements to facilitate private participation in railway activities

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(d) Provision of Leasing from the Private Sector can be allowed. In many countries, a private company, often specialized in leasing, buys a piece of equipment and leases it to the railway. Such opportunities are particularly favorable for specialized or limited use equipment. Indian Railways created a subsidiary, the Indian Railways Finance Corp., which issued bonds to private individuals and entities, to buy equipment, and lease it to the railway.

(e) Concessions are a form of lease in which the contractor agrees to make certain fixed investments and retains the use of the assets for a longer contract period. In some countries, concessions of up to 30 years have been granted to operators, who have responsibility for all maintenance and investment. Concessions often involve bidding for the lowest subsidy on operations and investment.

(f) Joint Ventures can be made. Typically joint ventures involve private partner companies contributing to the development capital, planning, and management expertise in the development of land or other real estate owned by a railway. British Rail created a Property Board to develop station space in concert with the private sector.

(g) Private Ownership can be allowed. A few examples can be found of private ownership in railways (which may include some public participation, as long as it is not a controlling interest). The most extreme examples are to be found in the Sweden and United Kingdom where the right to provide services have been franchised to privately owned and operated train operators. Indeed in the United Kingdom for a time the network infrastructure was fully privatized. Examples can also be found of privately owned service publicly owned railways, for example, food catering on Indian Railways. In Poland, various subsidiaries of the railways, such as manufacturing and repairs, are being transformed into private, joint stock, or independent state owned enterprises.

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## Conclusion

The Railway of this area is inherited from British India started declining day by day and Bangladesh Railway started losing its glorious past as a result of the monopoly. Bangladesh Railway inherited a number of structural and physical weaknesses as a part of its legacy since it was not specially designed and constructed to serve Bangladesh. Due to truncation from the main system, BR is handicapped to serve the country effectively and efficaciously without proper reorientation and development. Now, more than ever before in the long history, BR is facing major threats to its long term survival: The progressive withdrawal of the Government funding which was necessary in the past to sustain Railway infrastructure and services, and the relentless increasing competition from other transport modes, especially from road transport which has been assisted by different factors are the major threats. The first of these threats, the withdrawal of Government funding assistance, must and should be combated with more effective lobbying of Government and Railway Managements. The second threat, however, can partly be countered by more effective lobbying. Competition from the road transport cannot be expected to reduce in intensity for the foreseeable future for its greater flexibility and will only be effectively counteracted if rail can offer a standard service which at the same time satisfies the needs of customers and is superior to the offers from its competitors. Clearly this provides rail with a substantial challenge. It requires a major change in the outlook of railway managements and in the culture of railway organization. Henceforth, the activities of Railway managements will have to be directed at identifying, understanding and responding to the needs of their existing and potential customers; identifying and understanding the cost causation and profit potential associated with the individual traffics or market segments; and bringing about the organizational change which will ensure that railway satisfies new commercial goals. These

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## APPENDIX -2

QUESTIONNAIRE DESIGN TO KNOW THE OPINIONS OF THE CUSTOMERS (RESPONDENTS) ABOUT SERVICE MARKETING OF BANGLADESH RAILWAY:

NB: We draw your kind attention to inform you that the study aims at highlighting the conditions of service marketing of Bangladesh Railway. We expect your valuable opinions and suggestions. We assure you that the secrecy of your opinion will be kept. Your valuable information will be used as the primary data of an M. Phil program. There is given some statements having alternate five scale supports. You are highly requested to read out the questions carefully and put a tick mark within the box as you think as your own opinion. The five scale supports as follows:

- I) Unwilling to answer
- II) Low support
- III) Support
- IV) High Support
- V) Very High support

### RESEARCH TITLE

Service Marketing in Bangladesh: A Case Study of Bangladesh Railway.

### PART ONE: PROFESSIONAL INFORMATION

#### FOR THE CUSTOMERS (RESPONDENTS)

- 1) Name of the Respondent:
  - 2) Occupation:
  - 3) Name of the traveled Train:
  - 4) Destination:
  - 5) Present Address:
-



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PART TWO: QUESTIONNAIRE -1

(To be used by the respondents)

A. PRODUCT (RAILWAY SERVICE)

1. The existing Service structure of Bangladesh Railway is weak in proportion to the demand of age.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

2. In order to achieve the expected goal of Bangladesh Railway it is needed to change the overall service structure of the organization.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

3. The standard of customer care is being highly hampered due to lack of service structure.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

4. The overall existing service structure of Bangladesh Railway is dissatisfactory for the passengers.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

5. It is quite possible to overcome the challenges of Bangladesh Railway through the execution of establishment of a good service structure.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

6. Bangladesh Railway is failed to achieve its expected goals as it is directed with an unsuitable service structure.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

7. Punctuality of trains is not impressive.

(i) Unwilling to answer (ii) Low support (iii) Support (iv) High support (v) Very high support

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2. Good channels of distribution (Place) will play better role to run the organization well.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

3. Channels of distribution (Place) is not customer oriented.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

4. The existing channels of distribution (Place) is not appropriate for the present situation.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

5. The present channels of distribution (Place) should be changed.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

6. The organization will be more benefited if the present distribution channel is changed.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

7. The present distribution channel (place) fails to achieve optimum levels of customer attraction.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

#### D. PROMOTION

1. The existing promotional policy is inappropriate for the present situation.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

2. Advertising program is necessary.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

3. The Salesmanship is not available and inefficient.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

4. The present promotional policy is not customer oriented.

(i) Unwilling to answer (ii)Low support (iii)Support (iv)High support (v)Very high support

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QUESTIONNAIRE -2

## PRODUCT (RAILWAY SERVICE) RELATED QUESTIONS:

1. Is the service of Bangladesh Railway able to satisfy you and capable of accomplishing your expectation?

- (i) YES (ii) NO

2. Is Bangladesh Railway giving you better service than other transportation?

- (i) YES (ii) NO

3. Do you think that Bangladesh Railway has enough equipment and manpower to give your desired service?

- (i) YES (ii) NO

4. Is it possible to formulate a fundamental development of Bangladesh Railway without constructing its infrastructural change, modification and enlargement?

