

A COMPOSITE ABC- EVA METHOD A DECISION MAKING TOOL FOR MANUFACTURERS

Mohammad Khalil Ahmed*, Pradeep Nagori**

Abstract

This article presents a cost and performance evaluation system that merges the Activity-Based Costing (ABC) method with the Economic Value Added value-based financial performance measure. This projected ABC-EVA method is a mechanized tool that helps management to control cost and capital successfully. It enables business leaders to build shareholder value through improvement in the cost structure. The cost of activities under the ABC-and-EVA system comprises the rate of the consumption of resources and capital demand. The sequences for execution of the proposed system are illustrated. Conventional ABC system and an ABC-and-EVA system are differentiated by probing the cost for each activity at the first stage. Thereafter a fine-tuning to the income statement and the balance sheet is shown using the EVA approach. This information is then distorted into transparent capital charges using a newly devised method called Activity-Capital Dependence (ACD) Analysis. Alterations to the end-product costs as a result of summing up these capital charges to the activity costs are shown.

Keywords: Activity-Based Costing, Economic Value Added, Stakeholder

1. Introduction

The primary objective of almost all the private companies is to earn profit. If a concern is not capable of generating sufficient fiscal profit over time, its survival is doubtful. Furthermore, companies making little or no profit are not very attractive for potential investors looking for returns. Management interested in investors' satisfaction needs to control cost and economic value while maintaining at least some minimum profitability level. There is a need to move towards real improvement and value creation as opposed to shrewd manipulation

of financial data for short-term gains. Activity-Based Costing (ABC), a costing system that has recently gained popularity is based on a simple idea: in an enterprise, overhead (or operating) expenses are generated by a number of activities needed to successfully perform manufacturing and business processes. Since activities consume overhead resources, and products (or projects or processes) demand activities, the product cost is related to the cost of resources (Cooper). By design, ABC provides information about the origin of the cost and reasonably accurate cost data (Cooper and Kaplan, 1988). ABC has been implemented in various companies,

*Associate Professor HOD, Commerce in Burhani College of Commerce & Arts, Mumbai, Email: khalila8@gmail.com

**Associate Professor HOD, Accountancy in Rizvi college of Arts, Science & Commerce

and managers familiar with the ABC method were able to control costs more successfully. Costs were kept in order through the elimination of non-value-added activities, process improvement, or outsourcing. Still the most striking cost reductions, however, do not automatically mean an improvement in value creation; frequently the shareholder value remained unchanged or was lowered. This results from the fact that the ABC method, however sufficient in the calculation of operating costs, is inadequate in the handling of full capital costs (Hubbell, 1996a; Hubbell, 1996b). While the depreciation (a part of capital cost) is considered in the ABC computation the interest charges for capital invested in a company are not taken into account.

ABC is a cost accounting concept based on the assumption that products (and/or services) require an organization to accomplish activities and that those activities require an organization to incur costs.

In ABC, systems are designed in such a way that any costs that cannot be attributed directly to a product, flow into the activities that make them indispensable. The cost of each activity then flows to the product(s) that make the activity indispensable based on their respective use of that activity.

The most popular value-based measure today is Economic Value Added, EVA, which has given rise to debate about its ability to accurately measure shareholder value. Proponents of EVA have not acknowledged or discussed the faults of EVA, while lavishing praise on the concept as an indispensable management tool. On the other hand, very little criticism has come about that has dealt with the problems of EVA, and that too has been kept to fairly insignificant details (Mäkeläinen 1998). Fundamental to EVA is that a company's shareholder must earn a rate of return that compensates the risk taken. Equity capital must earn essentially the same as correspondingly risky investments in equity markets.

EVA is a practical refinement of economists' concept of residual income - the value remaining after a

company's stockholders and all the other providers of capital have been compensated. EVA is a performance measure and, when linked to management pay, provides a strong incentive for managers to select and implement value-creating investments.

In the late 1980s Joel Stern and G. Bennett Stewart III of the New York consulting firm Stern Stewart & Co. introduced the Economic Value Added (EVA) performance measure. EVA is based on the idea of economic profit (also known as residual income). A company creates value when a certain investment project covers all operating costs and the cost of capital. EVA does not only consider the most visible type of cost – interest – but also the cost of equity. Only if the rate of return on capital is higher than the cost of capital, value is being created and the demands of capital markets are fulfilled. Using EVA for investment decisions arrives at the same investment decision as using free cash flows. EVA's advantage is that it can be used for periodic performance evaluation and for management compensation, whereas Net Present Value (NPV) applies to the whole period of the investment.

Actually, EVA is the same as Resource Income (RI) that has been in continuation for several decades. The only noteworthy difference between the two lies in the treatment of accounting distortions (Dodd and Chen, 1997). EVA removes present distortion by using up to 164 adjustments to conventional accounting data (Stewart, 1991; Blair, 1997). These distortions are disregarded in the Residual Income computation. Business leaders need a tool to help them control both cost and capital. This article presents an integration of ABC-and-EVA system that can be used to build shareholder value through improvement in cost structure.

Although, the ABC method provides accurate operating product costs, it does not identify which products are economic valued added creators and so contribute to companies' wealth. This drawback can be overcome by applying Economic Value Added (EVA). The adoption of ABC and EVA can represent a considerable change in the managerial thinking and to corporate strategies and business performance.

2. Methodology

The Value-based performance procedures help to determine the least profitability level that a company has to maintain in order to satisfy their existing investors and catch the attention of new one. This least profitability level, or capital charge (CC), can be calculated as follows:

$$CC = C \times CCR \quad (1)$$

In this equation, C denotes the company's capital and CCR refers to the capital cost rate. The CCR is dependent on the existing interest level, the company's business field, the capital structure and the investors' outlook. We can obtain a good estimator for the CCR by adding to the enduring interest rate of government bonds, a premium linked with the investment in the given company (Reimann, 1988; Dodd and Chen, 1996). For example, assume that the interest for a 20 year government bond is 5 percent and the company business is considered steady. In this case, investors may be contented with an extra 5 percent return over the government bond rate return for a CCR of 10 percent. If a company is not capable of showing an economic profit at least as much as the capital charge, shareholder wealth is reduced.

Since organization considers particular investment opportunities in specific projects, products or processes, a rational approach would be to divide the total capital charge among the activities while obtaining cost information. If this distribution of capital charges to activities is done arbitrarily, costs could be distorted, particularly in the case where capital costs are not in proportion to operating costs.

ABC emerged owing to a related deficiency with the arbitrary apportionment of overhead costs to products. Hubbell (1996a; 1996b) proposes blending the ABC method with a value-based performance measure that includes capital costs with ABC system calculated costs. These capital costs, according to Hubbell, may have positive or negative values. On the contrary, the composite ABC-EVA method proposed in this article differentiates two different activity costs: operating cost and capital charge. Operating costs reflect resource

consumption in a company, while capital charges describe the company's capital investment cost. Operating costs and capital charges have only positive values.

Implementation Procedure

The execution steps for the ABC-EVA method are similar to those for a conventional ABC system. The main distinction lies in the determination of the total cost for each activity (Step 4). This will be discussed in greater detail, while remaining steps of the implementation procedure will be discussed in brief.

Step 1: Evaluate the company's financial information

Almost all of the needed financial data can be obtained from the company's income statement and balance sheet.

Step 2: Spot main activities

Then identify the main activities by describing the manufacturing and business processes of the company that consume operating resources or are responsible for capital investments.

Step 3: Fix operating cost for each activity

This has to be done by computing the operating cost for each activity in the same way as would be done for a conventional ABC system. Costs should reflect overhead resource expenditure by each activity.

Step 4: Fix capital charge for each activity using Activity-Capital Dependence Analysis

This sequence does not appear in a conventional ABC calculation. The integrated ABC-and-EVA system computes the capital charge for activities asking capital investments. In order to get this we convert figures on the company's balance sheet into capital costs. These costs are then added up to the cost for each activity computed earlier by the ABC system.

Step 5: Select cost drivers

This step is similar for a conventional ABC system. Costs are traced from activities to product by cost drivers, which trace their consumption or use to products.

Consequently, operating cost drivers can track operating costs and capital cost drivers can track capital charges to the products.

Step 6: Compute product cost

Both the costs are then assigned to the products.

3. Application Example

In this segment, the proposed composite ABC-and-EVA method is worked out with a small manufacturing company, producing three products. While illustrating adjustments have been ignored.

Some experts suggest that some items in the company’s income statement, such as R&D costs, marketing costs, and restructuring charges, should be treated as capital investment, rather than as expenses. Moreover, equity equivalents, such as deferred income tax reserve, inventory valuation reserve, and depreciated items that represent economic book value, should be added to the company’s capital (Stewart, 1991). While this removal of accounting and financing distortions will increase system accuracy, some experts dispute that this marginal gain in accuracy does not justify the additional effort (Dodd and Chen, 1996). In any event, neither inclusion nor removal of the accounting distortions

changes the proposed procedure.

To illustrate calculation was done for a one year time period. Adjustments to the CCR can easily be made for different time periods. For example, a rate of 2.5 percent can be used for a 3 month period to approximate the annual rate of 10 percent. And finally, this example makes a simplifying hypothesis that the data on the balance sheet remains unchanged throughout the year. A preferred method is to use a yearly average value for each category on the balance sheet.

In Step 1 the company’s income statement and balance sheet were obtained. The same has been shown in Exhibits 1 and 2.

Exhibit 1. Income Statement

Particulars	Rs.(‘000)
Net Sales	3,705
Cost of Goods Sold	-1,575
SG&A Expenses	-675
Depreciation	-375
Other Operating Expenses	-150
Interest	-180
Profit before Tax (PBT)	750
Income Tax (40%)	-300
Profit after Tax (PAT)	450

Exhibit 2. Balance Sheet

Liabilities	Rs.(‘000)	Rs.(000)	Assets and properties	Rs(‘000)	Rs.(‘000)
<u>Owners Equity:</u>			<u>Fixed Assets</u>		
Capital	150		Property, Land	1,500	
Retained Earnings	600		Equipment	300	
Reserves	450		Others Long-term Assets	150	
Net worth		1200	Total Fixed Assets		1950
<u>Long term liabilities:</u>			<u>Current Assets:</u>		
Debenture		1200	Cash	75	
<u>Current Liabilities:</u>			Receivable	900	
Accounts Payable	450		Inventory	450	
Accrued Expenses	150		Others Current Assets	225	
Short-term Debt	600		Total Current Assets		1650
Current Liabilities		1200			
Total		3600			3600

In Step 2 the main activities are identified as shown below:

Exhibit 3: Activity Category and Activity:

Activity Categories	Activities
Customer Management	Contact Customers, Prepare Quotes, Invoice and Collect Money
Production Planning and Preparation.	Perform Engineering Work, Plan Production,
Production Management	Purchase Materials, Receive and Handle Materials , Manage Production
Product Distribution	Store Final Product, Ship Final Product
Enterprise Management	Develop Employees , Manage Business

Operating costs are calculated for each activity in Step 3. To determine the operating cost, the company’s income statement was analyzed to discover operating expenses. This calculation has been shown in Exhibit 4. In this example, the cost of goods sold represents direct expenses, such as materials, supplies, and direct labour that can be attributed directly to the products.

Exhibit 4. Operating Cost Calculation

Particulars	Rs.(‘000)
SG&A Expenses	675
Depreciation	375
Other Operating Expenses	150
Total Operating Cost	1200

On the basis of data given in the financial statement the company’s total operating cost was assumed to be Rs. 12,00,000 and was identified to the activities using a conventional ABC approach. Exhibit 5 shows the operational cost of each activity. Point to be noted that the sum of the cost of all activities is equal to the total operating cost.

Exhibit 5. Operating Activity Cost

Activities	Operating Cost (Rs.’000)
Contact Customers	135
Prepare Quotes	120
Invoice and Collect Money	22.5
Perform Engineering Work	112.5
Plan Production	42
Purchase Materials	70.5
Receive and Handle Materials	150
Manage Production	225
Store Final Product	64.5
Ship Final Product	168
Develop Employees	25.5
Manage Business	64.5
Total Operating Cost	1200

The next step is to determine the capital charge for each activity using Activity-Capital Dependence Analysis. Since the company is in business to make money, the owners expect a reasonable rate of return, i.e., *CCR*, for their investment. Investors’ anticipation, management’s financial objectives and the company’s capital structure are factors used to establish the *CCR*. Fixing a company’s desired *CCR* is very vital. In order

to illustrate, *CCR* is taken to be 10 percent. Next, the company’s capital, *C*, has to be identified from the balance sheet. In this perspective, capital includes both equity and debt. This approach defines capital as all money invested in a company regardless of the source (equity – debt).

Exhibit 6 shows the company’s *C* calculation. The total capital is equal to Rs. 3,000,000.

Exhibit 6: Company’s Capital

Particulars	(Rs. In ‘000)
Total Assets	3,600
Accounts Payable	-450
Accrued Expenses	-150
Capital	3,000

Total capital charges can now be calculated using Equation 1 as follows:

$$CC = C \times CCR = \text{Rs. } 3,000,000 \times 0.10 = \text{Rs. } 300,000$$

Next, total capital charges must be traced to all activities. Each activity that demands capital investment should generate a return that recovers its share of capital costs. The capital consumption rate of each activity determines the cost of the capital charge assigned to it.

The cost of capital can be traced to each activity using the Activity-Capital Dependence (ACD) Analysis. The ACD Analysis is shown in Exhibit 7. The rows in the ACD matrix are activities while the columns are the accounting categories from the balance sheet. To identify the link between capital and activities methodically, a checkmark at the *I, j* entry denotes that activity *I* uses capital from the given capital category *j*. For instance,

the activity receiving and handling materials needs capital investment in stock, other current assets, land, and other current assets. The accounts payable and accrued expenses can be taken as savings in capital requirement, the increase in additional capital can be offset because of the delayed payments in the amount of accounts payable and accrued expenses.

Subsequently, all checkmarks in the Activity Capital Dependence Analysis are substituted with values between 0 and 1 representing the percentage of capital needed for each activity. For instance, it was determined that only two activities, perform engineering work and manage production, require investments in equipment. Furthermore, it was determined that the activity perform engineering work is responsible for 40 percent of the investments in the company’s equipment and the activity manage production for the remaining 60 percent. On the basis of this data, the resultant checkmarks were substituted by 0.40 and 0.60 respectively, as shown in Exhibit 8.

Exhibit 7. Activity-Capital Dependence (ACD) Analysis

Activity	Cash	Receivable	Inventory	Other	Property, Land	Equipment	Others	Accounts Payable	Accrued Exp
Contact customer	√				√				
Prepare Quotes					√				
Invoice and Collect Money		√			√				
Perform Engineering Work					√	√			
Plan Production					√				
Purchase Materials	√				√				
Receive and Handle Materials			√	√	√		√	√	√
Manage Production			√	√	√	√	√	√	√
Store Final products			√	√	√		√		
Ship Final Products					√				
Develop employees					√				
Manage Business	√				√				

Exhibit 8: Activity-Capital Dependence (ACD), Analysis in Thousands of Rupees.

Activity	Cash	Receivable	Inventory	Other	Property, Land	Equipment	Others	Accounts Payable	Accrued Expenses	Activity Capital Charge
Contact Customer	0.20				0.01					3
Prepare Quotes					0.01					1.5
Invoice and Collect Money		1.00			0.01					91.5
Perform Engineering Work					0.01	0.40				13.5
Plan Production					0.01					1.5
Purchase Materials	0.20				0.01					3
Receive and Handle Materials			0.60	0.60	0.05		0.20	0.80	0.80	3
Manage Production			0.20	0.20	0.80	0.60	0.60	0.20	0.20	148.5
Store Final products			0.20	0.20	0.05		0.20			24
Ship Final Products					0.01					1.5
Develop employees					0.01					1.5
Manage Business	0.60				0.02					7.5
Total Capital charges	7.5	90	45	22.5	150	30	15	-45	-15	300

The total capital charges (the last row in Exhibit 8) were calculated by multiplying the particular balance sheet item by *CCR*. For example, the charge of Rs.7500 for cash was found out by multiplying the cash entry in the balance sheet of 75,000 by a *CCR* of 10 percent. Add all row entries and then multiply the same with their corresponding *CC* to get capital cost for each activity.

In the illustration, the capital charge for the row “manage business” was obtained by multiplying the *CC* for cash, 7.5, by 0.60 plus the *CC* for land and property,

100, times 0.02 for a total of 7.5. To obtain the total cost for each activity the operating cost and capital charge must be summed. Exhibit 9 shows activities with operating costs and capital charges. Some of the activities became significantly more expensive. Then choose the Cost drivers. For example, the operating cost driver for the activity receive and handle materials was the number of receipts. A suitable capital cost driver for this activity may be a mixture of the Rupee value of received material and the time materials spend waiting to be processed. Thereafter Product costs are calculated as the next step.

Exhibit 9. Operating Costs and Capital Charges.

Activities	Operating Cost (Rs'000)	Capital Cost (Rs'000)	Total Cost (Rs'000)
Contact Customers	135	3	138
Prepare Quotes	75	1.5	76.5
Invoice and Collect Money	67.5	91.5	159
Perform Engineering Work	112.5	13.5	126
Plan Production	42	1.5	43.5
Purchase Materials	70.5	3	73.5
Receive & Handle Materials	150	3	153
Manage Production	225	148.5	373.5
Store Final Product	64.5	24	88.5
Ship Final Product	168	1.5	169.5
Develop Employees	25.5	1.5	27
Manage Business	64.5	7.5	72
Total	1200	300	1,500

Exhibit 10. Product cost calculation using ABC system

Particulars	ABC			Total (Rs.'000)
	A(Rs.'000)	B (Rs.'000)	C(Rs.'000)	
Revenues	1,500	1200	1005	3,705
Direct Costs	750	450	375	1,575
Operating Costs	600	300	300	1200
Interest	60	60	60	180
Profit before Tax	90	390	270	750
Tax (40 Percent)	36	156	108	300
Profit after Tax	54	234	162	450

Exhibit 11. Product cost calculation using ABC-and-EVA system

Product	ABC AND EVA SYSTEM			
	A(Rs.'000)	B(Rs.'000)	C(Rs.'000)	Total(Rs.'000)
Revenues	1,500	1200	1005	3,705
Direct Costs	750	450	375	1,575
Operating Costs	600	300	300	1200
Operating Income	150	450	330	930
Tax	48	145.5	106.5	300
Net Operating Profit After Tax	102	304.5	223.5	630
Capital Charge	15	57	228	300
Economic Profit	87	247.5	-4.5	330

4. Results and Discussions:

Although the ABC method provides correct operating product/territory cost, it fails to locate which products are EVA creators and thus add to shareholders' wealth. Initially it looks adding capital charges in product costs increase their cost significantly in some cases but at the same time the managers get a power tool as well. Exhibit 10 shows that if company uses the product costs obtained under ABC method, they will conclude that Product A is much less lucrative than Products B and C, but the same obtained under proposed method, company can observe the products which are creating value. In the above example, Product A, which created only minor value using the ABC method, earns higher economic profit for its limited use of capital. In contrast, Product C, while utilizing a small part of the company's operating cost, stresses high capital investments, resulting in a fairly high capital cost. In order to bring improvement in performance, only precise cost information is not sufficient, management has to take action once cost data is obtained from the proposed method. For example, some likely strategies regarding Product C are:

- Selling price to be hiked.

- Reduce its capital demand
- Trim down the operating costs
- Enhance the output with only minimal additional capital investments, keeping operational cost in order.
- Search for a substitute product having a better prospective to be a value creator.
- Drop it.

Further, management may need to reconsider its approach toward Product A, which seems to be more attractive under the ABC - EVA method. For example, management may desire to boost marketing efforts for Product A.

5. Conclusions:

A Composite ABC-and-EVA method will help managers in companies understand that the capital invested in their company is a valuable resource that has to be used effectively. The proposed capital charge added to activities and identified to the products attempts to explain the capital use and enables management understand the capital cost connected with the manufacturing process. Company can get a vague idea

of *profitability* if it looks only at profit after tax in the conventional sense as opposed to real or economic profit as computed under the ABC-EVA method. The application of ABC would lead to more accurate cost data and how the invested funds are allocated to products while EVA can provide a valuable measure of wealth creation and can be used to help align managerial decision making with company preferences. However, ABC and EVA must be used in conjunction so that they can provide a complete picture of performance.

Once it is implemented, the method can be used as a tool to protect business leaders from making short-term decisions based on profit alone that may obliterate economic value over the long-term. The proposed integrated system by itself will not make improvements in the business process, but rather will provide management with data that can direct improvement efforts in which management should be committed to make these necessary improvement steps.