- (i) YES (ii) NO

## PRICE RELATED QUESTIONS:

5. Are you happy paying the price for that standard of service you are getting from Bangladesh Railway?

- (i) YES (ii) NO

6. Are you getting proper customer care for the price you are paying?

- (i) YES (ii) NO

7. Do you see any advancement of Bangladesh Railway service with the present pricing structure?

- (i) YES (ii) NO

8. Is the current pricing structure of Bangladesh Railway low?

- (i) YES (ii) NO
-

PEOPLE (STAFFS) RELATED QUESTIONS:

17. Is the manpower structure of BR is huge enough to ensure customer care?

- (i) YES (ii) NO

18. Do you think that the existing railway executives and employees are performing their duties and responsibilities with sound ~~co~~ordination?

- (i) YES (ii) NO

19. Are the existing appointed officers and employees of BR performing their relevant professional duties proficiently as well as with accountability?

- (i) YES (ii) NO

20. Are the Officers and ~~sub~~ordinates of BR capable enough ~~of~~ playing effective role in providing their service to satisfy you more?

- (i) YES (ii) NO
-







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N)cÖ†Yv`bv

1) Pjgvb cÖ†Yv`bv bxwZ eZ©gvlm1g†ZcmY©\_bq|

K) DĚi `v†b B"QyK ~~LB~~ Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

2) cÖ†Yv`bv Kg©††eFMÖAZ"vek"Kxq|

K) DĚi `v†b B"QyK ~~LB~~ Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

3) F®Z=ÌYEZ8L ZHØT JgEYIYgHL \$IYH , \$CŽ=Y LgTg4\_

K) DĚi `v†b B"QyK ~~LB~~ Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

4) eZ©gvlb cÖ†Yv`bv bxwZ hvÍxM††q|Rb" Dchy

K) DĚi `v†b B"QyK ~~LB~~ Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

5) Pjgvb cÖ†Yv`bv bxwZi cwieZ©b Kiv cÖ†qvRb|

K) DĚi `v†b B"QyK ~~LB~~ Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

6) bZzb cÖ†Yv`bv bxwZ cÖwZôvbwU†K Av†iv jvfRbK K†i Zz††e|

K) DĚi `v†b B"QyK ~~LB~~) Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

7) bZzb cÖ†Yv`bv bxwZ hvÍxmvaviY†K Avil AvK...ó Ki†Z mnvqK n††e|

K) DĚi `v†b B"QyK ~~LB~~ Kg mg\_©b K~~M~~) mg\_©b K~~M~~) †ekx mg\_©b K~~Q~~Lye †ekx mg\_©b Kwi

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wØZxq AsÖkœgZjvK) cY" (tjltq mvwf©m)

K) evsjv`k tjltqimvwf©m wK Avbvw`v Ges AvKv•Lv c~itY m¶g?

- 1) nu"v                      2) bv

L) evsjv`k tjltq Ab"vb" thvMvthvM gva"tgi tP†q A†c¶vK...Z DbœZi tmev cÖ`vb K†q

- 1) nu"v                      2) bv

M) Avcwb wK g†b K†ib, Kv•LZ tmev cÖ`v†bi Rb" evsjv`k tjltqi cÖ†qvRbxq t†vKej I m  
itq†Q?

- 1) nu"v                      2) bv

N) evsjv`k tjltqiAeKvVv†gvMZ cwieZ©b, cwigvR©b I cwiea©b Qvov wK GKwU t†gŠwjK  
m¶œe?

- 1) nu"v                      2) bv

L) g~j" (fvov)

K) evsjv`k tjltqi tmevi gvb Abyhvqx Avcbv†K th A\_© cÖ`vb K†Z n†"Q, Zv†Z Avcwb wK

- 1) nu"v                      2) bv

L) cÖ†`q A\_© Abyhvqx Avcbv†K tmev cv†"Qb?

- 1) nu"v                      2) bv

M)eZ©gvb g~j" KvVv†gv Ae"vnZ t†L evsjv`k tjltqi t†Kvb DbœwZ t`L†Z cvb wK?

- 1) nu"v                      2) bv

N)evsjv`k tjltqi eZ©gvb g~j" KvVv†gv wK wbgœ`†ii?

- 1) nu"v                      2) bv

N) Kg©evwnbx

K) evsjv`k tijl†qi †jvKefKvVv†gk hvîx†mev cÖ`vb wbwðZKi†Yi Rb` h†\_ó?

- 1) nu`v
- 2) bv

L) evsjv`k tijl†qi eZ©gvb wbe©vnx Awdmvi I Kg©x†`i `vwqZ; cvj†b †Kvb mgš^qnxbZv Av. g†b K†itKw

- 1) nu`v
- 2) bv

M) evsjv`k tijl†q†Z wbe©gvb Awdmvi I Kg©xM†Yi `vwqZ; cvj†bi †††† `†Zv I Review`wnZv Afve i†q†Q wK?

- 1) nu`v
- 2) bv

N) †mev †Öv`†† Avcbv†K Avil mš`wó cÖ`v†b evsjv`k tijl†qi Awdmvi I Zv†`i Aaxb`Í Kg©PvixMY ZÖ††vR†w†Kv†vBb`h†\_dchy&³ wK bv?

- 1) nu`v
- 2) bv































































































