References:

- Alistair, Blair (1997), *EVA Fever*, Management Today, 42-45.
- Based Cost System? *Journal of Cost Management*, (fall), Vol.7 (4), 41-58.
- G. Bennett., Stewart (1991), *the Quest for Value: A Guide for Senior Managers*, Harper Business, New York.
- James L., Dodd and Chen, Shimin (1996), "EVA: A New Panacea?" *B&E Review*, Vol.42, (July-September), 26-28.
- James L., Dodd and Chen, Shimin (1997), Economic Value Added (EVA), *Arkansas Business and Economic Review*, (Winter), 1-8.
- Mäkeläinen, Esa. 1998. "Economic Value Added as a management tool" Helsinki School of Economics, Finland. February 9, 1-34.
- Riemann, Bernard (1988). C. Managing for the Shareholder: An Overview of Value-Based Planning, *Planning Review* (January-February), 10-22.
- Robin, Cooper (1988), The Rise of Activity-Based Costing – Part One: What is an Activity-Based Cost System? *Journal of Cost Management* (Summer), Vol.7 (3), 45-54.
- Robin, Cooper (1989a), The Rise of Activity-Based Costing – Part Three: How Many Cost Drivers Do You Need, and How Do You Select Them? *Journal of Cost Management*, (winter), Vol.7 (4), 34-46.
- Robin, Cooper (1988b), The Rise of Activity-Based Costing – Part Two: When Do I Need an Activity-
- William W., Hubbell, Hubbell (1996), Combining Economic Value Added and Activities-Based Management, *Journal of Cost Management* (Spring), 18-29.
- William W., Hubbell (1996b), A Case Study in Economic Value Added and Activities-Based Management, *Journal of Cost Management* (Summer), 20-29.

Comparative study of SIMSREE versus other B-schools in India

Farooque Tajuddin Peerzada*, Ravindra Pandurang Nannaware**

Maqsood Ahmed Khan*** and Ansari Mohammed Nasir****

Abstract

The objective of this research paper is to compare the B-schools on PAN India level, on the basis of the various crucial parameters which forms the base of any premier institute. The research is done based on the four important factors viz. Course Structure, Student's participation in Inter college competition, Faculty and College Administration. The core objective is comparison of the institutes is to identify the key factors which are in place in the other colleges and which can be imbibed in SIMSREE (Sydenham Institute of Management Studies and Research and Entrepreneurship Education) to take it to another level. Along with the primary data, various B-school comparison magazines were also referred as the secondary data.

Report covers the research objective, research design, data analysis, findings, observation and conclusion with recommendation. It also covers the difficulties and limitations that were encountered while conducting this research.

Some highlighting points:

- 17 B-schools participated in the research and out of target population of 3350 (total intake of these 17 B-schools combined), we received 225 responses which makes the 7% sample population.
- 57 % of sample population agreed that they can design some aspects of the course structure as per the industry needs
- 67 % of the sample population agreed that various software are used in teaching which gives them practical aspects of the subject along with theoretical knowledge.
- 79 % of sample population said the case study approach is being practiced in their respective institutes.
- SIMSREE is one of the institutes where student to faculty ratio is very high (1 teacher for 24 students) which is the area of concern.

*Research Assistant, Sydenham Institute of Management Studies and Research and Entrepreneurship Education, Churchgate, Mumbai -400020 (India), ftpeer@yahoo.com

**Research Assistant, Sydenham Institute of Management Studies and Research and Entrepreneurship Education, Churchgate, Mumbai - 20 (India), rpnnannaware@yahoo.com

***Director, Sydenham Institute of Management Studies and Research and Entrepreneurship Education, Churchgate, Mumbai-400020 (India), maqsoodkhhan@yahoo.com

****Assistant Professor and Course Co-ordinator – B.Sc (IT), K.P.B. Hinduja College of Commerce, New Charni Road, Mumbai -400004 (India), ans.nasir@gmail.com

- 48 % of sample population said they have a dedicated faculty and a student committee to look after the inter B-school competitions.
 - Study shows that 'past competition experience' and 'presentation skills' are the key factors for the success in the inter B-school competitions
 - 94 % of sample population said that their institute is student driven
 - 88 % of sample population confirmed that they have placement officer/faculty in charge for the placements.
 - Study shows that 'quality of teaching' is the most important factor for the students to attend lectures rather than attendance compulsion or association of attendance to subject marks.
 - SIMSREE has the lowest teaching period for the semester (2.5 months) which is another area for concerns and improvement.
-

Introduction

Sydenham Institute of Management Studies and Research and Entrepreneurship Education (SIMSREE) is considered to be in a list of top 50 colleges in India at present. The constant ups and down in the ranking of not only SIMSREE but also in case of other institutes gives rise to curiosity to study internal factors of any B-School. Such analysis can be used to help analyzing the variability and ups and downs in the ranking, subsequent quality of the B-School.

B-Schools are known as sources of highly qualified managers for the country and its growth. Giving rise to new generation leaders is a task of top quality B-Schools across the countries. Such leaders/managers add values to the organizational growth, country's growth. Quality of B-school thus plays important role in the above.

Quality of B-school mainly depends on following factor:

- Quality of Faculty available
- Quality, Intelligence level of students enrolling for the course
- Student's participation in college activities, which give high exposure to student of managing things and multitasking experience at college level itself before hitting the industry floor.
- Student's interaction, participation in inter-college activities
- Help from college administration to the students.

While collecting any information about any organization, employees of the organization are best sources to collect data. Similarly, students of respective B-School are best source of data about that particular B-School. Thus students of colleges made as target population and information collection is carried out.

The analysis following in later stage of this report throws light on some interesting facts of B-Schools like lecture duration, faculty analysis, student's involvement in college activities etc.

We believe that this report can be helpful in suggesting improvisation in important functional areas of SIMSREE.

Research Objectives

This paper aims at analyzing current situation of SIMSREE v/s other B-Schools across Mumbai and some from outside Mumbai.

Main objectives can be summarized as follows:

- To understand the mindset of the student regarding college and administration.
- To understand the student's view regarding the quality of teaching and faculty.
- Number of hours spent on lectures and other college activities, also their willingness to attend lectures.
- To compare participation in Inter-college activities from SIMSREE v/s other colleges.

- Industrial Visits organized (if any).
- Involvement of Admin in the college.
- Involvement of students in college administrative activities.
- Duration of actual Semester/Trimester.

Literature review

The research paper started with the objective to find out the best practices which are carried in the various B-schools across India on the 4 important fronts viz. *Course Structure, Student's participation in Inter college competition, Faculty and College Administration*. The study was conducted to find out key factors under these fronts and find out the recommendations and activities which can be done at SIMSREE which will help to fill the existing gaps and the take the institute to further growth.

After finalizing the research objective, online questionnaire approach was selected. Questionnaire was designed containing the four fronts and questions were formed which will extract the relevant data out of the respondent without much hassle. After approval of the questionnaire, B-schools were identified for the participation. The criterion was to identify the course design and implementations from the students' point of view as how they perceive these institutes. For that matter, institutes from all over the India were selected. Then through personal contacts, this questionnaire was e-mailed to the respondents of these institutes and constant follow up was done as we could track the responses via Google sheet.

After the data collection, actual work started. Data was tabulated and various statistical measures were applied to it which helped us in the analysis part. SPSS tool was used prominently for the analysis part. Inferences was taken based on the responses under various segments and tried to find out the correlation between these parameters.

After the detailed analysis, conclusion and recommendations were found out. This was done on the basis of the common practices done at the B-schools

and responses received from the survey. There were certain limitations and difficulties faced during this research mainly as this analysis does not include responses from the institute faculties and the directors.

Research Methodology

In order to address the research objective, questionnaire approach was taken into consideration. The complete questionnaire was divided into four segments as follows:

- Course Structure
- Student's participation in Inter college competition
- Faculty
- College Administration

Each segments contained several questions which together would be used to gauge the particular aspect and helped in analyzing and comparing on that particular parameter.

Research Design:

It was Descriptive Research design which was followed to conduct the Research

Sample Design:

Convenience sampling was used.
Sample size = 225

Analysis Plan:

Analysis was done with help of mainly SPSS and MS Excel.

The Data was compared for Central Tendency with help of SPSS. SPSS provided detailed analysis of Mean, Mode, and Variance. SPSSs also provided percentage distribution of each and every dataset.

MS Excel was mainly used to create Graphs as SPSS does not provide data labeling facility for the graphs.

Rest of the analysis was done manually on given data with help of provided frequency distribution tables and graphs.

Table 1.

List of the colleges who participated in the survey.

- Chetana Ramprasad Institute of Management and Research
- Indian Institute of Management (IIM) Ahmedabad
- Indian Institute of Management (IIM) Calcutta
- Indian Institute of Management (IIM) Kozhikode
- Indian Institute of Management (IIM) Lucknow
- IMT- Nagpur
- Institute of Management, Nirma University
- Jamnalal Bajaj Institute of Management Studies (JBIMS)
- K.J.Somaiya Institute of Management Studies and Research (KJSIMSR)
- Mumbai Education Trust (MET)
- N.L. Dalmia Institute of Management Studies and Research
- NITIE
- Shah & Anchor Kutchhi Management College
- SIESCOMS
- Sydenham Institute of Management Studies and Research and Entrepreneurship Education (SIMSREE)
- S.PJain Institute of Management and Research (SPJIMR)
- TAPMI

Data Analysis

Simple Tabulation:

Fig no. 1- Institute wise respondents

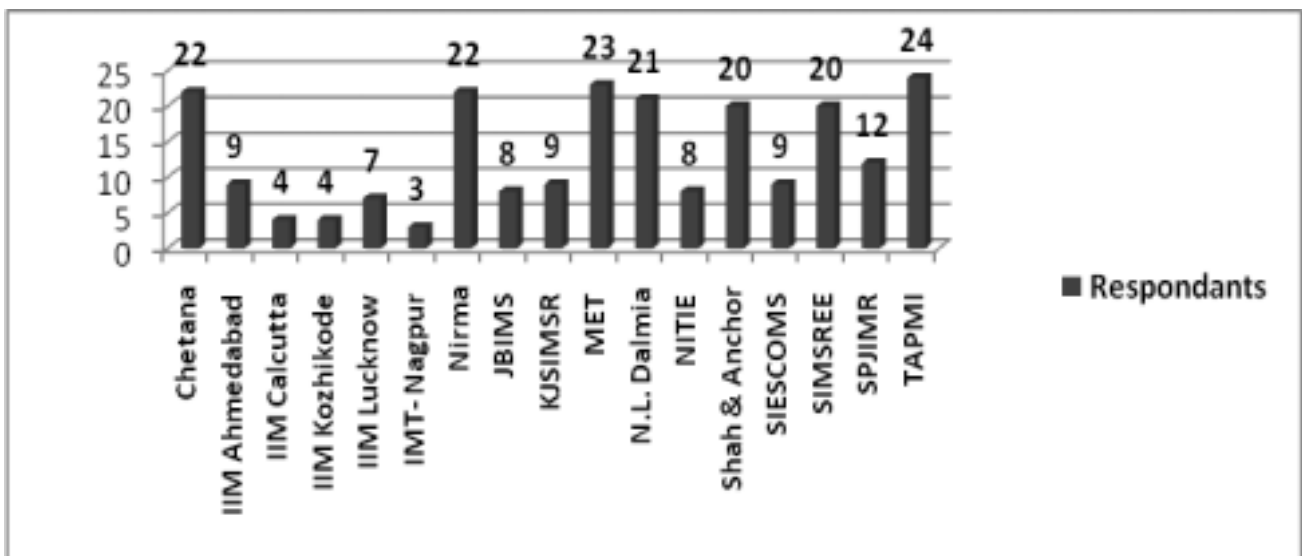


Table 2.

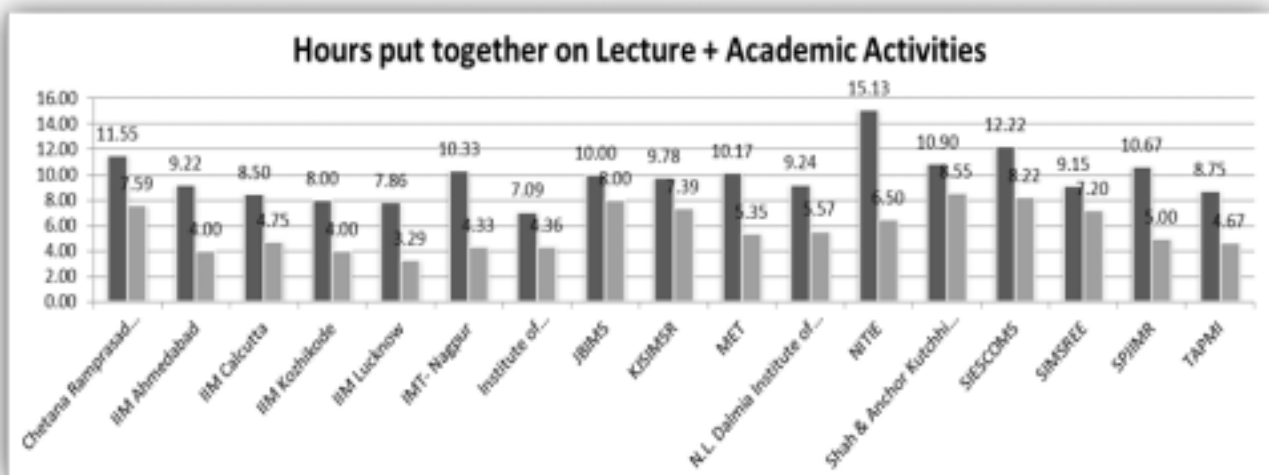
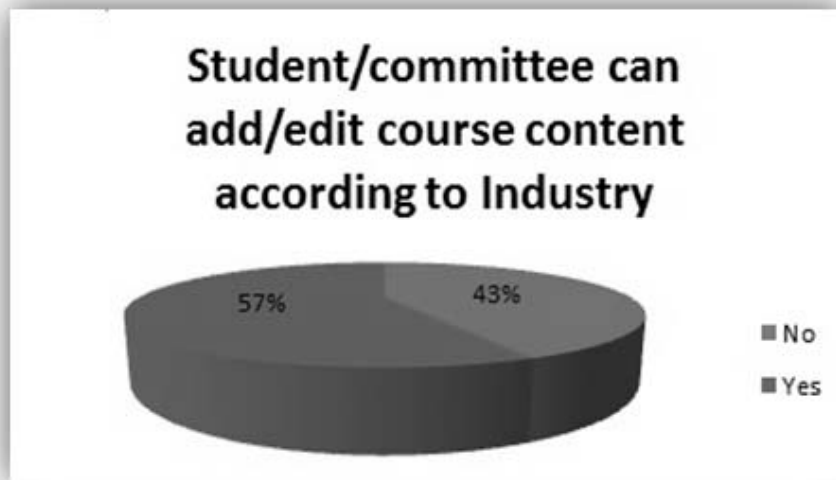
Institute name	Course Pattern	Course Intake	Strength of Class	Average number of subjects per Semester/Trimester
Chetana Ramprasad Institute of Management and Research	Semester	120	60	12
IIM Ahmedabad	Trimester	350	90	9
IIM Calcutta	Trimester	309	95	9
IIM Kozhikode	Trimester	300	60	6
IIM Lucknow	Trimester	420	70	7
IMT- Nagpur	Trimester	300	60	7
Institute of Management, Nirma University	Trimester	180	60	7
JBIMS	Semester	120	60	11
KJSIMSR	Semester	120	60	10
MET	Trimester	120	60	8
N.L. Dalmia Institute of Management Studies and Research	Semester	240	60	12
NITIE	Trimester	230	80	9
Shah & Anchor Kutchhi Management College	Semester	60	60	11
SIESCOMS	Semester	61	61	11
SIMSREE	Semester	60	60	11
SPJIMR	Trimester	180	30	9
TAPMI	Trimester	180	60	8

Segment 1: Course Structure

This is the first segment. Under this, we tried to find out the data on the parameters such as course pattern, industry expectation, academic rating pattern, lecture hours (academic plus nonacademic).

Every course should contain the exercises and learning which will meet the industry expectations and will help students to apply these concepts when they join corporate world. Following are the findings in this category.

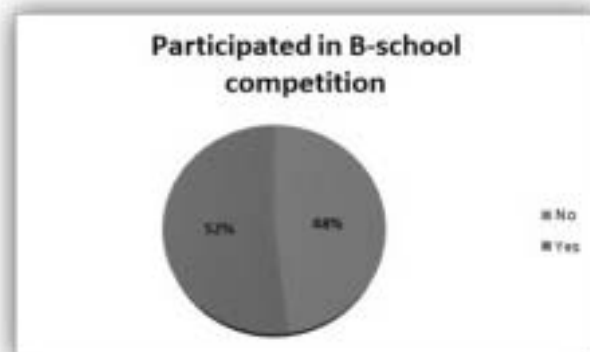


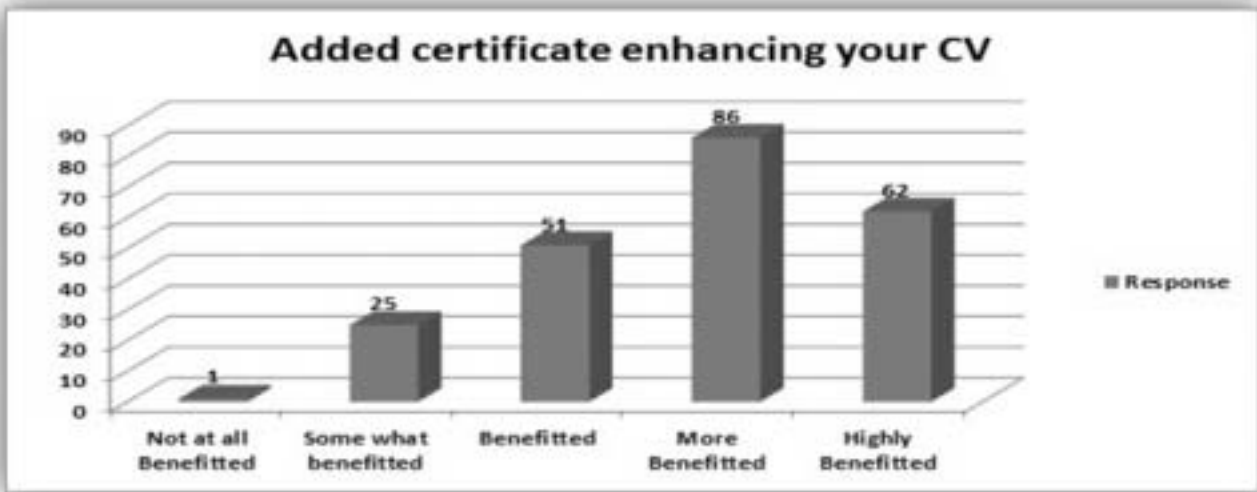


Segment 2: Inter Collegiate Competition

Active participation in various B-school competitions is very important. It not only helps the participants in respect of their personal achievement but also helps the institute getting the recognition and fame.

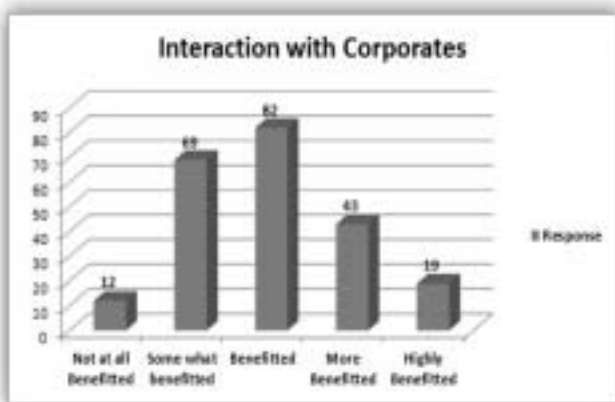
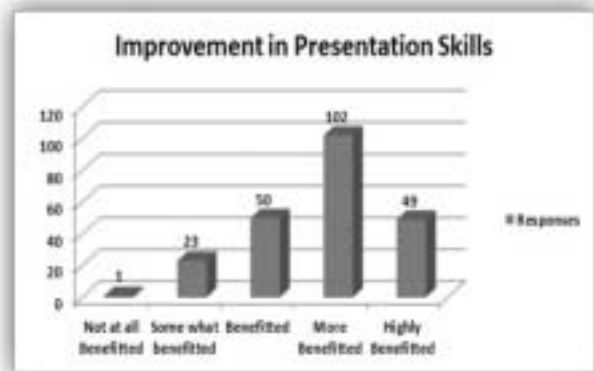
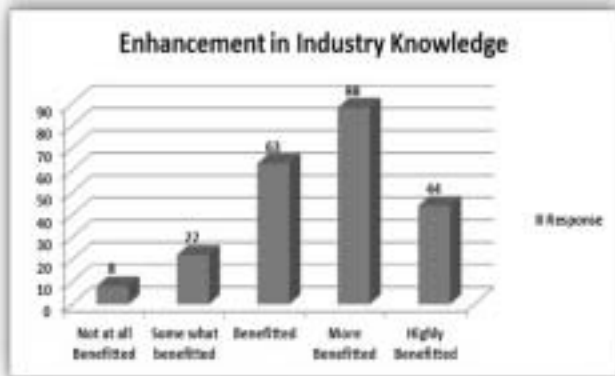
On participation in such competitions, following are the various parameters we asked the respondents and asked them to give their ratings based on its importance.





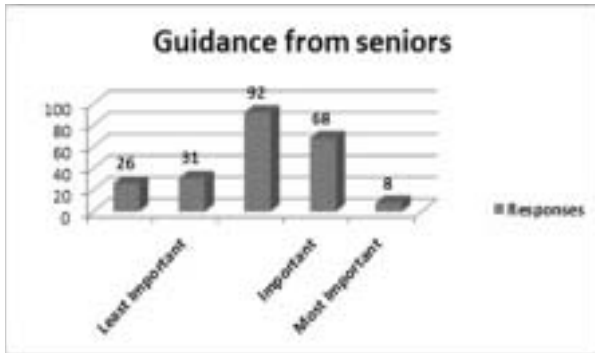
On participation in such competitions, following are the various parameters we asked the respondents and

asked them to give their ratings based on its importance.



Following are the various factors which help in the success in such B-school Competitions. Based on the responses, 'Past experience' and 'Presentation skills' are

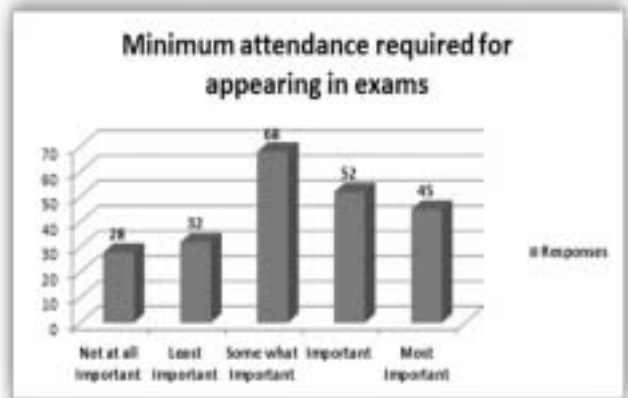
the stand out parameters which helps significantly in the success.



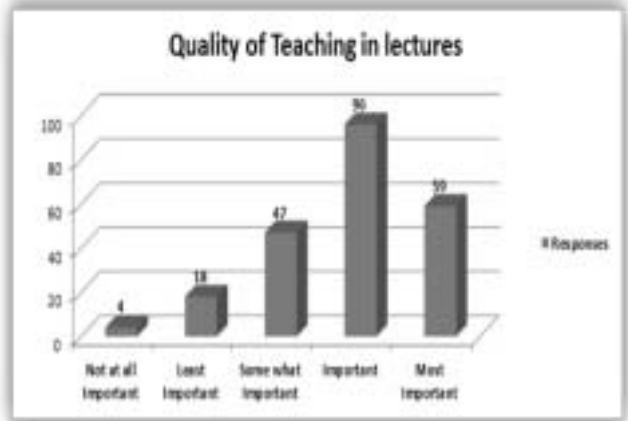
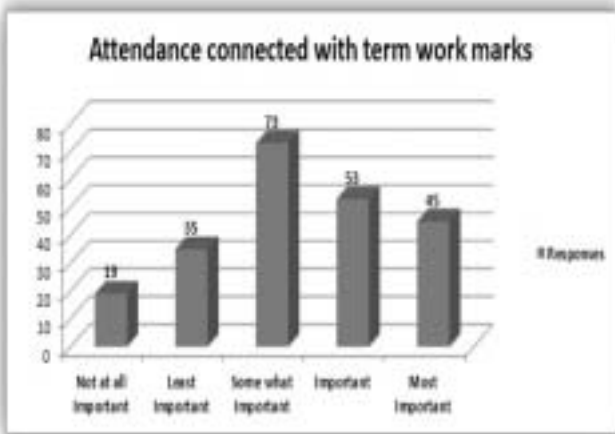
Segment 3: College Administration

College administrations and its processes are very important.

Following graphs shows the findings on the various aspects such as non-teaching staff and placement officer etc.



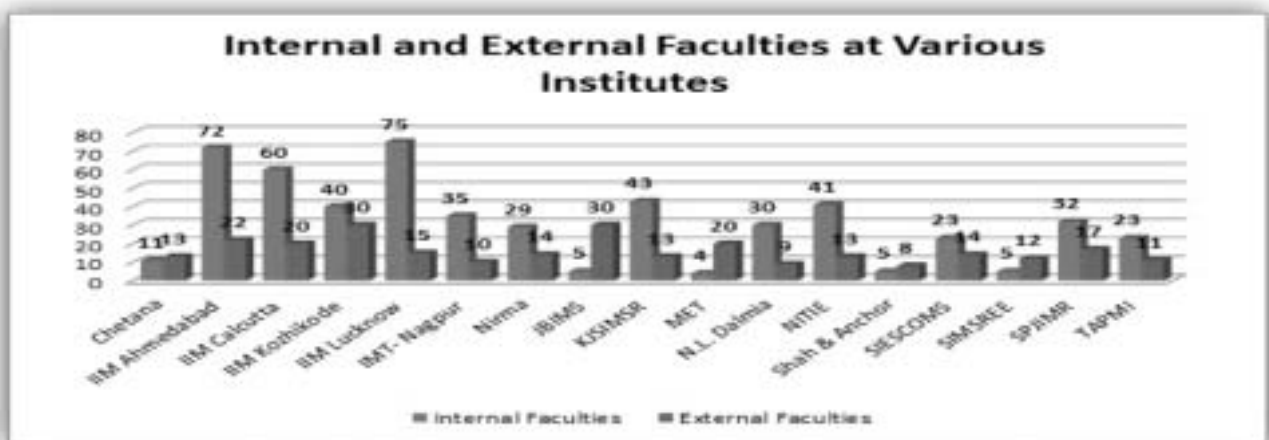
Maximum students willing to attend subject to following parameters:

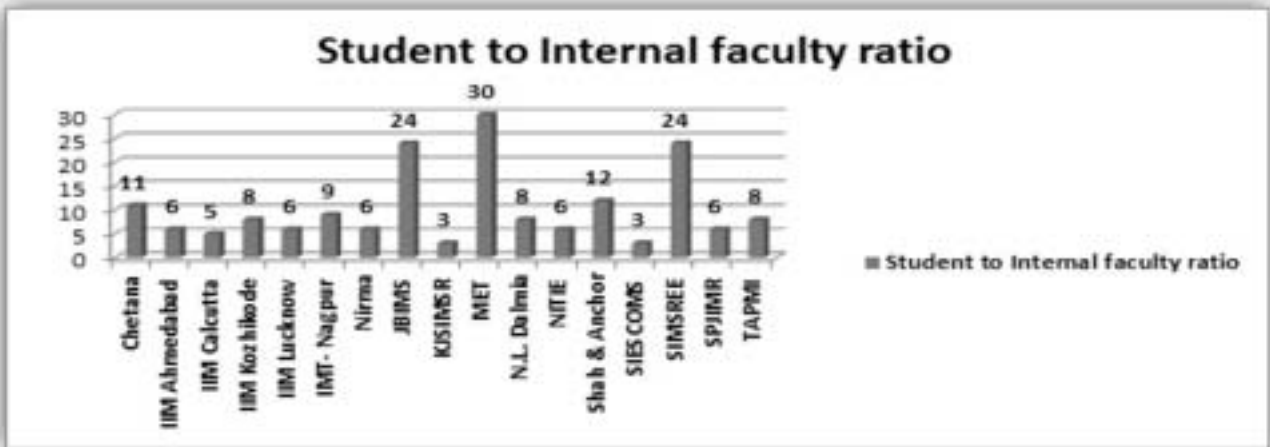


Segment 4: Faculty and Teaching Methodology

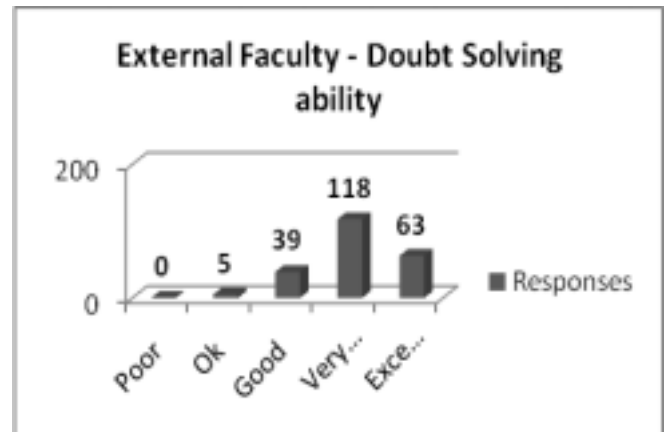
Faculty (Internal as well as External) form the foundation of any prominent B-school along-with teaching methodology.

Following are some of the findings in respect to Internal to external faculty, student to internal faculty ratio and comparison between internal and external faculties on various aspects.

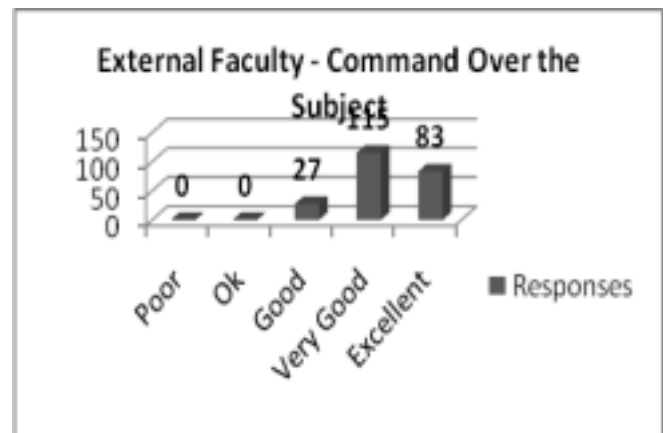
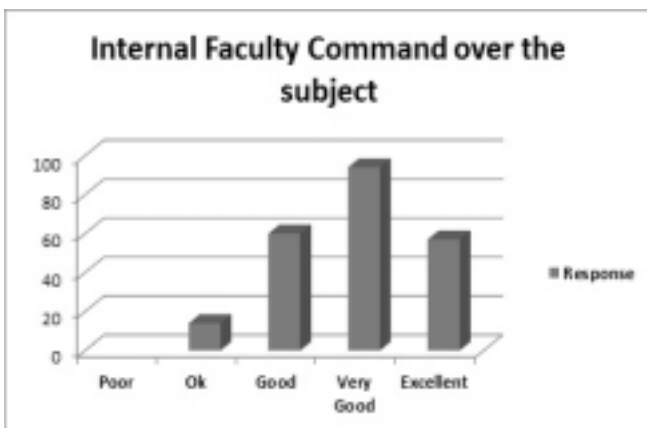


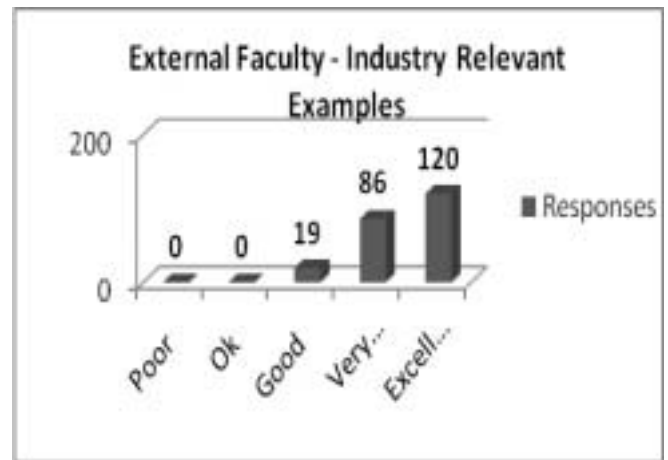
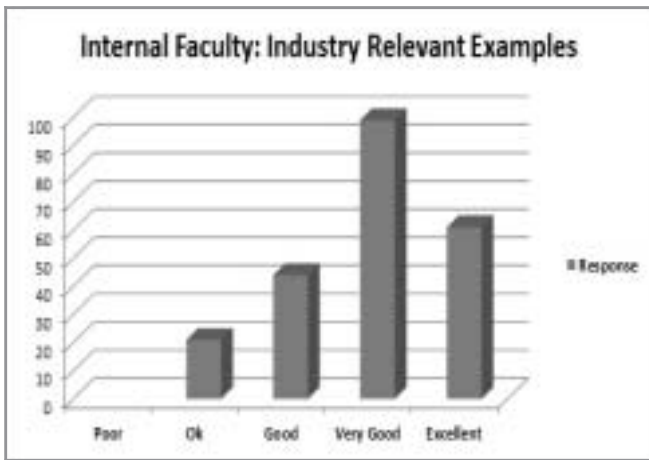


Internal v/s External Faculties Doubt Solving Ability

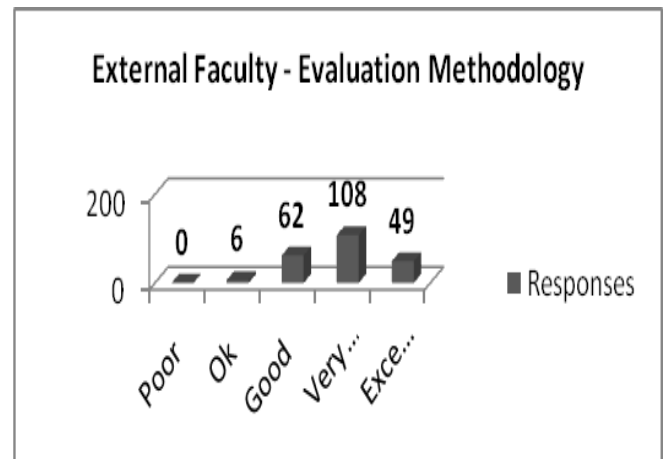
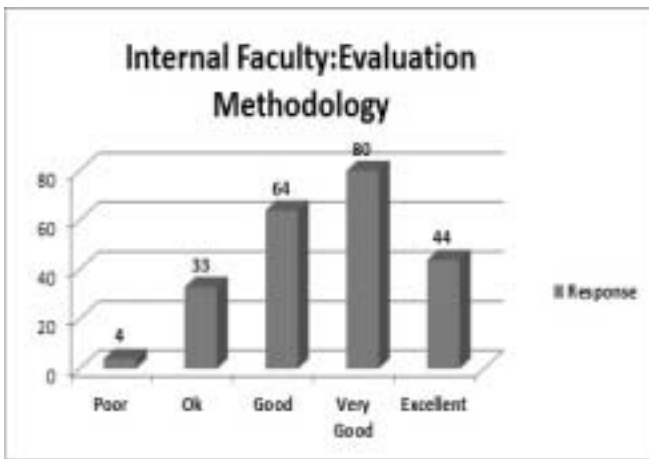


Command Over The subject

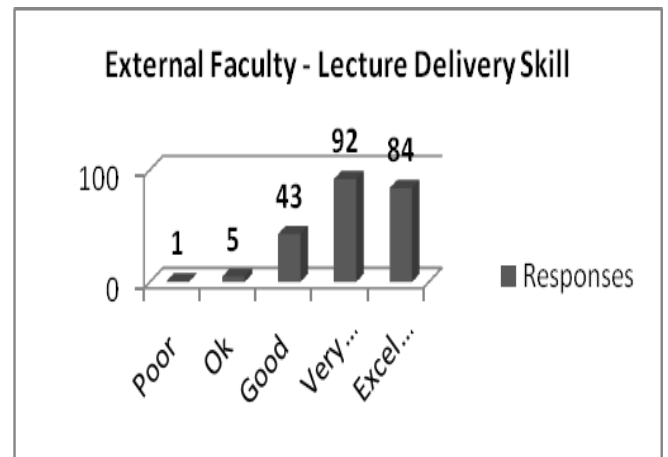
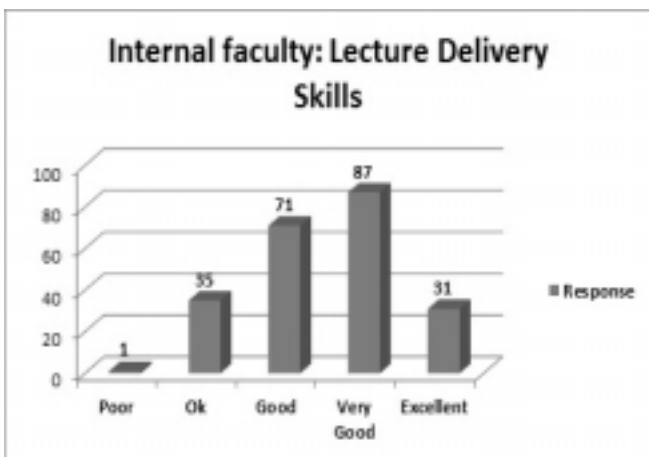




Evaluation Methodology



Lecture Delivery Skills



Conclusion and Recommendation

Entire study gave very useful analysis and insightful information regarding B-School and MBA courses.

• Course Structure

- 8hrs/day for MU & 4-5hrs/day for IIM's
- Least no. of hours spent on other than lectures in SIMSREE
- 2/3rd of the sample population – software oriented coaching
- Support for industry related projects – 54%

• Faculty

- 80% - Case Studies discussed in class
- Student to Internal Faculty Ratio – Highest in MET, SIMSREE
Lower in IIM's, Lowest in KJSIMS, SIES

• Inter College Competition

- 52% have participated
- 48% - Dedicated faculty available
- Past Experience and Presentation Skills – Key factors for Success

• College Administration

- 16 out of 17 college, **Except SIMSREE** have Placement Officer.
- Avg. Teaching Period per Semester – 3.7 months, SIMSREE – 2.5 months

Recommendations

• Course Structure

- Avg. Lecture hours per day should not exceed 5-6 hrs.
- Software applications should be incorporated to add a practical orientation

• Faculty

- Case Study approach should be used with active classroom discussions
- Student to Internal faculty ratio should be improved

• Inter College Competition

- Dedicated faculty & student committee should be in place
- Students should be made to participate in at least one competition

• College Administration

- Placement Officer should be in place
- Teaching period should be avg. 3.7 months in a semester.

Acknowledgements

We are thankful to **Dr. M.Z. Farooqui**, Principal, Rizvi College of Arts, Science, and Commerce, Bandra (E), Mumbai – 400 050 for guiding us in this research paper. **Mr. Nishad S. Banodkar** student of SIMSREE and his team members who have helped us to collect the primary data, and also grateful to **Ms. Jayshree Wasnik**, Assistant Professor, SIMSREE, Churchgate, Mumbai – 400020 for helping us in data analysis.

Reference

Johnson Burke and Christensen Larry ; *Research Methods in Education*

Kothari. C..R, *Research Methodology: Methods and Techniques*, 2004

<http://www.educationforallindia.com/>

<http://www.ugc.ac.in/pub/heindia.pdf>

Impact of ERP Implementations on Business Performance

Chandrahauns Chavan*

Abstract

The benefits of ERP systems are usually overestimated by ERP vendors. Promises are made about performance such as fast return on investment (ROI) and fast decision making but such claims need to be researched and tested in order to establish their degree of correctness. The aim of this paper is to review the current research surrounding the benefits of implementing ERP systems and to explore this relationship. The importance of this topic lies within the wide-spread of ERP systems while there are clearly many examples of unsuccessful ERP effects on business performance.

This exploratory research study has analyze the impact of ERP implementations (tangible and intangible) on critical components of the business such as Operations, Finance, Human Resource Management, etc. and identify the factors that influence the success of ERP implementation in an organization, through its effective utilization. The applications covered in this paper will discuss how ERP is affecting business performance. This will be followed by a few case studies to test the theories and will start with the methodology, data collection, and case details followed by the results, discussion, and finally conclusion

Keywords: Enterprise Resource Planning (ERP) system, business performance, case-study analysis

Introduction

The use of enterprise resource planning (ERP) software has become increasingly more common in a lot of today's businesses. It is adopted in many firms in attempts of improving business performance. The concept of business performance can be operationalised as financial gains by the organization, operational improvements for the organization or intangible gains for the organization. The focus of this paper will be on the operational and intangible gains resulting from ERP

implementation (which will be operationalised by many variables tested in this study). The reason for this selection is that the financial benefits have been analyzed many times before and do not give a direct contribution of the effect of the ERP system in specific. The reason for the insufficiency can be seen in that the financial benefits are measured quantitatively; however, a qualitative approach focusing on operational and intangible benefits can better outline the direct relationship between the ERP system and the business performance.

*Associate professor and former Director, Jamnalal Bajaj Institute of Management Studies, University of Mumbai and I/c Professor –cum – Director, Alkesh Dinesh Modi Institute of Financial Studies, University of Mumbai.
Email: chandrahauns@gmail.com

Investing into ERP systems which are very costly and which don't return business value will waste business resources. Therefore, it is important to clarify the vagueness surrounding the relationship between ERP and business performance. To further investigate the relationship between ERP adoption and business performance this paper will provide the relationship between Information Technology (IT) utilization and business performance then some applications of the concepts from IT to the more specific variable of ERP. The following sub-sections will discuss the unique reasons why ERP is implemented by each organization and the issues associated with ERP implementation projects.

Why Firms Invest in ERP?

Why do firms invest in ERP given the different alternatives for information integration in a business? The answer for this question lies between either technical gains e.g. replacing legacy systems, or for business reasons e.g. improving operational performance and efficiency. Many technical reasons exist including the replacement of disparate systems into a single integrated system. ERP also provides a tested system security basis to keep the organization up to which promises security standards and for providing data security. Business reasons also exist.

This includes automation and reengineering of business processes. Other business reasons are better management, better operations, better information availability and reengineering procedures, which are all reasons for acquiring ERP. Other business reasons include enhancing cooperation and teamwork between employees in the company. In addition, benefits expected from implementation of ERP systems include tangible, intangible and business performance factors as mentioned below:

1. Tangible Benefits after ERP Implementation

- ✓ Inventory Reduction
- ✓ Personal reduction

- ✓ Productivity improvement
- ✓ Order management improvement
- ✓ Technology cost reduction
- ✓ Procurement cost reduction
- ✓ Cash management improvement
- ✓ Revenue/profit improvement
- ✓ Transportation/ logistics cost reduction
- ✓ Maintenance reduction
- ✓ On time delivery improvement

2. Intangible benefits after ERP implementation

- ✓ New/improved business processes
- ✓ Customer responsiveness
- ✓ Cost reduction
- ✓ Integration
- ✓ Standardization
- ✓ Flexibility
- ✓ Globalization
- ✓ Business performance
- ✓ Supply/ demand chain
- ✓ Information/visibility
- ✓ Economic Performance of firm (Internal coordination cost)
- ✓ Monitoring cost
- ✓ Bonding cost
- ✓ Residual cost
- ✓ Information processing cost
- ✓ Communication cost
- ✓ Documentation cost
- ✓ Opportunity cost due to poor information

3. Business Performance factor

- ✓ Reduced organizations business risks
- ✓ Enhanced organizations regulatory compliance

Impact of ERP Implementations on Business Performance

- ✓ Makes MIS more accurate and accessible.
- ✓ Facilitate improved services to customer and suppliers
- ✓ Allows new services to customer and suppliers
- ✓ Enhanced primary users knowledge and skills
- ✓ Increased institutional accountability
- ✓ Increased shareholders confidence in organization
- ✓ Enhanced support to organizational activities
- ✓ Enhanced organization business performance
- ✓ Decreased work load in various departments
- ✓ Decreased workload in central department
- ✓ ERP is less costly to maintain and operate as compared to legacy systems
- ✓ ERP is less costly to enhance/upgrade as compared to legacy system
- ✓ ERP is less costly to integrate as compared to legacy system
- ✓ ERP made it easier to take advantage of new technology
- ✓ Nature of work in various departments has changed

ERP Projects

ERP systems are usually implemented as projects. ERP implementation projects usually involve selecting the ERP vendor, establishing business process reengineering, implementation, and evaluation of the adopted system. ERP implementation projects normally involve internal IT & business personnel from the adopting firm as well as external consultants from implementation partners in order to be successful. This shows how human resources intensive ERP projects are. It is also worth mentioning that a good implementation partner is considered one of the most important factors for the success of ERP projects, and is another addition to the complexity of ERP implementation projects. Due to the complexity of ERP projects it will be important to discuss ERP project implementation issues and ERP project failures in the next sections to further understand

the introduction of ERP into organizations and how it contributes to the relationship between ERP and business performance.

ERP Implementation Issues

There are different utilization issues that face business that decides to go forward and implement ERP. ERP requires a big portion of time, personnel, and capital. Most of this cost is not associated with the ERP software package itself but with its implementation, including customizations, configurations, and consultation services to implement it. The time needed to establish an ERP system is at an average of 21 months. It can be said that ERP projects frequently involve business process reengineering (BPR), can include customizations, and require good budgeting and time management in order to lead to successful business performance gains.

ERP Project Failure

Most of the implementation failures for ERP were early ERP adoptions which did not have strong business justifications. This was attributed to the misalignment between the objectives from the ERP implementation and the strategic organizational and IT goals. If such a misalignment exists, it can cause the business to lose the advantages of ERP systems. On the other hand, investing into ERP systems without any objective other than following the market or industry trend might also cause an ERP project to fail. In addition, ERP failure can be associated to internal or external aspects to the organization. Internally, failure is associated to the insufficient business knowledge, while externally failure is associated to the weak technical skills of the consultants helping in the ERP implementation. Miscommunication between the teams involved can also result into failure. Insufficient training of end-users is also a reason attributed to ERP failures. Activities like organizational integration, user acceptance testing, accurate scope planning, and successful communication management between project members are also important factors of ERP project success or failure and all contribute to the relationship between ERP and business performance.

IT and Business Performance

Information technology is a general term which includes many technologies. ERP systems can be thought of as a specific instance of information technology. In this section, an exploration for the relationship between information technology and business performance will be reviewed. One of the most important business performance gains to consider is productivity. However, software was found to have the least effect when compared to hardware and communication technology (which is relevant to ERP as it is mainly software). When many IT technologies are combined, it was found to generate greater positive effects on labour productivity.

When analyzing the effect of IT on business performance where some studies supported a positive relation while others suggested that companies adopting ERP did not perform financially better than non-adopting companies. It can be also said that the effect of IT on business performance differs from country to country and should be considered when measuring business performance gains due to IT adoption.

ERP and Business Performance Benefits

This section will discuss the relation between ERP systems as a specific example of IT with business performance and productivity. Although literature seemed to agree with the hypothesis that ERP improves performance, there were still some concerns expressed by some scholars that there might be reverse causality between pre and post-implementation with a drop in some performance indicators. This can then suggest that ERP systems do not always affect business performance positively and some contributing factors affect this relationship.

The Stages of ERP Benefits

ERP system implementation projects have got different phases which need to be considered when

analyzing the benefits achieved by ERP adopting companies. It takes between 1 to 2 years for business benefits to start materializing. It was also stated that an ERP project does not mature except after 3 years. ERP benefits are expected to be achieved on a continuous basis after implementing the system and not all the benefits start to appear after the “shakedown” phase taking duration of 2 years or more.

The reason for accumulation of benefits after the “shakedown” phase is attributed to employee learning resulting into more usage and experience with the ERP system. Generally and as a result of the possible delays of ERP benefits after implementation during the “shakedown phase”, it is recommended not to measure business performance during this period heavily quoted by literature. The reason for this is that it would be inaccurate to measure productivity and impact as the business wouldn't have stabilized.

Factors of ERP and Performance Benefits

Beside the factor of the stage of measuring business performance other factors also exist, that state that there might be an effect caused by the industry status and shocks that might occur in the market when measuring business performance. This might lead to incorrect measurements and therefore misconceptions. Proper management of IS implementations like the ones involved in ERP can also be reported as an important contributing factor that affects performance gains from the system. Management should also set objectives from ERP implementations.

On the other hand, things like “ERP size” can be a contributing factor of its effect on business. The alignment between strategic business goals and ERP objectives is an important factor for generating business benefit from the ERP system. While it was commonly believed that ERP implementations based on business goals are more successful, it was found that business

oriented ERP implementations do not necessarily result into better financial performance; however technical driven implementations were found better performing in terms of Return on Assets (ROA).

Companies implementing ERPs from multinational vendors had better performance improvements than companies implementing local vendor ERPs. ERPs can actually diminish performance after implementation. This was said to be more significant with companies involving international business where multinational ERP vendors can provide better functionality to cover such needs. This is another indicator that factors like the ERP vendor and specific usage of the ERP system can lead to different outcome concerning business performance.

Research Gap

The research so far has investigated performance gains due to ERP adoption under specific conditions and with specific measurements. This included research in

many countries around the world testing this effect in a random sample of companies, however, there are limited approaches done by researchers for only concentrating on successful examples. In addition, analyzing publically available financial data was also conducted but has its shortcomings in giving details of the perspective of the internal managers in the company. Therefore, this research paper will only target only a few successful cases of ERP implementation and from the point-of-view of the managers in the company. Success of the ERP implementation will be compared to the factors discussed by previous researchers.

It also remains however quite vague as for the exact benefits to be expected from ERP implementations, therefore, an exploratory approach is required to try and reach a clear understanding. As an alternative to the quantitative analysis conducted with publically available financial data, more specific and detailed study has been carried out to give a deeper look at the effect of ERP on business performance.

Theoretical Framework

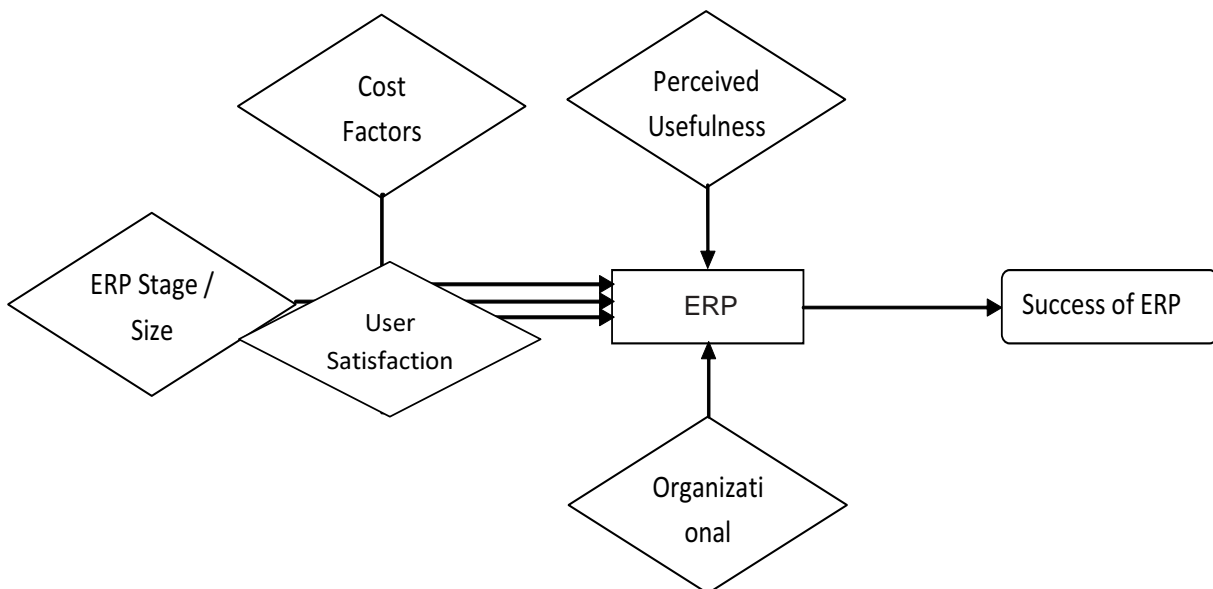


Figure - 1

ERP Utilization is a practical indicator of Success of ERP Implementation. While the dependent variable – Success of ERP is either positively or negatively influenced by the Independent Variable – ERP Utilization. There are various moderating variables which affect the Effective Utilization of the ERP system implemented. They can be briefly discussed as below.

ERP Stage / Size factor

ERP system implementation projects have got different phases which need to be considered when analyzing the benefits achieved by ERP adopting companies. The reason for accumulation of benefits after the “shakedown” phase is attributed to employee learning resulting into more usage and experience with the ERP system. On the other hand, things like “ERP size” can be a contributing factor of its effect on business.

Cost Factor

Cost Factors, both fixed and variable, are major contributors to the Effective Utilization of an implemented ERP package.

User Satisfaction

User satisfaction is essentially a subjective item. A high level of dissatisfaction when ERP is used in an organization can be a deciding factor in bringing down the effective utilization of the system developed.

Perceived Usefulness

Perceived Usefulness, or expected future benefit of ERP can be seen to a direct impact on the effectiveness of the system implemented. If the Managers perceive the ERP system in place as useful, it will lead to effective utilization of the system across the organization. It is important to know whether the ERP system implemented does the following things from the user’s perspective:

- Helps to save time in his/her job
- Affects the number of tasks they need to finish in their work

- Reduces the number of errors they make on your job
- Provides more knowledge concerning the company and business processes
- Affects the routine of your work positively

Organizational Factors

Organizational factors also play a very important role in determining the effectiveness of an ERP system implemented, and hence the success of the ERP implementation. From an organizations perspective, one needs to understand if the ERP system does the following things:

- Collects all the important information, relevant data & business transactions efficiently and precisely
- Affects business performance inside the company
- Helps in making you more integrated with other departments and teams
- Helps communicate with top management
- Leverages or empowers the users in achieving operational/Business excellence

Conceptual Framework

Figure - 2

Impact of ERP Implementations on Business Performance

The research undertaken will primarily focus on analyzing the effect of Organizational Factors and the Perceived Usefulness of the system (or expected future benefit from the system) on the overall Utilization of the ERP implemented.

Objective Of The Study

Keeping in view the importance and gaps in research analyzed, a study with an objective to identify the impact of various factors that affect the ERP Implementation success in select mid-sized organizations in India.

The study is to analyze the impact of ERP implementations (tangible and intangible) on critical components of the business such as Operations, Finance, Human Resource Management, etc. and identify the factors that influence the success of ERP implementation through its effective utilization.

Hypothesis Development

For this purpose of this study, following Hypothesis was developed:

Hypothesis 1:

ERP Systems leverages or empowers in achieving operational / business excellence.

Hypothesis 2:

Perceived Usefulness of ERP leads to effective implementation of ERP in an organization.

Research Design

The scope of this research is restricted to the 5 above mentioned ERP adopting organizations.

Secondary data for research was collected from related books, publications and records of organization under study. Primary data has been collected through questionnaire-cum-interview technique. For this purpose questionnaire was developed on already established models and survey of literature.

Questionnaire was first pre-tested on 5 active ERP users from the actual sample to be interviewed for checking its reliability and content validity. The modified questionnaire was then administered to all the sampled respondents.

To understand the impact, all the project managers, associates, HR executives and Finance executives who actively use ERP systems in their organizations were selected. Proportionate Stratified Random Sampling method was used for this study.

The questionnaire-cum-interview approach was adopted to ensure that the respondents were aware of the context in which the questions were asked. The questionnaire was duly filed by all the selected respondents, while they were briefed on the questions being asked in the questionnaire. Also, a qualitative feedback was taken from the respondents at the time of data collection to ensure that minimum ambiguity in the questions asked.

Responses were obtained on various factors in Perceived Usefulness of the ERP system and Organizational Factors affecting the effectiveness of the ERP system leading to better utilization.

The Sample design and Data collection approach is as discussed in the next section. The information obtained using a likert scale from the sample respondents has been analyzed using analytical techniques to arrive at conclusion.

Weighted average method was used for interpreting the information obtained through the likert method. Each position is one survey question, and the scale used the following responses: Strongly agree, agree, neutral, disagree, strongly disagree. The responses were coded (weighted) accordingly: Strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5.

Scope And Limitations

The study has been conducted in 5 organizations from various sectors:

1. Patni Computer Systems Ltd. (SEEPZ, Mumbai)
2. Tech Mahindra Ltd. (Chandivali, Mumbai)

3. Bharat Bijlee Ltd. (Airoli, Thane)
4. Reliance Infrastructure Ltd. (Santacruz, Mumbai)
5. V2 Solutions Ltd. (Vashi, Navi Mumbai)

Patni Computer Systems Limited (PCS) is a leading provider of Information Technology services and Business Solutions. The company employs over 16,000 people, and has 23 international offices across the Americas, Europe, and Asia-Pacific, as well as offshore development centers in 8 cities in India. Patni's clients include more than 400 Fortune 1000 companies. PCS uses Peoplesoft HR and Finance implementations.

Tech Mahindra Ltd. (TechM), formerly Mahindra British Telecom (MBT) is an Information Technology service provider company headquartered in Pune, India, and is currently the 5th largest software exporter in India and 1st largest Telecom Software Provider in India. It had more than 40,000 employees. TechM also uses Peoplesoft HR and Finance implementations across the organization.

Bharat Bijlee is an Indian Public Limited Company established in 1946. It is a multi-product, multi-divisional organization, and its main business segments are Transformers, Projects, Electric Motors, Elevator Systems and Drives. It caters to a spectrum of industries and the builders of the nation's infrastructure: power, refineries, steel, cement, railways, machinery, construction and textiles. Bharat Bijlee uses SAP for the total Supply Chain.

Reliance Infrastructure, formerly known as Reliance Energy is India's largest private sector enterprise in power utility. It is a flagship company under the Reliance Anil Dhirubhai Ambani Group banner, one of India's largest conglomerates. The company is the sole distributor of electricity to consumers in the suburbs of Mumbai and uses SAP for its total Supply chain. It also runs power generation, transmission and distribution businesses in other parts of Maharashtra, Goa and Andhra Pradesh. Reliance Energy plans to increase its power generation capacity by adding 16,000 MW with investments of \$13 billion.

V2Solutions is an organization with strength of 450 dedicated workforce. It is a software solution provider for

client from across a diverse range of markets. They use Peoplesoft HR and Finance implementations across their organization.

The study is conducted by collected through questionnaire-cum-interview technique using a 5 point Likert scale for gathering responses. Only the 5 above mentioned companies were selected as sample from the universe consisting of all the other business organizations. For this purpose questionnaire was developed on already established models and survey of literature. The limitation of the study is that the study assumes that the companies selected for sampling represent the entire universe. However, it will be more appropriate if the study is considered in the context of the above mentioned organizations, and not extended to the entire universe as there may be a sampling frame error in the sample selected.

Sample Design And Data Collection

Proportionate Stratified Random Sampling method was used for this study. The sample of the randomly selected respondents was proportionate to statistically represent the universe of active users present within the selected organizations.

Experienced respondents from the below mentioned companies use of ERP system actively as part of their job profile have participated in the study. Data was collected on 5-point Likert scale depending on the relative importance of factors. Further average scores were calculated for all respondents of 5 organizations.

The norms were considered for the choice of respondents in each participating organizations was 1% of the relevant population of the organization was selected as sample size. Also, norms were followed for sample distribution of each of the participating organizations, to ensure that appropriate participation from various functions in the organization were involved – like Project Managers, Associates, Human Resource Management, Finance, etc. These norms were decided after a detailed discussion within the research group. It was found that by increasing sample size, there was a marginal change in results and effort to collect data would have increased considerably.

Impact of ERP Implementations on Business Performance

Following table explains the sampling frame:

Table – 1

Organization	Universe	Active ERP users (Relevant population)	Sample	Percentage of Relevant Population
Patni Computer Systems Ltd. (SEEPZ, Mumbai)	16,000	2500	25	1.00%
Tech Mahindra Ltd.(Chandivali, Mumbai)	40,000	2000	20	1.00%
Bharat Bijlee Ltd.(Airoli, Thane)	1,200	1200	12	1.00%
Reliance Infrastructure Ltd.(Santacruz, Mumbai)	8,000	1300	13	1.00%
V2 Solutions Ltd.(Vashi, Navi Mumbai)	400	400	4	1.00%

Data Analysis And Interpretation

Data was collected based on questions that affect at organization level and individual level. Following

charts contains the acceptance level of ERP systems at both these levels.

The overall information obtained by way of sampling may be summarized as below:

Table-2

Sr No	Questions	Rating Scale					Mean
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Weights >		1	2	3	4	5	
Organization							
1	ERP system collects all the important information, relevant data & business transactions efficiently and precisely	2	0	5	46	21	4.14
2	ERP system affects business performance inside the company	2	8	12	26	26	4.24
3	ERP system helps in making you more integrated with other departments and teams	0	7	9	35	23	4.00
4	ERP system helps you communicate with top management	3	17	24	18	12	3.26

Individual

6	ERP system helps to save time in your job	3	8	10	38	15	3.73
7	ERP system affects the number of tasks you need to finish your work	1	6	22	34	11	3.65
8	ERP system reduces the number of errors you make on your job	1	6	17	30	20	3.84
9	ERP system provides more knowledge to you concerning the company and business processes	4	6	16	30	18	3.70
10	ERP system affects the routine of your work positively	1	5	17	40	11	3.74
11	You are satisfied with the ERP Implementation in your organization and the results achieved	1	2	19	32	20	3.92

The weighted score for Question-1 is 4.14. 91% associates using the ERP system agree that ERP system collects all the important information, relevant data & business transactions efficiently and precisely.

Chart-1

More than 70% people feel that ERP system affects business performance inside the company in a positive way.

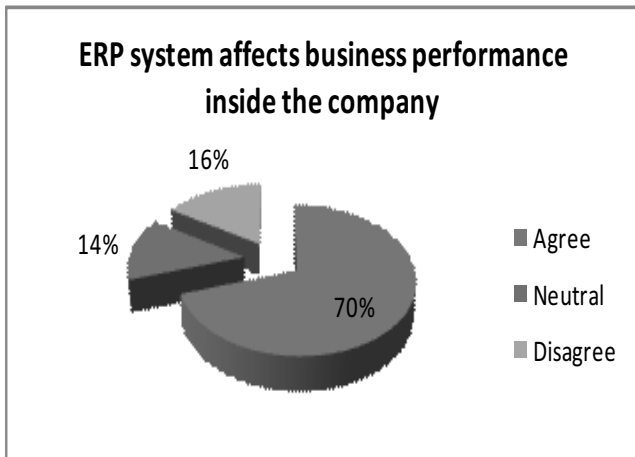


Chart-2

Approximately 60% of the active ERP users decide to stay neutral or disagreed that the ERP system helps you to communicate with top management. Further research could be undertaken to understand the various reasons behind such a perception, and theory can be developed for addressing the same. This will lead to more effective utilization of the ERP system, hence resulting in a successful ERP implementation.

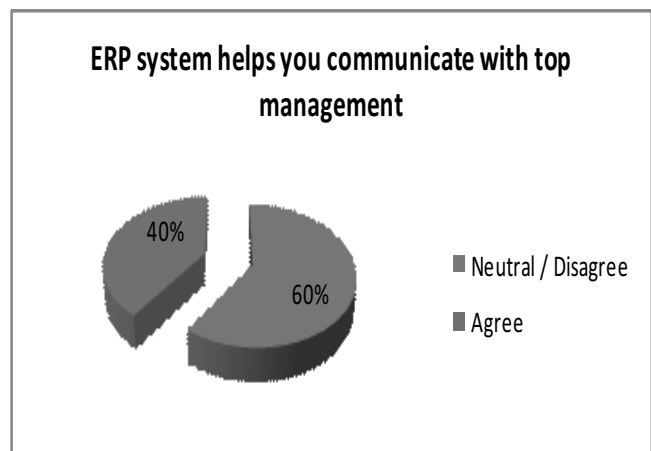


Chart-3

74% respondents agreed or strongly agreed to the fact that ERP system empowers their organization in achieving Operational/Business excellence.

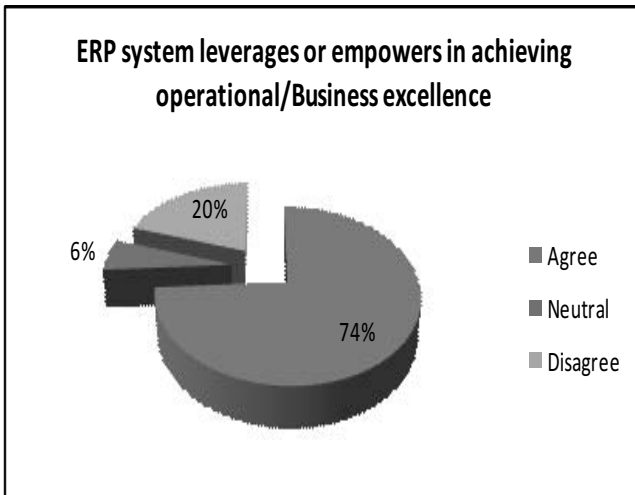


Chart - 4

The information collected depicts that a strong percentage of ERP users believe that organizational factors influence the success of ERP implementation in their organization. This is a critical factor in determining the effective usability of the system implemented in their organization.

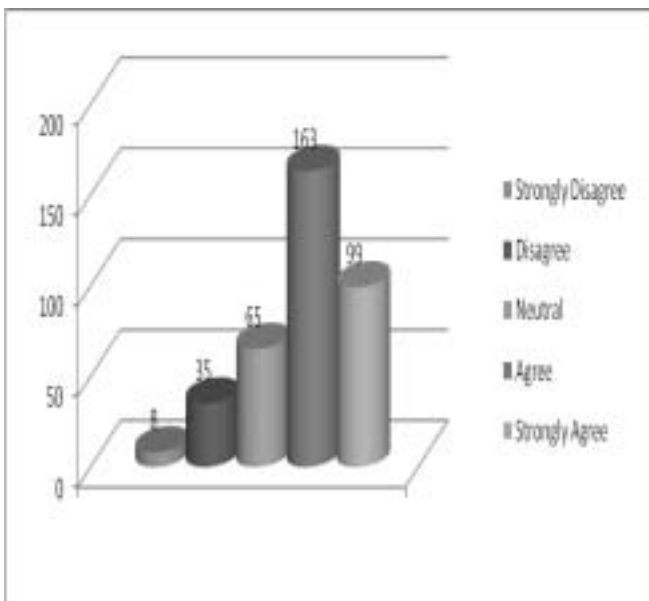
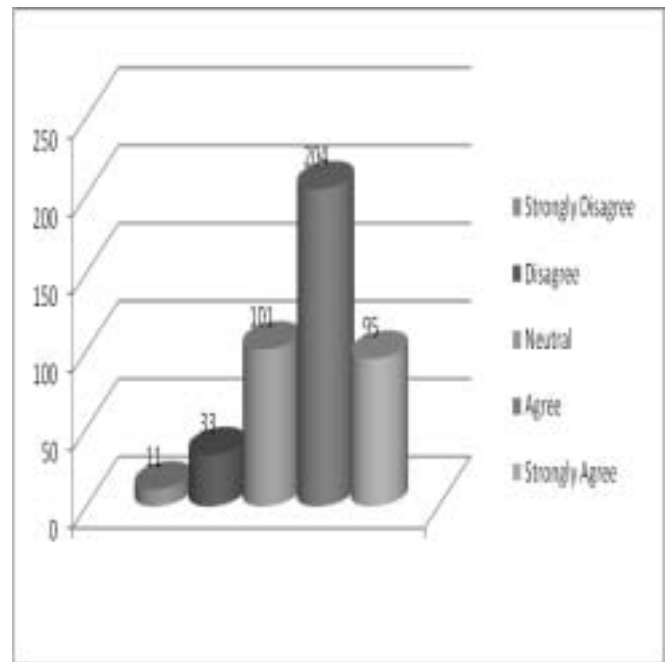


Chart – 5: Organizational Factors influencing success of ERP Implementation

The information related to Individual factors show a strong correlation between the individual factors and their influence the success of ERP implementation in the organization, leading to better utilization of the system implemented.



Conclusions :

In conclusion, this study, despite the limitations described in the prior sections, suggests that ERP Systems leverages or empowers the individuals in organizations in achieving operational / business excellence.

Perceived Usefulness or expected benefits of an ERP implementation as seen by users also leads to effective utilization of ERP in the organization. The organizations selected for survey have a highly successful ERP implementation, because the users perceive it to be adding value to their routine work in a positive way.

Some of the limitations of this study may also be viewed as avenues for future research. An extensive research involving all the companies using ERP implementation, from various

sectors can be selected, to understand the impact of ERP implementations on business performance in various sectors. Also, a study of various ERP packages available in the market can be studies in isolation to understand the impact of select ERP implementations on the performance of organizations in different sectors, or organizations of different sizes.

References :

1. William G. Zikmund,(2005), *Business Research Methods*,7th Edition,Thomson Asia Pte Ltd., Singapore.
2. Uma Sekaran ,(2005), *Research Methods for Business-Skill Building Approach* ,4th Edition,John Wiley and sons ,Singapore.
3. Luvai F. Motiwalla and Jeff Thompson (2009), *Enterprise Systems for Management*, 1st Edition , Pearson Education Inc., South Asia.
4. Ralph M. Stair and George W. Reynolds, (2006), *Principals of Information Systems*, 1st Edition, Thomson Asia Pte Ltd., Singapore.
5. Kenneth C. Laudon and Jane P. Laudon , (2007), *Management Information Systems*, 1st Edition, Pearson Education Inc., South Asia.
6. James A. O'Brien,(2002),*Introduction to Information Systems –Essentials for the Internetworked E-Business Enterprise*,10th Edition , Tata McGraw-Hill Publishing Company Ltd. , New Delhi.
7. A Nag, (2008), *Strategic Marketing*, 2nd, edition, Macmillan India Ltd., New Delhi.
8. Graham Hooley , Nigel F. Piercy , Brigitte, Nicoulaud, (2009), *Marketing Strategy and competitive positioning* , 4th edition, Porling Kindersley(India) Pvt. Ltd.
9. G C Beri (2008),. *Marketing Research*, 4th Ed Tata McGraw Hill, New Delhi.

Web links:

- Enterprise Resource Planning Wiki - http://en.wikipedia.org/wiki/Enterprise_resource_planning
- ERP Reference - <http://whatiserp.net/>
- CCSE Journals Online - www.ccsenet.org/journal/index.php
- Journal of Theoretical and Applied Information Technology – www.jatit.org
- eHow - How to Use the Likert Scale in Statistical Analysis - http://www.ehow.com/how_4855078_use-likert-scale-statistical-analysis.html

Indian IT Industry And Its Role In E-Governance

Raju G. Chandnani * Ameer Vora**

Abstract

The growth of IT industry in the export segment has benefited our country hugely in terms of wealth creation and employment. However, its performance in the domestic sector has been not as remarkable as compared to the export segment. Slow implementation of e-Governance by the central and state governments is one of the major reasons of the lackluster performance of software industry in the domestic segment. The advances in IT and the widespread of internet facilities along with falling prices of bandwidth tariffs provide an ideal opportunity for the central as well as state governments to incorporate more and more departments and projects under e-governance and transform the relationship between the citizens and governments. E-governance requires the use of internet and the pace at which the governments are adapting themselves to the internet is considerably slower than the pace at which the private sector is adapting although there are justifiable reasons for the slow adaptability like the sheer size and complexities of government operations, limited access to internet among the citizens, bureaucratic hurdles in acceptance of digital operations which brings in greater accountability and transparency.

Keywords: IT Industry, E-Governance,

Introduction

The government has traditionally been recognized as a key driver of the domestic IT market around the world. Most of the big IT projects are in the government sector and most of the IT companies' eye this lucrative segment for their growth as even 2-3% of the government spending translates into a few thousand crores. The growth of IT industry in the export segment has benefited our country hugely in terms of wealth creation and employment. However, its performance in the domestic sector has been not as remarkable as compared to the

export segment. Slow implementation of e-Governance by the central and state governments is one of the major reasons of the lackluster performance of software industry in the domestic segment.

E-Governance

“E-Governance is a method by which governments are empowering citizens to act for themselves without having to go through bureaucracy. Government, perhaps can benefit more than any other organisation, can benefit from the

*I/C Principal & Head, Dept. of Commerce, Tolani College of Commerce, Mumbai. Email id rajuc07@yahoo.co.in

**Assistant Professor, Dept. of Commerce, N. M. College, Mumbai, Email id : itsamee@gmail.com

efficiencies and improved service that stem from digital processes.” – Bill Gates.

What is e-Governance?

Electronic governance or e-governance is that application of information technology to the process of government functioning to bring about simple, moral, accountable and transparent governance. The advances in IT and the widespread of internet facilities along with falling prices of bandwidth tariffs provide an ideal opportunity for the central as well as state governments to incorporate more and more departments and projects under e-governance and transform the relationship between the citizens and governments. Today e-Governance is more than just providing citizens some services over the internet. e-Governance involves new ways of listening to citizens and addressing their grievances, new ways of organising and delivering information and services. e-Governance aims at informing the citizen about the government, representing the citizen and consulting the citizen. e-governance helps the government to provide better quality service, widespread access to services and it also helps the government to lower its transaction costs.

Key issues faced by governments in e-Governance

Today, consumers and citizens are expecting the government to be more open in their dealings. This phenomenon has gained more credence after the implementation of Right to Information Act, which has armed the citizens to demand information from various government departments which was considered highly confidential till some time back.

While a better informed citizen is able to exercise his rights and discharge his responsibilities, citizens as consumers also expect to be involved in the decision making process to secure services which meet their needs and expectations. The government on its part has to face some key and specific issues in provision of information to the public and these issues include:

- Making information widely available to the public
- Safeguarding the privacy and confidentiality of citizens seeking information
- Maintaining information
- Sharing of information with various sources, public and organisations
- Adoption of new information communication technologies
- Proper dissemination of information
- Ensuring access to information

Government a key driver of domestic IT industry

The government has traditionally been recognized as a key driver of the domestic IT market around the world. Most of the big IT projects are in the government sector and most of the IT companies' eye this lucrative segment for their growth as even 2-3% of the government spending translates into a few thousand crores. However in India, government organizations have been slow to adopt IT even though they have been catching up of late as the government is becoming IT enabled and using technology solutions to bring greater benefits to citizens and improve its internal efficiencies. In fact, government agencies have been among the earliest and largest users of IT practices by using IT software to manage payrolls, tax collections, processing of passport, visa and immigration, computerization of driving license among other projects but in a slow and phased manner. E-governance requires the use of internet and the pace at which the governments are adapting themselves to the internet is considerably slower than the pace at which the private sector is adapting although there are justifiable reasons for the slow adaptability like the sheer size and complexities of government operations, limited access to internet among the citizens, bureaucratic hurdles in acceptance of digital operations which brings in greater accountability and transparency.

Indian software industry has not benefited from government contracts unlike the U.S where the defence spending supported the growth of computer science in universities and the growth of defence related markets created huge opportunities for software developers. They further state that even though Indian government established IITs, IIMs and an excellent engineering education system which led to steady supply of manpower for the software industry, there was no effort on the part of the government to create large projects until late 1980s when projects like railway reservation system were undertaken by state owned CMC Ltd. It was the lack of domestic demand which led the Indian software industry to focus on the largest and most

demanding market- the U.S. for its growth opportunities. The government vertical in India is estimated to be worth USD 500 million with a CAGR of 30%. Dell, a leading manufacturer of PCs and notebooks has identified the government, public sector and education as the areas of strategic focus and opportunities to achieve stronger growth in India.

Stages of e-Governance readiness: According to the findings of a study conducted by Indian Market Research Bureau (IMRB), India is at the threshold of ICT initiatives at the government level with several structural changes in the existing process of governance already underway.

Stage	Characteristics	Country
Stage 1	Initiatives on ICT infrastructure, people, IT policy, and implementation plans undertaken by the government and related entities. Countries at this stage need to undergo massive economic and political change to become e-ready.	India
Stage 2	Benefits of stage I are realisable in stage II and the government entities begin automation and integration of their processes.	China and Japan
Stage 3	The benefits of stage I and stage II are visible at these stages. All government related services are available to the masses via information and communication technologies. IT assumes the role of core functionality. The nations at this stage continuously innovate and improvise on the current levels of e-governance and the benefits of automation and integration are visible at this stage.	USA, Finland, Singapore and Hong Kong

Note: The countries listed above are only indicative and not exhaustive in list.

Source: IMRB

The main findings of the IMRB study on the basis of the inputs provided by various ministries and departments of the central and state governments were as under:

- About 61% of the central ministries and departments appeared to have exact definition of e-Governance and defined it as a creator of Simple, Moral, Accountable and Transparent (SMART) Government.
- 26 ministries and departments scored 100% on e-Governance preparedness and they had clearly

understood the scope of definition of e-Governance and had also accorded due importance to it.

- 55% of the ministries and departments considered IT as one of the key areas whose performance was regularly monitored by the top officials.
- About 59% of the ministries and departments claimed to have a well documented IT action plan/ policy guidelines. Most of these ministries had communicated this plan to the stakeholders and some had attempted to adhere to it. Around 14% of the ministries and departments were in the process of documenting their IT action plan

- Most of the ministries and departments had completed their basic automation in terms of PC, printers, scanners among other equipments. Some of them had moved ahead from basic automation to networking for better information and monitoring while some others had networked with the external stakeholders, public agencies and other related bodies.

E-Governance in India

After the inroad made by ICT in all spheres, there has been a major change in the way products and services are delivered in India and the world over. After the private sector, the government also has been forced to realign its working in accordance with the new pattern where IT is becoming the enabling tool for reaching out to the citizens of the country and communicating with them. There has been a paradigm shift in the concept of public governance and the manner and method in which the central and state governments are delivering the services to the citizens. Today, public governance has assumed the role of e-governance. The central and state governments have been forced to re-structure themselves

so as to have better interface with the public and also with a view to provide better governance. The vision of almost all the state governments is to use IT as a tool for enhancing efficiency and effectiveness in public administration and also to ensure that most of the government dealings and services are delivered to the public through internet, PCs and telecommunication network.

National e-Governance Plan (NeGP)

The Indian government has a comprehensive National e-Governance Plan (NeGP), comprising of 27 Mission Mode Projects (MMPs) and 10 components as the backbone of its e-Governance strategy. There is an increased focus on information at Public Sector units and educational institutes offering all the modern facilities. The government vertical is estimated to form 20% of the Indian PC market. Some major on-line Services under NeGP are Income Tax, Passport/ Visa, Company Affairs, Central Excise, Pensions, Land records, Property Registration, Road Transport, Agriculture, Municipalities, Gram Panchayats, Police and Employment Exchange

List of Mission Mode Projects under the NeGP (Central Government)

Mission Mode Project	Description	Ministry/Department
Income Tax	Pan India network to cover 745 Income tax offices in 510 cities over a hybrid network, ISDN for backup and VSAT connectivity for remote locations	Ministry of Finance/ central Board of Direct Tax
Passport, Visa and immigration	Pan India network to connect all passport offices through out the country over a hybrid network, ISDN for backup and VSAT connectivity for remote locations. Electronic record keeping and verification of passport and immigration information	Ministry of External Affairs/ Ministry of Home affairs
DCA21	Modernisation and computerisation program of Ministry of Company Affairs for electronic filing of companies' documents through an entirely paperless process	Department of Company Affairs
Central Excise	Computerisation of income tax system, PAN and TAN related services, preparation of returns, e-filing of returns, e-filing of TDS returns, demat of TDS certificates, refund of taxes and grievance redressal mechanism	Department of Revenue/ Central Board of Excise and Custom
National Citizen Database	Preparation of National Population Register, National Register of Indian Citizens, National Register of Residency, Providing National Identity Number and Multi-purpose National Identity card	Ministry of Home Affairs and Registrar General of India

Source: Department of Information Technology, Ministry of Communication/IT & NASSCOM 2007.

List of Mission Mode Projects under the NeGP (State Government)

Mission Mode Project	Description	Ministry/Department
Land Records	Project aims at providing on demand distribution of land record entries, on-line filing of mutation applications, submission and tracking of complaints, location details of plots along with ownership	Ministry of Rural Development
Road Transport	Computerisation of driving License and Registration certificate, creation of National and State Database connecting all RTOs in the state and other states in stage based manner.	Ministry of Road Transport and Highway
Property Registration	Electronic record of property ownership details	Department of Resources
Agriculture	Establishing a nation wide communication network for effective and speedy information exchange in Agricultural Marketing related community with market information	Department of Agriculture and Cooperation
E-Biz	Promotion of e-business adoption by establishing a single window for G2B services for central, state and local governments to enable on-line event driven interactions by re structuring the forms and procedures thereby reducing time for establishment and compliance	Department of Industrial Policy and Promotion/ Department of Information Technology
E-courts	Developing central repository for citizens and providing online services – filing of applications for hearing and logging time	Ministry of Justice/ Ministry of Home Affairs
Pensions	Web based portal for registering Pension Grievances and tracking	Department of Pension welfare

Source: Department of Information Technology, Ministry of Communication/IT & NASSCOM 2007.

The above list is indicative of various MMPs under Central government and it is not an exhaustive list.

In addition to the Mission Mode Projects, most of the state governments, state and central departments, state and central ministries are in the process of implementing e-Governance solutions. Some of these projects are already in implementation while others are in different stages of implementation. According to the latest review published by the Department of Information Technology; Karnataka, Tamil Nadu, Maharashtra, Andhra Pradesh and Chandigarh lead in terms of readiness, usage and environment which favours e-Governance adoption while Bihar, Arunachal Pradesh, Manipur, Nagaland, Tripura are the least achievers in

terms of readiness, usage and environment which favours e-Governance adoption. The NeGP project along with several other e-Governance projects initiated at the state level provide an enormous opportunity to the Indian IT industry and software industry in particular to enhance their share in the domestic IT sector. Added to this is the widespread computerisation drive undertaken by the education sector, banking sector, insurance sector and an increased focus on dissemination of information by public sector agencies which makes the domestic segment very lucrative for the software industry in the next few years. The government and public sector vertical is expected to contribute to 20% of the PC market in the coming year.

Recommendations:

- The government should make use of new ICTs to bring economic and social benefit to citizens, business and the wider society through judicious use of e-Governance.
- Before the implementation of e-Governance, key systems and processes like computerisation of all departments, use of local languages, training of employees etc have to be taken care of.
- E-governance should be used to improve the public access to a wide range of government services particularly to poor people living in rural and remote areas. E-governance should be used to provide access to public to information 24*7*365.
- E-governance should be used to improve the quality of government services and reduce the cost of delivery of government services to the public. E-governance should be used to reduce the bureaucratic hurdles and ease the access of information to the public
- Sectors like public grievances, rural services, police, social services, registration of licences and certificates, public information, utility payments etc which involve public interface and are extremely oriented towards e-Governance have to be given priority while initiating the e-Governance process.
- Government has to lay emphasis on creation of proper IT infrastructure across the country. Accessibility to information in the rural areas has to be ensured through Internet Kiosks, PCOs, STD/ ISD booths, etc.
- A single web based portal should be created for all the government services to the public should be created. Transactions between government organisations and departments should be networked to ensure that most of the transfer of files should be through intranet instead of physical deliveries.
- Government needs to quicken the pace of IT investment in e-governance initiatives.

- IT penetration in many verticals significantly lags behind international benchmarks in areas like insurance, education, healthcare and travel. The government sector has to pay attention to this fact and ensure that IT penetration in these areas goes up to the prevailing international benchmarks.
- Government has to create a regulatory environment which provides incentives to government organizations or PSUs adopting IT practices or units encouraging use of IT practices.

References:

1. "Extending India's leadership of the global IT and BPO Industries"- NASSCOM-Mckinsey Report 2005, published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp 45-68.
2. "Indian IT/ITES Industry: Impacting Economy and Society 2007-08" – A NASSCOM- Deloitte Study- Published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp 103-123.
3. "Location roadmap for IT-BPO growth: Assessment of 50 leading cities"- An AT Kearney & NASSCOM Study (2008) - published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, extracts relating to e-governance in India.
4. "Strategies to Achieve Indian IT Industry's Aspirations"- NASSCOM-Mckinsey Report 2005 published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-21-34.
5. The IT Industry in India- Strategic Review 2008 – Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-78-82.
6. The IT Industry in India- Strategic Review 2007 – Report published by National Association of

- Software and Services Companies (NASSCOM), New Delhi-21, Pp-89-96.
7. The IT Industry in India- Strategic Review 2006 – Software & IT Services, IT Enabled Services, Hardware & Peripherals, Telecommunications, Internet- report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-42-49.
8. The IT Industry in India- Strategic Review 2005- Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-67-89.
9. The IT Industry in India- Strategic Review 2004- Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-161-173.
10. The IT Industry in India- Strategic Review 2003- Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-88-96.
11. The IT Industry in India- Strategic Review 2002- Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-132-154.
12. The IT Industry in India- Strategic Review 2001- Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-133-138.
13. The IT Industry in India- Strategic Review 2000- Report published by National Association of Software and Services Companies (NASSCOM), New Delhi-21, Pp-45-52.
14. www.mit.gov.in retrieved and accessed on March 20, 2011.
- <http://www.expresscomputeronline.com> retrieved and accessed on March 20, 2011.
-

Medical Tourism in India- A Study

Mohammad Khalil Ahmed*

Abstract

Medical tourism is a term initially given by travel agencies and the mass media to describe the rapidly-growing practice of traveling to another country to get health care. According to Mary Tabacchi, Medical Tourism is any kind of travel to make yourself or a member of your family healthier. More recently the phrase "Global Healthcare" has emerged, and may replace the earlier terms. Such services basically include elective procedures as well as complex specialized surgeries such as joint replacement (knee/hip), cardiac surgery, dental surgery, and cosmetic surgeries. The agent and customer use informal channels of communication-connection-contract, with less regulatory or legal oversight to assure quality and less formal recourse to reimbursement or redress, if needed. Holiday aspects mainly associated with travel and tourism may be included on such medical travel trips. In a country like diverse India, the health care industry has capitalized on its rich cultural resource and glorious past. India has the most proficient doctors, world class medical amenities and with most competitive charges for treatment, it's a very lucrative destination for people like to undergo treatment of certain medical problems.

The paper focuses at the emergence of the medical tourism as a booming industry, opportunities and challenges and the key management aspects that will help India establish "India as a hub of Health Care Destination".

Keywords : Health Tourism, Tourist, Medical Insurance, Health Care.

1. Introduction

Health is wealth! Without sound health we cannot achieve anything in our life, nor enjoy whatever we have. In service sector the concept of Medical Tourism, which is catching up at lightning speed across the world. The ultimate concept of medical tourism is a tour to surrounding destination, medical treatment and savings. People from advanced countries, including the United States

and Europe, see a benefit in travelling to developing third world countries, like India, Thailand, Philippines, South Africa, etc. while combining medical treatments with inexpensive vacation. The emergence of the medical tourism as a booming industry and the key management aspects that will help India establish as Health Care Destination. The total expenditure on health by the Centre and States together is only 1 percent of GDP. We

*Associate Professor, HOD (Commerce) in Burhani College of Commerce & Arts, Mumbai,
Email id: khalila8@gmail.com.

should raise it to 2-3 percent in 2012, and 25 percent in 2020.

Tourism is traveling for predominantly recreational or leisure purposes or the provision of services to support this vacation travel. The World Tourism Organization defines **tourists** as people who “travel to and stay in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited”. Globally, Tourism has become a popular universal leisure activity. In 2009, there were over 942 million international tourist arrivals. Tourism is subdivided into:

- Leisure Tourism Pilgrimage
- Health Tourism
- Winter Tourism Mass Tourism

2. Aims and Objectives of the Study

1. Make a comparative study of the participation of medical tourists from different countries
2. Find the factors that drive Medical Tourism in India.
3. Study the marketing efforts and their success for Medical Tourism in India.
4. Identify the prospects and problems faced by Medical Tourism in India.
5. Make suitable suggestions for improvement of Medical Tourism in India.

3. Methodology: secondary data:

The secondary data consisted of books and other sources of information.

It must be considered that the industry is still in its infancy and hence no reliable data is available. Additionally in some of the medium sized and bigger hospitals, the doctors and administrators are not willing to speak about it since a divorce exists between the doctors and the tour operators who organize the trip.

3.1 Sampling Design

The Population of the study consisted of Hospitals engaged in catering to Medical Tourism with minimum 200 beds offering services in modern medicine in different states of India.

4. Literature Review

Currently medical tourists or medical travelers from developed industrialized countries are traveling in large numbers abroad where the quality of healthcare is equal to or even better than the standards in their own country and yet the cost is significantly lower. These healthcare destination countries also offer numerous options for escapes to vacation touring trips, sight-seeing, shopping, exploring journeys and lounging on sun drenched exotic beaches for medical health care travelers. A blend of many factors has led to the recent boost in the popularity of medical tourism or Medical value travel. The main demand for medical tourism is generated from millions of Indians who live abroad, though a growing number of foreigners are also keen on speedy and in expensive treatment. They are influenced by two important facts: India now has many world-class private hospitals and Indian doctors have experience in abundance. Owing to India's prodigious population, the strengths in health care sector is doctors treat twice the number of patients in comparison to doctors in the west, domestic aviation has been opened to the private sector, foreign investments are encouraged and a number of incentives are in place. India is considered as a safe destination compared to other countries Foreigners are visiting India for serious medical help as well as rejuvenation therapies and other specific purposes. Excessive cost of basic health care and medical insurance cover, high cost of modern medical facilities in advanced countries, ease and affordability of international travel, favorable currency exchange rates in the global economy, rapidly improving technology and high standards of medical care in the developing countries, best medical health care education at the medical schools, proven safety of healthcare in select foreign nations, international accreditation of

foreign hospitals and access to U.S., UK and Australian board certified surgeons operating in select foreign countries have all contributed their share to this rapid development of global medical tourism or medical health care outsourcing. Health care tourism has also emerged as a most liked form of vacationing mixing a broad spectrum of overseas medical health care services with leisure, a visit to health care resort or a health SPA abroad, fun and relaxation together thereby maximizing the value of vacation travel abroad, a holiday retreat with wellness and health care.

4.1 Medical Tourism Destinations

The medical tourism market consists of a rising number of countries competing for patients by offering

a wide variety of medical, surgical, and dental services (Table 1). Majority of these destinations boast modern facilities with advanced technology and appealing accommodations. A considerable number of the physicians in medical tourism destinations received postgraduate training in industrialized nations, have board certification (or equivalent), and may have practiced in the country where they completed their training. Medical tourists are presently traveling to distant countries for cosmetic surgery, dental procedures, bariatric surgery, assisted reproductive technology, ophthalmologic care, orthopedic surgery, cardiac surgery, organ and cellular transplantation, gender reassignment procedures, and even executive health evaluations (Table 2).

Table 1. Medical Tourism Destinations*

Asia/Middle East	The Americas	Europe	Africa	Other
China	Argentina	Belgium	South Africa	Australia
India	Brazil	Czech Republic	Tunisia	Barbados
Israel	Canada	Germany		Cuba
Jordan	Colombia	Hungary		Jamaica
Malaysia	Costa Rica	Italy		
Singapore	Ecuador	Latvia		
South Korea	Mexico	Lithuania		
Philippines	United States	Poland		
<u>Taiwan</u> [†]		Portugal		
Turkey		Romania		
United Arab Emirates		Russia		
		Spain		

*Source: Most frequently identified countries in literature and Internet search.

[†] Taiwan seeks to become a destination for Chinese-speaking patients.

Table 2. Procedures for Which Patients Pursue Medical Tourism*

Cosmetic Surgery	Breast augmentation/mastopexy/breast reduction Facelift/blepharoplasty Liposuction/body contouring
Dentistry	Cosmetic dentistry Dental reconstruction/prostodontics
Cardiology and Cardiac Surgery	Coronary artery bypass Cardiac valve replacement/reconstruction Percutaneous coronary angioplasty /stenting Stem cell therapy for heart failure
Orthopedic Surgery and Spine Surgery	Hip replacement/resurfacing Knee replacement Arthroscopy/joint reconstruction Laminectomy /spinal decompression Disk space reconstruction/disk replacement
Bariatric Surgery	Gastric bypass Laparoscopic adjustable gastric banding Body contouring subsequent to massive weight loss
Reproductive System	In vitro fertilization Hysterectomy Prostatectomy/transurethral resection Gender reassignment procedures
Organ and Tissue Transplantation	Solid organ transplantation -Renal -Hepatic Bone marrow transplantation Stem cell therapy - heart failure -Neurologic diseases
Other Services	LASIK eye surgery General medical evaluation/checkup Wide range of diagnostic studies

1. Healthcare facilities in India-at a glance

India has always been a regional health care centre for the medical tourists from the bordering countries like Afghanistan, Bangladesh, Pakistan, Nepal, Bhutan, UAE and Maldives ; recently India has emerged as one of the most vital Global destination for medical tourism. Now global patients from the developed countries like USA, Canada, UK, Europe etc., travel to India for the low-

cost medical surgery treatments like knee joint replacement, total hip replacement, hip resurfacing, weight loss procedures- gastric lap band, RNY gastric bypass, heart procedures, elective surgeries and also for rejuvenation therapies promised by yoga and Ayurveda. However, a nice mix of top-class medical expertise at attractive prices is helping more and more corporate hospitals in India to tempt global foreign patients for high end surgeries like organ transplants.

India is exploring the possibilities of extending its healthcare facilities to cater to its one billion plus population. India has around 180,000 hospitals out of which 1,60,000 are primary healthcare centres. India has a three layer system. Layer 1 hospitals provide super specialty healthcare services, for example, Cardiac surgery, Surgery Tumour Removal, Organ Transplantation etc. They are located in metros and state capitals, around 70-80 per cent of Layer 1 hospitals have around 250-300 beds. Layer II hospitals are general hospitals, which do not conduct super-specialty surgeries. They are generally present in State Capitals and other important cities in each state where there is negligible presence of layer I hospitals. Layer II hospitals usually have a bed strength ranging anywhere between 50-100 beds. Layer III is normally 5-25 bed hospitals which are more popularly termed as nursing homes in India. They may have a small ICU with very basic instruments and a minor OT attached for very basic procedures. In big cities, they play a key role in treating patients with minor ailments, which do not need surgical intervention or advanced care. On the contrary, in small towns they perform the same roles which layer II hospitals perform in the bigger towns and cities, namely, to stabilize patients with serious conditions and then transfer them to layer I hospitals for advanced treatment. Health services will also have to deal with an increase in the chronic and lifestyle-related conditions associated with rising incomes and greater longevity.

In India, 80-85 per cent of the health care spending is borne by the patient; 12-15 per cent by the government and a mere 2-3 per cent by the insurance sector. Owing to poor support from the government, Indian market is completely controlled by the private sector making it very price sensitive.

Since more and more patients from Europe, North America and other affluent nations with very high medical costs and long wait lists look for effective options of immediate, low-cost, affordable treatments, medical health care travel to India is definitely on the cards for most of them and the fast growing Indian corporate health sector is fully geared to meet that need. In India medical tourism is not just cost savings or the high standard of medical care facility, but also the waiting time for medical surgery treatment procedures is much lower than in any other country. India offers a growing number of private centres of excellence where the quality of care is as good as or better than that of big-city hospitals in the United States or Europe. The health care sector in India has seen an enormous growth in infrastructure in the private and charitable sector. The private sector, which was very modest in the early stages, has now becoming a flourishing industry equipped with the most modern state of the art technology at its disposal. It is estimated that 75% of healthcare services and investments in India are now provided by the private sector. Health tourism is perceived as one of the fastest growing segments in marketing destination India today. India could earn \$2 billion annually and create 60 million new jobs by subcontracting work from the British National Health Service, the head of India's largest chain of private hospitals. This industry according to CII is expected to be worth US\$ 4billion by 2017. India has a capacity to attract 1 million health tourists per annum which will contribute US\$ 6 billion to the economy. Cost Advantage is the attractive aspect of Indian modern medicine which is 10-15 times lower than anywhere in the world. The CII-McKinsey report suggests that medical tourism could fetch as much as \$2 billion by 2012, compared to an estimated \$ 333 million in 2009-10.

Table 3: an overview of health tourism

Country	No.of foreigners treated last yr.	From	Money earned	Strengths
Thailand	973,532	South Asia, middle east, the US	\$675mn	Cosmetic surgery, organ transplants, dental treatment, joint replacement.
Jordan	130,000	Middle east, America	\$600mn	Organ transplants, Fertility treatment, cardiac care.
India	150,000	Middle east, Bangladesh, Europe nations	\$33mn	Cardiac care, Joint replacement, Lasik.
Malaysia	129318	Indonesia, Vietnam, west Asia, and Japan	\$27.63mn	Cosmetic surgery
South Africa	50,000	US, UK	N.A	Cosmetic surgery, Lasik, Dental treatment
Cuba	N.A.	Latin America	\$25m-50m	Specialist niche treatment, vitiligo, night blindness, cosmetic surgery

NA. not available

Table 4: Tourism in India

Year	Tourists Arrivals to India	Tourists Arrivals At Global	Percentage share of India
1994	18,86,433	550.3	0.34
1995	21,23,683	564.4	0.38
1996	22,87,860	597.4	0.38
1997	23,74,094	618.2	0.38
1998	23,58,629	626.7	0.38
1999	24,81,928	650.0	0.38
2000	26,41,157	698.3	0.38

Source: Market Research Division, Dept. of Tourism, Govt. of India

India is unique as it offers holistic healthcare addressing the mind, body and spirit, with yoga, meditation, ayurveda and other Indian systems of medicine. India offers a huge range of services combined with the cultural warmth that is difficult to match by other countries.

5.1 Promotion of Medical Tourism

The main “selling points” of the medical tourism industry are its “being cheaper” and its blend with the attractions of tourism. The slogan, thus is, “First World

treatment’ at Third World prices”. The cost difference across the board is huge: only a tenth and sometimes even a sixteenth of the cost in the West. Open-heart surgery could cost up to \$70,000 in Britain and up to \$150,000 in the US; in India’s best hospitals it could cost between \$3,000 and \$10,000. Knee surgery (on both knees) costs 350,000 rupees (\$7,700) in India; in Britain this costs £10,000 (\$16,950), more than twice as much. Dental, eye and cosmetic surgeries in Western countries cost three to four times as much as in India.

India’s travel and tourism is expected to generate Rs. 1,846.3 billion (US\$ 38.8 bn) of economic activity (Total Demand) in 2004 growing (nominal terms) to Rs. 7,027.7 billion (US\$ 90.4 bn) by 2014. Travel and tourism demand is expected to grow by 8.8 per cent per annum in real terms between 2004 and 2014.

5.2 Employment

The Indian travel and tourism economy employment is estimated at 24,456,600 jobs in 2004, 5.6 per cent of total employment, or one in every 17.8 jobs. By 2014, this should total 27,790,000 jobs. 5.7 per

cent of total employment or one in every 17.5 jobs. The 11,404,000 travel and tourism industry jobs account for 2.6 per cent of total employment in 2004 and are forecast at 12,441,200 jobs or 2.6 per cent of the total by 2014.

5.3 Gross Domestic Product

India’s travel and tourism industry is expected to contribute 2.0 per cent to Gross Domestic Product (GDP) in 2004 (Rs. 618.4 billion or US\$ 13.00 billion), rising in nominal terms to Rs. 2,002.3 billion or US\$ 25.8 billion (2.1 per cent of total) by 2014. The travel and tourism economy contribution (percent of total) should rise from 4.9 per cent (Rs 1,477.4 billion or US\$ 31.1 billion) to 5.2 per cent (Rs 4,972.5 billion or US\$ 64.0 billion) in this same period.

5.4 Capital Investment

India Travel & Tourism capital investment is estimated at Rs. 485.3 billion, US\$ 10.2 billion or 7.2 % of total investment in year 2004. By 2014, this should reach Rs 1,663.9 billion US\$ 21.4 billion or 7.8 % of total.

Price Comparison of India and U.S. And U.K.

Treatment	Approximate Cost in India(\$)*	Cost in other Major Healthcare Destination (\$) *	Approximate Waiting Periods in USA / UK (in months)
Open heart Surgery	4,500	> 18,000	9 - 11
Cranio-facial Surgery and skull base	4,300	> 13,000	6 - 8
Neuro-surgery with Hypothermia	6,500	> 21,000	12 - 14
Complex spine surgery with implants	4,300	> 13,000	9 - 11
Simple Spine surgery	2,100	> 6,500	9 - 11
Simple Brain Tumor-Biopsy -Surgery	1,000 4,300	> 4,300 >10,000	6 - 8
Parkinsons -Lesion-DBS	2,100 17,000	>6,500 >26,000	9 - 11

*these costs are an average and may not be the actual cost to be incurred.

5.5 Personal and Business Travel Tourism

India Personal travel and tourism is estimated at Rs 927.3 billion. US\$ 19.5 billion or 5.0 per cent of total personal consumption in year 2004. By 2014, this should reach Rs 3.612.9 bn. US\$ 46.5 billion or 6.1 % of total consumption. India Business Travel is expected at Rs 114.5 billion, US\$ 2.4 billion in year 2005. By 2014, this should reach Rs 387.4 billion or US\$ 5 billion.

5.6 Export

Visitor Exports play an important development role for the resident travel and tourism economy India travel and tourism is expected to generate 6.7 per cent of total exports (Rs 283.2 billion or US\$ 6.0 billion) in 2004, growing (nominal terms) to Rs 1,267 billion or US\$ 16 billion (5.4 per cent of total) in 2014.

5.7 Indian medial tourism- Challenges:

1. Poor coordination between the various players in the industry- hospitals, air line operators, and hotels.
2. No strong government support or initiative to promote medical tourism
3. Customer view as an unhygienic country.
4. Lack of suitable regulatory system for hospitals.
5. Lack of consistent pricing policies across hospitals.
6. Tough rivalry from countries like Thailand, Malaysia, and Singapore.
7. Lack of global certification.
8. Many insurance players do not cover overseas medical care.
9. Low-investment in health infrastructure.

Opportunities

The following are opportunities in medical tourism.

- Increased demand for healthcare services from countries with aging population (US, UK)
- Fast-paced life style increases demand for wellness tourism and alternative cures.

- Shortage of supply in National Health Systems in countries like UK, Canada.
- Demand from countries with underdeveloped healthcare facilities.
- Demand for retirement homes for elderly people especially Japanese.
- Personal touch by the doctors in India.
- Traffic system is well developed and easy to go from one country to another country.
- Medicines and lab our cost is low as compared to developed countries.

5.8 Suggestions:

After going through the above, what could be the wish list of a common man for making medical tourism a big success for India? Some of these are summarized below:

- Let there be an identical agency like NAASCOM for medical tourism to periodically come out realistic reports for bettering the services in the days to come.
- From the earnings of medical tourism - a thorough study need to be done by involving the experts.
- The rates charged or services offered could be further subsidized so that people from different parts of the world throng to our hospitals for getting timely, immediate and quality care all at an affordable cost so that at least by word of mouth the message gets well spread across different sections of the societies.
- ESI hospitals too can join this race by selectively opening up their doors so that their income gets a big boost, which could be optimally utilized for bettering the services from all angles benefiting the registered care seeker.
- Let our foreign consulate offices act as ambassadors for promoting medical tourism to get this business a big boost.

- Let there be innovative schemes by targeting medical tourists so that they return back with great feeling of comfort, satisfaction and joy.
- Let there be more and more infrastructure avenues opened up so that consultants can join the fray for bringing in world class quality treatment facilities, all under one roof.
- Let our doctors who are serving out of India and willing to come back be encouraged to the fullest for doing their best to give a big push to this trade.
- More and more top class colleges are set up in the country, with foreign collaboration, so that aspiring students lovingly join this profession to earn their degree (doctorate) for serving the society and mankind.
- Before, concluding, let's hope our country's overall infrastructure moves fast on issues like good quality roads, international airports, best of the five star / three star hotels at affordable rates, best pick up and return conveyance, sightseeing points made more visible and attractive and customer care from start to finish is of the highest order.
- Lastly, let's hope our GDP do get a boost of at least 5 per cent and more in the near future so that the economy keeps growing at a fast rate.

1. Conclusion :

The medical tourism industry offers high potential for India primarily because of its inherent advantages in terms of cost and quality. With regard to quality of the service, we stand shoulder-to-shoulder with the best hospitals in the us. For medical tourists coming from abroad there is value proposition in terms of costs and quality. Moreover, India as unique as it offers holistic medicinal services with yoga, meditation, ayurveda, allopath and other medical facilities; we offer a unique basket of services to an individual that will be difficult to match in other countries. For Indian healthcare institutions, the quality of service is over biggest USP, followed by the cost advantage.

However, the competition is getting heated up and the success in future will largely be determined by development and implementation of a joint strategy by various players in the industry. India is emerging as an attractive, affordable for healthcare but there are some challenges that the country has to overcome to become a tourist destination with competent health care industry. The government should step in the role of a regulator and a facilitator of private investment in healthcare. An apex body for the industry needs to be formed to promote the India brand abroad and aid inter-sectoral coordination. Joint ventures with overseas partners and establishment of MEDICITIES will help India in building a significant advantageous and leadership position in the industry.

The road map ahead is simple, we have to act smart here, and first, we have to create more information outlets in various markets. Second, Indian healthcare industry should work more closely with the industry chambers and various government departments to spread the awareness and remove hurdles. Finally, we have to work towards getting accreditation for various hospitals to build up perception of quality among foreign tourists.

References :

- Appleby J, Schmidt J(2006). *Sending patients packing*. USA Today. July, 26.
- Arnold K(2010), *Going under the knife abroad: medical tourism industry booms as health costs rise*, The Monitor (McAllen, Texas). November 15,
- Baliga H (2006), *Medical tourism is the new wave of outsourcing from India*. India Daily. December 23,.
- Hancock D(2006), *The Complete Medical Tourist — Your Guide to Inexpensive Cosmetic, Medical and Dental Surgery Abroad*, John Blake Publishing,London, UK:
- Konrad W(2007), Employers make a push for 'medical tourism'. CNNMoney/Fortune Small Business Web site. May 15.
- MacReadyN(2007), *Developing countries court medical tourists*, Lancet,369:1849-1850.

Mohammad Khalil Ahmed

Department of Tourism (2000), *Tourism Policy: Vision 2020*, Government of Kerala.

Farrugia, Joseph (2006), *Medical Tourism—What Prospects?*, *The Times*, May 31.

Pruthi, Raj(2006), *Medical Tourism in India*, Arise Publishers and Distributors, New Delhi.

Puri, Narottam (2003), *Health Tourism*, Paper presented at FICCI Seminar on Medical Tourism, 11th December,

The Economic Times (India) (2005), *Great Indian hospitality can be biz too*. July 29,

Magazines :

“The Health Travellers”, *Business World*, 27th Dec, 03

“The Clinic is Filling up”, *India Today*, 24th Nov, 04

“Medical Tourism: Hospitality Industry”, *Outlook Money*, 15th July, 04

Websites :

CII, FICCI, WHO, Mac Kinsey etc. <http://medicaltourism.ca/medical-tourism-india.html>

<http://www.aseancanada.com/Medical%20Tourism.html>

http://en.wikipedia.org/wiki/Medical_tourism.

<http://www.kerala-travel-tours.com/medi>

Power Sector in Maharashtra

Sunil S. Shete, Riteshkumar Singhal

Abstract

This paper deals with the power sector of the state of Maharashtra. This paper discusses the shortage of power in the state even after some reforms were initiated in the sector. Power generation is very important for the state if it wants to remain as one of the top industrial states in India.

Keywords: Environmental Issues, Jaitapur Nuclear Power Project, Load Shedding, Maharashtra State Electricity Board, Power Sector, Power Transmission, Power Tariffs.

Introduction

When India became independent in 1947, the country had a power generating capacity of 1,362 MW. Generation and distribution of electrical power was carried out primarily by private utility companies. Power was available only in a few urban centres. After 1947, all new power generation, transmission and distribution in the rural sector and the urban centres (which was not served by private utilities) came under the purview of State and Central Government agencies. State Electricity Boards (SEBs) were formed in all the states.

As per India's Constitution, power industry is the combined responsibility of the Central Government and the State Governments. The ESA (Electricity Supply Act) envisaged three kinds of entities in the power-sector: State Electricity Boards (SEBs), Generating Companies, and Licensees. SEBs are allowed to generate, transmit, and distribute electricity within a state, they enjoy all the powers of a licensee.

Generating Companies are responsible for supplying power to the grid without the specific responsibility of retail distribution. Major players in this category are NTPC (National Thermal Power Corporation), NHPC, and NPCIL (Nuclear Power Corporation of India Limited). Though ESA allowed only the governments to set up generating companies till 1991, thereafter it was de-reserved. Independent Power Producers (IPPs) now fall under this category. Existing Licensees are private-sector utilities licensed by a State Government for power generation, distribution, or both within a specified area.

Maharashtra State Electricity Board (MSEB)

In 1948, the Electricity Supply Act was enacted, leading to the establishment of State Electricity Boards (SEBs). These SEBs took over the licensees operating in the private sector and enlarged the customer base by bringing in rural areas under their operation. Almost after three decades, the Government of India established

-
1. Associate Professor in Commerce, Sydenham College of Commerce & Economics, Churchgate, Mumbai-20
Email : sunilshete05@rediffmail.com
 2. Assistant Professor in Economics, Sydenham College of Commerce & Economics, Churchgate, Mumbai-20
Email : singhalriteshkumar@yahoo.com

entities like NTPC and NHPC. Over the years, in contrast to the well-functioning central entities, the SEBs showed signs of sickness. Some of the reasons for disastrous performance of SEBs are the increasing gap between the tariff and cost, sub-optimal capital structure, low plant load factor (PLF), high transmission and distribution (T&D) losses, and insufficient capital expenditure.

MSEB was set up in 1960 to generate, transmit and distribute power to all consumers in Maharashtra excluding Mumbai. MSEB was the largest SEB in the country. The generation capacity of MSEB has grown from 760 MW in 1960-61 to 9771 MW in 2001-02. The customer base has grown from 1,07,833 in 1960-61 to 1,40,09,089 in 2001-02. It was one of the first SEBs to have achieved 100% village electrification. It has the largest Transmission & Distribution (T&D) network in the country. The energy sale has grown from 346 MU in 1960-61 to an estimated 37,067 MU in 2001-02.

Predominance of social objectives has led to a lack of commercial orientation in the power sector. Tariffs for domestic, power looms and agricultural segments are lower than the average cost of supply of power, and are subsidized by industrial and commercial consumers. The distorted tariff structure led to an increase in high-paying industrial consumers setting up their own captive generating stations. While consumption of power from the MSEB grid by high-paying industrial consumers has been on the decline, consumption by subsidized consumer categories has grown over the past few years. Further, the low tariff for subsidized consumers has not only led to lower revenues, but also to sub-optimal consumption from these consumers. By the year 2001-2002, the T&D losses were high at about 39.4%. The loss levels were not accurately measurable since only about 85% of consumers were metered. The T&D losses can be categorized as technical losses and commercial losses. Technical losses are due to energy loss in the conductors and equipments used in the system for transmission and distribution of power. The commercial losses are mainly due to theft and defective meters.

Need for Reforms

There is unmet demand for new connections as well as shortage of power to existing consumers mainly during peak hours. MSEB has estimated that the energy requirement will increase from 59295 MU in 2001-02 to 87262 MU in 2011-12 and peak demand from 9893 MW in 2001-02 to 14104 MW in 2011-12. This would necessitate further investments in generation sector. In addition, it is essential to modernize and expand the transmission and distribution system. The sector also needs to keep up with technological developments.

The reforms were to be brought in such a manner so that all the stakeholders benefit from the reforms by:

- a) To promote the development of an efficient, commercially viable and competitive power sector.
- b) To provide reliable quality and uninterrupted supply, at reasonable prices, to all consumer categories.
- c) To ensure that the social and environmental aspects are fully taken into consideration.

MSEB was restructured in order to promote and encourage efficiency, autonomy and accountability in decision making and functional specialization. In accordance with Electricity Act 2003 of Government of India ((Maharashtra State Govt.vide G.R.No. ELA-1003/P.K.8588/Bhag-2/Urja-5 Dated 24-01-2005)), the Maharashtra State Electricity Board was restructured into 4 companies from 6th June 2005. These companies were registered with Company Registrar, Mumbai on 31st May 2005 as follows:

1. MSEB Holding Company Limited.
2. Mahagenco (Maharashtra State Power Generation Company Limited (MSPGCL))
3. Mahatransco (Maharashtra State Electricity Transmission Company Limited (MSETCL))
4. Mahavitran (Maharashtra State Electricity Distribution Company Limited (MSEDCL))

Mahagenco is engaged in the business of generation and supply of electricity and has been vested with generation assets, interest in property, rights and liabilities of MSEB. Mahatransco as on March 31, 2010 owns and operate a vast transmission network of 37133 CKm. of electrical transmission lines, 520 EHV substations with 73791 MVA transformation capacities at 6 EHV levels from 66 KV to 400 KV. This infrastructure consists of inter-regional as well as intra regional electric power transmission system in Maharashtra State and carries electric power across the same. Mahavitaran is responsible for distribution of electricity throughout the state by buying power from either MSPGCL, captive power plants or from other state electricity boards and private sector power generation companies. MSEDCL supplies electricity to a staggering 1.86 crore consumers across the categories all over Maharashtra excluding the island city of Mumbai.

The holding entity MSEB Holding Company holds all the stake in the other three companies.

Maharashtra Electric Regulatory Commission (MERC)

The MERC was established on August 5, 1999 under the Electricity Regulatory Commission Act, 1998, a Central Act which was super ceded by Electricity Act (EA), 2003. The Commission is continued as provided under Section 82 of the EA, 2003. The Act was mandated to promote competition, efficiency and economy in the power sector and to regulate tariffs of power generation, transmission and distribution and to protect the interests of the consumers and other stakeholders in Maharashtra.

Energy Scenario of Maharashtra

Maharashtra is the largest power generating state in India with the largest electricity system capacity. The main source of power generation in Maharashtra is fossil fuels such as coal and natural gas. A little is being contributed by the hydro and nuclear energy sources. Fuel-wise installed capacity in Maharashtra is given below.

Sl.No.	Fuel	Capacity, MW	In per cent
1.	Coal	9,414	61.9
2.	Natural Gas	2,224	14.6
3.	Hydro	2,874	18.9
4.	Wind	399	2.6
5.	Nuclear	297	2.0
Total		15,208	100

Source: Ministry of Power, Annual Report 2002-03.

As per the above table, fossil fuels viz. coal and natural gas constitute 76.5 percent of the total installed capacity and hydro comprise only 18.9 per cent. In the above table, share from other sources such as cogeneration is not included due to their small contribution.

Electrical Energy Utilisation Pattern for Maharashtra during 2001-02

CATEGORY	MUs	In per cent
Industrial	17,435.1	37.58
Agricultural	87,30.2	18.82
Street Light	648.0	1.40
Domestic	11,901.1	25.65
Commercial	4,393.1	9.47
Railways	1,639.5	3.53
Miscellaneous	1,590.8	3.43
Interstate	62.4	0.13
Total	46,400.2	100.00

Source: Ministry of Power, Annual Report 2002-03.

The above table shows the category of energy utilisation in the state of Maharashtra. Industries constitute the largest category of energy utilisers followed domestic consumption and agricultural sector.

Growth in the Energy demand in Maharashtra

In the 16th Electric Power Survey, the CEA has projected an average growth rate of 5.9 per cent for the period ending 2017 for Maharashtra.. Details of energy growth and capacity requirement up to the end of 12th Five Year Plan is given below.

Plan Period	2001-02	2006-07	2011-12	2016-17
Energy requirement (MkWh)	79,593	1,06,892	1,42,911	1,90,167
Peak Load (MW)	12,472	16,716	22,348	29,738
Growth Rate (per cent)	7.43	6.03	5.98	5.88
Average growth rate (%)			5.95	

Source: 16th Electric Power Survey

The above table shows the energy requirement for Maharashtra and the growth rate of energy. The average growth rate is 5.95%.

Power Shortage

In September 2009, Maharashtra had been experiencing a gap of around 4,000 MW between demand and supply. Therefore, load shedding ranging from 10 to 12 hours in rural areas had been resorted.

According to the Business World edition of 28th April 2010, Maharashtra faces a power shortage of 2609 million units (MU). These shortages have consistently led to load shedding in the state of Maharashtra. The demand for electricity is going to increase. With modernization and urban life style gaining prominence in India there is more and more demand for electronic products in households, opening up of malls, multiplexes, hypermarkets will only increase the demand for power.

There are environmental issues when it comes to setting up of new power plants. Environment concerns

are very important because development has to be sustainable. Unchecked development can play havoc with the natural environment which can have adverse impact on our planet.

Maharashtra has already seen in the 1990s the controversy of Enron project. Many protests were led against this project.

During summer season, load shedding becomes a constant feature for people in Maharashtra. Rich and upper class people can buy generators and inverters. But even though it may light up few homes but is the electricity generated through such sources cheaper? Definitely not. Constant working of generators causes not only noise but also air pollution. In many parts cellular mobile phone towers work on such generators because of shortage of electricity and thereby cause air pollution. People have to adopt a pragmatic approach towards new power plants coming up in Maharashtra. The one example we can take is of Jaitapur Nuclear Power Project coming up in Maharashtra which is facing opposition.

Jaitapur Nuclear Power Project is a new proposed 9900 MW power project of Nuclear Power Corporation of India (NPCIL) at Madban village of Ratnagiri district in Maharashtra. It will be the largest nuclear power generating station in the world by net electrical power rating once completed. French nuclear engineering firm Areva S.A. and Indian state-owned nuclear operator NPCIL have signed this agreement of about \$9.3 billion. Some other big power projects are: Adani Power’s project at Tiroda in Gondia, Tata Power Company’s project at Shahpur in Raigad and NTPC’s project at Phatetewadi in Solapur.

Challenges to the New Players

The reforms in the power sector in India has given rise to new opportunities for the private sector especially in the power generation space. As a result, there have been a plethora of new projects announced by the private sector companies. The new entrants in this sector face a

number of challenges relating to the project execution, fuel security, power equipment capacities, infrastructure constraints, etc.

Power to all by 2012

In keeping with the national agenda of power to all by 2012, Maharashtra needs to plan a massive capacity addition programme so that by 2012 Maharashtra will be a power surplus State.

Conclusion :

Reforms in the power sector are welcome. The government as well as people should understand that without adequate power generation capacity, Maharashtra's industrial and social progress will come to a halt. Today there is a fierce competition among all states for growth and development. There is a high growth rate in states like Bihar, Uttrakhand and Jharkhand, who traditionally had slow growth. If power

generation issues are not addressed quickly in Maharashtra it may be a matter of time that these states of India may soon become the dark horses of India.

References :

1. KPMG, (2010) Power Sector in India, White Paper on Implementation, Challenges and Opportunities, *Energy Summit*, Nagpur - January.
2. http://www.businessworld.in/bw/2010_04_28_
3. <http://economictimes.indiatimes.com>
4. <http://maharashtra.gov.in/white%20paper%20final%20aug%2027.htm> for year 2002.
5. http://en.wikipedia.org/wiki/Jaitapur_Nuclear_Power_Project
6. Ministry of Power, Annual Report 2002-03, Government of India.
7. 16th Electric Power Survey, Government of India

Prospects of Forensic Accounting in India

Ashfaque Karim*

Abstract

Forensic accounting is a newly developing field in Accounting. This is different from the auditing function as auditor is defined as a watchdog and is not expected to uncover well laid out frauds. While a forensic accountant can be describes as a 'Bloodhound' who will detect well planned and executed frauds and trials of monetary transactions. Forensic accountants are accepted as expert witness in all courts of law. Accounting and management students in India are sent into the market without any idea of forensic accounting. There is huge scope for persons trained in Forensic accounting techniques in India. This paper presents an overview of the various stake holders in development of Forensic Accounting Services in India.

Key Words : Accounting, Auditing , economic crimes ,Forensic, Frauds, Investigative Accounting, Litigation Support.

1 What is Forensic Accounting?

The integration of accounting, auditing and investigative skills yields the speciality known as Forensic Accounting."Forensic", according to the Webster's Dictionary means, "Belonging to, used in or suitable to courts of judicature or to public discussion and debate". Forensic Accounting provides an accounting analysis that is suitable to the court which will form the basis for discussion, debate and ultimately dispute resolution. Forensic Accounting encompasses both Litigation Support and Investigative Accounting. Hence George Manning defines Forensic Accounting as "The science of gathering and presenting financial information in a form that will be accepted by a court of jurisprudence against perpetrators of economic crimes."

Forensic Accountants are trained to look beyond the numbers and deal with the reality of the situation. This is different from the auditing function as auditor is defined as a watchdog and is not expected to uncover well laid out frauds. While a forensic accountant can be

describes as a 'Bloodhound' who will detect well planned and executed frauds and trials of monetary transactions.

2 Need of Forensic Accounting in India

Accounting and management students in India are sent into the market without any idea of forensic accounting. In such case, they are more likely to be the victims of the financial frauds. At times even the finance professionals and the auditors become the vehicle of the bigger financial scams as witnessed in the case of Satyam (Sanskrit Word for Truth!), the biggest fraud in Indian history.

There is huge scope for persons trained in Forensic accounting techniques in India. Forensic Accounting is largely untrodden area in India. It is a need of the Indian Industry which has until now not been addressed by the Indian Universities.

Let us now have an overview of the various stake holders in development of Forensic Accounting Services in India.

*Assistant Professor in the Department of Accounts, Rizvi college of Arts, Science & Commerce
Email : ashfaquekarim@gmail.com

2.1 Public and Forensic Accounting Services

Financial frauds affect the general public in two ways: Direct and Indirect. Examples of direct frauds include Fraudulent investment schemes, Fraudulent schemes of securing employment abroad, etc. As for the indirect effect all members of the society are victims of financial crimes committed against Banks, Insurance Companies, Government Authorities, etc. as the cost to recover the frauds are added to the prices the common people pay on goods and services every day. Apart from these crimes which can be quantified there is no quantification as well as compensation for the emotional and social harms done to members of a society by the financial criminal acts.

2.2 Government authorities and Forensic Accounting Services

In addition to banks, insurance companies, lawyers, stock markets and the general businesses in the private sector, the Regulators in India that would require forensic accounting services in years to come for protecting government revenue can be listed as follows:

- Security Exchange Board of India
- Central Bureau of Investigation
- Criminal Investigation Department
- Economic Offences Wing
- Insurance Regulatory and Development Authority
- Directorate of Revenue Intelligence
- Income Tax department
- Sales Tax department
- Central Vigilance Commission
- Central Information Commission
- Comptroller and Auditor General of India
- Telecom Regulatory Authority of India
- Central Board of Excise and Customs

The terror threats faced by the country also is supported by financial backing which if analyzed and detected using forensic accounting skills can go a long

way in preventing such acts and establishing evidence against the culprits.

2.3 Banks and Forensic Accounting Services

Banks need the services of Forensic Accountants to strengthen their screening process in selecting good projects to lend to. They will thus avoid the problems of Adverse selection as highlighted in the theory of Asymmetric Information propounded by George Akerlof. With Risk Management becoming increasingly important in Indian Banks in light of Basel Committee recommendations, Forensic Accountants are needed to be an integral part of any risk management team.

RBI in its circular on 'Frauds – Classification and Reporting' dated 2nd July, 2007 highlights that: "frauds are, at times, detected in banks long after their perpetration. Sometimes, fraud reports are also submitted to RBI with considerable delay and without complete information. On some occasions, RBI comes to know about frauds involving large amounts only through press reports. Banks should, therefore, ensure that the reporting system is suitably streamlined so that frauds are reported without any delay. Banks must fix staff accountability in respect of delays in reporting fraud cases to RBI.

The same circular also lists the types of fraud based on the provisions of Indian Penal code which every bank is supposed to report to the RBI as follows:

- (a) Misappropriation and criminal breach of trust.
- (b) Fraudulent encashment through forged instruments, manipulation of books of account or through fictitious accounts and conversion of property.
- (c) Unauthorised credit facilities extended for reward or for illegal gratification.
- (d) Negligence and cash shortages.
- (e) Cheating and forgery.
- (f) Irregularities in foreign exchange transactions.
- (g) Any other type of fraud not coming under the specific heads as above.

(The said circular may be accessed at <http://rbidocs.rbi.org.in/rdocs/content/pdfs/85367.pdf>)

2.4 Insurance and Forensic Accounting Services

In recent years Insurance business in India has shown a robust growth both in overall size as well as in diverse and new sectors like medical insurance, automobile insurance, travel insurance, etc. This is in addition to the traditional business insurance and life insurance. Many International Insurance companies have set up their subsidiaries in India to tap this growing market. These Insurance Companies need Forensic Accountants to verify the authenticity of the increased number of claims made against them.

2.5 The Legal Profession and Forensic Accounting

Lawyers and Attorneys need Forensic Accountants to investigate the financial trail of persons suspected of engaging in criminal activity. Information provided by the forensic accountant may be the most effective way of obtaining convictions. The forensic accountants may also be engaged in bankruptcy cases when submitted financial information is to be certified.

In Divorce and legacy litigations forensic accountants help to determine whether assets are being understated or liabilities are overstated. In fact Forensic accountants are accepted as expert witness in all courts of law.

2.6 Stock Market and Forensic Accounting

Ketan Parekh and Harshad Mehta have the unsavory honor of being master stock Prices manipulators in India. There are also allegations of stock manipulations and insider trading by directors of certain companies.

Additionally there are many instances in the 1990's of vanishing companies in the primary market who come out with IPO's when the market was bullish and disappeared thereafter. There are also possibilities of Investment and brokerage firms working for certain vested interests in their recommendation reports.

Unraveling all these require the expertise of Forensic Accounting.

2.7 Computer Crimes and Forensic Accounting

The use of internet for conducting e-commerce transactions have created another space for fraudsters to indulge in online frauds by new techniques like phishing which are used to steal bank and credit card details of unaware online shoppers. Tracking these new breed of technological savvy fraudsters and convicting them again requires the skills of a forensic accountant as well as cyber experts to look into beyond the transaction in these cyber crimes.

2.8 Businesses and Forensic Accounting

It can be emphatically stated that the accounting scandals involving Enron, WorldCom, Satyam, Global Crossing and other companies have put auditors and accountants in an unprecedented public gaze. As a result government and public confidence in the traditional auditing and accounting profession has been damaged. However, these scandals have underlined the importance of forensic accounting and have developed opportunities for forensic and investigative accounting. Forensic accounting services are required both for investigations against the owners (when they have committed financial crimes against the employees, government, public and other stake holders) and also for investigations on behalf of owners (when they are the victims of Financial crimes like employee thefts, payroll fraud, fraudulent billings, identity theft etc. Now the services of forensic accountants are not only called after owners suspected that fraud has been committed but they are even being called for proactive fraud checkups.

3 Conclusion

Initially the auditors themselves were called on to undertake financial investigations when a fraud was committed. However with specialization as well as the complexities involved in frauds being committed Forensic Accounting and Auditing has evolved into an exclusive activity with specifically trained professionals. The forensic accountant is required to pay attention to the smallest detail, analyze data thoroughly, think

creatively, possess common business sense, excellent computer skills, an inquiring mind, puzzle solving ability and a 'sixth sense' that can be used to reconstruct the details of the past accounting transactions and be able to tell the story.

New laws and regulations resulting from the scandals will make the role of the forensic accountants more important than ever before in the business world globally as well as in India.

Acknowledgment

This work was supported by the minor research grant received from the UGC under a project titled "Study of the development of Forensic Accounting and its relevance in different types of criminal investigations"

References

- [1] Manning G.A.(2005).Financial Investigation and Forensic Accounting.(pp.V) USA,CRC Press
- [2] Grove H.(Monday, April 04, 2011).Asia's Enron:Satyam. www.danielsnetworth.org. Retrieved from <http://www.danielsnetworth.org/2011/03/31/professor-hugh-grove-presents-on-business-scandal-in-india/>
- [3] Roy A.R.(Monday, April 04, 2011). Forensic Accounting - a New Paradigm For Niche Consulting. <http://EzineArticles.com>. Retrieved from <http://ezinearticles.com/?Forensic-Accounting—a-New-Paradigm—For-Niche-Consulting&id=1757106>
- [4] Pasco G.A.(2009). Criminal Financial Investigations; The Use of Forensic Accounting techniques and indirect methods of Proof.(pp.xiv) USA,CRC Press
- [5] Manning G.A.(2005).Financial Investigation and Forensic Accounting.(pp.1) USA,CRC Press
- [6] Lofgren K., Persson T., Weibull J.W. (Jun., 2002) Markets with Asymmetric Information: The Contributions of George Akerlof, Michael Spence and Joseph Stiglitz. (Vol. 104, No. 2 ,pp. 195-211), Sweden, The Scandinavian Journal of Economics.
- [7] Joshi M.S.(Monday, April 04, 2011). BASEL-II:Three steps of Governance. www.indiaforensic.com. Retrieved from <http://www.indiaforensic.com/basel-ii.pdf>
- [8] Icfai Books(2008). Forensic Accounting and Financial Frauds(Vol.1,pp.8)Tripura, The Icfai University Press.
- [9] Icfai Books(2008). Forensic Accounting and Financial Frauds(Vol.III,pp.94-95)Tripura, The Icfai University Press.
- [10] Kanhere V.(Jan 2006)Forensic Accounting and Auditing Emerging Issues. The Accounting World. Pp.9-15

Social Responsibility of Business and its linkages with ethical marketing

Mohammad Khalil Ahmed*, Swati Vora**

Abstract

Business and society are mutually dependent. Companies worldwide engaged in Corporate Social Responsibility are reporting benefits to their reputation and their bottom line. The current societal marketing concept of business is constantly evolving and has given rise to a new concept—Corporate Social Responsibility. Ethics in marketing pose certain critical issues. Marketers may use certain ethical standards that guide decision making when confronting questionable situations that may not be covered by law. Organizations pursue various strategies to ensure their ethics in order to achieve goodwill among their stakeholders. Corporate Social Responsibility (CSR) is one of them. CSR goes ahead of charity and requires that a responsible company take into full account of the impact on all stakeholders and on the environment when making decisions. This requires them to balance the needs of all stakeholders with their need to make a profit and reward their shareholders adequately.

This article explains the concept of Corporate Social Responsibility (CSR) and Ethical values in Marketing and Identifies and Analyses the matters like to what extent the marketing managers in India give value to the ethical aspects.

Keywords: Stakeholders, Corporate Citizenship, Social marketing, Ethical Values.

1. Introduction

Business houses and MNCs operating in India started realizing the significance of CSR and ethics in conducting the business which takes care of the society's concern on the one hand and maximization of overall profitability of the concern on the other. CSR is a commitment by business to behave morally and add to economic prosperity while improving the quality of life of the workforce and their families as well as of the local community and society at large. Here society means customers and people at large. Corporate social

responsibility means social responsibility of corporate sector, which also means response of the corporate sector towards society. Profit making organizations must realize that government alone will not be able to get success in its endeavor to uplift the downtrodden of society. Government needs helping hand of profit making organization. Corporate Social Responsibility means commitments towards society and includes social welfare measures health and safety, environmental protection, human rights, human resource management practices, corporate governance, community development, and consumer protection, labour welfare,

*Associate Professor, HOD in Commerce, Burhani College of Commerce & Arts, Mumbai, Email id: khalila8@gmail.com

**Assistant Professor, Rizvi College of Arts, Science & Commerce, Mumbai

supplier relations, business ethics, and stakeholder rights. CSR is a term used to describe what some see as a company's commitment to be responsive to the needs of all the constituents in its business operations. A company's stakeholders are those who are influenced by, or can be influenced by, or can influence, a company's decisions and actions. They are: human resources, consumers, creditors, community organizations, subsidiaries and affiliates, joint venture partners, local neighborhoods, investors, Government and Media. Business ethics, corporate citizenship, corporate accountability, sustainability are interchangeably used with CSR.

2. Literature Review

In recent years CSR has become a fundamental business practice and has gained much attention from the management of large multinational corporations. They are very much aware of the fact that a strong CSR program is an essential element in achieving good business practices and effective leadership. Companies have explored that impact of CSR on the economic, social and environmental sector directly affects their relationships with investors, employees and customers. In the context of globalization Corporate Social Responsibility can be of direct economic value also. Marketing plays a vital role in the economy. It is therefore vital for marketers to act in an ethical manner because they affect the lives of many people.

Business finds that venturing into social enterprise can pose important risks to the firm's reputation when it is found to step over ethical bounds (Sarner and Anderson 1996). At the same time, non-profits organizations have found themselves in new partnerships and networks where the norms of behavior are vague and the non-profits are at danger of being exploited deliberately or inadvertently by more influential and more refined commercial partners. In this context, we would like to pinpoint the need for moral values and social conscientiousness in Marketing.

An exact definition of CSR is elusive as opinions vary. Perhaps the most appropriate definition of CSR is

that of Carroll's model (1979). Carroll deliberated a four-part conceptualization of CSR that included economic, legal, ethical and philanthropic elements. According to this model, all business responsibilities are subject to the economic responsibility, which includes maximizing profitability and maintaining a strong competitive position. (Regulatory) Legal obligations include complying with rules and regulations. Ethical responsibilities connote societal standards and belief, expectations and norms that have not been specifically framed. Lastly, philanthropic obligations consist measures that are in response to societal belief that businesses to be good corporate citizens. These are differentiated from moral responsibilities in that they are of a benevolent nature and, as such, a business is not considered wrong if it does not provide them (Carroll 1999). However, the literature still lacks a unified and definitive understanding of CSR. CSR is associated with but not identical to business ethics. CSR consists of the economic, legal, moral, and discretionary responsibilities of organizations, business ethics typically concentrates on the moral judgments and conduct of individuals and groups within organizations. Hence, the study of business ethics may be regarded as a component of the larger study of corporate social responsibility.

Ethics encompasses moral principles and values that control actions and decisions of an individual or a group. Increased pressure for achieving larger quantities, to match the demand may lead to decline in business ethics and devaluation of values and culture. Sensible mix of social ethnicity and norms, trade culture and industry practices, and corporate culture and expectations will result in creation of a friendly environment for increasing productivity, participation and involvement, quality and thereby achieving improvement in profitability.

3. The Rationale for the Current Study

Indian culture has always been associated with ethical considerations. The social fabric in India has always laid importance on ethical conduct as it has

deemed to be an essential ingredient in maintaining the sense of order and justice. It is very much obvious that in a society and culture like that of India, an unethical image of business will surely ruin any chances of success.

Ethics in marketing has posed certain issues that require examinations. Marketers may use ethical standards to guide decision making when confronting questionable situations that may not be covered by law. It is the dealer that most consumers interact with and these interfaces could be with salespersons and managers. The marketer should know the concepts of CSR, its linkage with marketing and ethical conflicts faced by the marketers/dealers, Consumer movement, Social conscientiousness and ethical issues in Marketing, the Natural Environment, Green Marketing, Cause Related Marketing, Societal Marketing and its relationships in Marketing Ethics.

4. Corporate Social Responsibility (CSR) and Ethics in Marketing:

In an earlier book, Laczniak and Murphy (1993) define marketing ethics as: the systematic study of how moral standards are applied to marketing decisions, behaviors and Institutions. More recently, Murphy *et al.* (2005) define ethical marketing as: practices that emphasize transparent, trustworthy, and responsible personal and/or organizational marketing policies and actions that exhibit integrity as well as fairness to consumers and other stakeholders.

American Marketing Association (AMA) points out that ethical marketing alone is good marketing and it results in developing a long term relationship with the customers. Successful business depends upon customers' loyalty and the business house also has to meet the requirements of the interested parties like customers, employees, suppliers, banking institutions, public etc. The relation between business ethics and social responsibility is that, the former is reactive and the latter is proactive. The present study focuses on the following issues.

4.1 Ethical clash/conflict faced by the Marketers:

The areas of business operations which is most of the times considered as the hub of unethical practices and thus mistrusted is marketing. It is quite common among the marketers to go beyond the primary function of disseminating information about the product and access to the customers and seek to manipulate the behavior of consumers. This, however, has been acceptable to some extent but the line which separates the ethical conduct from the unethical is not clearly drawn.

One reason for which the marketing department tends to be the target of debate over business ethics is because it tends to be the most visible and conspicuous part of the business to the public at large. Moreover unethical practices like price fixing, price discrimination, anti-competitive practices, bulk unsolicited mailing, subliminal messages, false or misinforming advertising, and many more have added to the woes of the marketers who are then collectively distrusted and labeled as unethical.

Businessmen must be aware of ethical standards and acceptable norms. This means that marketers must think about the viewpoints of key players: the company, the industry, and society. Since they almost always have different needs and wants, ethical conflicts are likely to arise. Such clash arises due to the different needs of the aforementioned groups and when one's personal ideals conflict with the organization. In each case, a clash of interest is a resultant outcome. To illustrate, the first type of clash is the tobacco business. There is documentary proof that cigarette smoking is injurious to health. This may be taken as an ethical clash/conflict for cigarette marketers. An example of the second type of clash, when one's personal ideals clash with the organizations. It happens when a head in the company seeks individual gain (generally fiscal profit) from fake advertising. "Remedies" for fatal diseases are one type of product that falls into this category of ethical conflict: In order to make an earnings, a marketer persuades those who

may be dying from an incurable disease to buy a product that may not be a cure, but which a badly ill person (or members of his or her family) may opt to buy in an attempt to save the dying family member suffering. Rules of marketing ethics are violated when we market and promote such products.

Ethical clash being faced by marketers today covers- tobacco and alcohol promotion, customer privacy, and green marketing. Standards that are set for ethical business lead business to act honestly. These standards perform four functions: help in identifying acceptable practices, promote internal control, shun confusion, and facilitate a basis for discussion.

4.2 Marketing and the Natural Environment

Environment is an important area of social concern. Marketing finally relies on the use of scant resources to satisfy individual needs, without harming or needlessly using scarce resources. Marketing leaders should assist in deciding about products produced and products which are ultimately affecting the environment:

- The natural resources and supplies used.
- The sum of energy needed in the manufacturing process.
- The residuals (e.g., waste water) that result from production.
- The consumption of resources and energy that is required to use products (cars, air conditioners)
- The quantity of wrapping material that may have to be discarded.

4.3 Marketing and Culture:

A marketing manager can't afford to take the cultural and social environment for granted. Although changes tend to come slowly, they can have far-reaching effects. A marketing manager who sees the changes early may be able to identify big opportunities. Further, within any broad society, different subgroups of people may be affected by the cultural and social environment in

different ways. In most countries, the trend toward multiculturalism is making such differences even more important to marketers. They require special attention when segmenting markets. In fact, dealing with these differences is often one of the greatest challenges managers face when planning strategies, especially for international markets.

4.4 Consumerism

Consumerism is a social movement that seeks to increase the rights and powers of consumers. The CSR and consumerism cannot be isolated. Had organizations assumed social obligations, the consumer movement would have never started. Consumerism is a fight for supremacy between buyers and sellers; specifically, it is a social group aims at increasing the rights and powers of buyers in relation to sellers. In the last 30 years, consumerism has emerged as a major political force. Although the consumer movement has spread to many different countries, it was born in America. The basic goals of modern consumerism haven't changed much since 1962, when President Kennedy's "Consumer Bill of Rights" affirmed consumers' rights to safety, to be informed, to choose, and to be heard. Twenty-five years ago, U.S. consumerism was much more visible. Consumers staged frequent boycotts and protest marches and attracted much media attention. Today, consumer groups provide information and work on special projects like product safety standards. Publications like *Consumer Reports* provide product comparisons and information on other consumer concerns. Clearly, top management and marketing managers must continue to pay attention to consumer concerns. The old, production-oriented ways of doing things are no longer acceptable. Now the ball is in the marketer's court to understand the level of consumer standards, the nature of consumer perceptions and what is required to foster realism and accuracy among consumers.

4.5 Green Marketing and Ethical Issues

The next significant area the marketer need to know is the relevance of Social Marketing in order to guard

the environment and to improve the quality of life which are related with issues like conservation of natural resources, minimizing environmental pollution, defending endangered species, and control of land use. Various companies find that consumers are willing to pay more for a green product. Example of Toyota can be quoted which has become quite successful with their hybrid cars.

Green marketing may be referred as to the development and distribution of ecologically-safe products. It means products and packages that have one or more of the following characteristics: (i) are less contaminated, (ii) are more durable, (iii) include reusable materials, or (iv) are prepared from recyclable material. Precisely, these are products considered “environmental friendly”.

4.6 Relationship Marketing and Ethics

In recent times, it is believed that Relationship Marketing is a rational practice leading to positive dealings between buyers and sellers. In RM rules are not essentially contractual. It allows buyers and sellers to work jointly. However, there are demerits to this approach- relationship marketing requires time to develop a list of expected conduct or “rules of behavior.”

4.7 Social Marketing and Ethics

Social Marketing is the use of marketing principles and techniques to persuade a target audience to voluntarily accept, reject, modify, or abandon behaviour for the benefit of individuals, groups or society as a whole.

Social marketing is basically undertaken by a non-profit organization, government, or semi-government agency. The objective is either to turn the public away from products that are injurious to them and / or society (e.g., prohibited drugs, tobacco, alcohol, etc.) or to direct them towards behaviors or products that are useful to them and / or society (e.g., having family meals, praying jointly, etc.).

4.8 Cause - Related Marketing and Ethics

There should be no confusion between cause-related marketing and social marketing. A key distinction is that a major purpose of cause-related marketing is to help a business. It is used to improve the image of the firm or to increase market share.

Cause-related marketing has to be done perfectly or it can hurt a company. A firm may look as if it is exploiting a charity. A firm should be clear and honest about what it is doing. There must also be a good fit between the company and the cause. A good fit would be, for instance- might be a bottled water company and a cause- it deals with providing clean water for poor people in Asia and Africa.

4.9 Ethical Norms and Values for Marketers

Guiding principles are issued by Professional associations and accrediting bodies for moral code in marketing. The AMA commits itself to encourage the highest standard of professional ethical norms and values for its members. Norms are well-known standards of conduct that are expected and maintained by society and / or professional organizations. In this role Marketers should embrace the highest ethical norms of practicing professionals and the ethical values implied by their responsibility toward stakeholders i.e., consumers, workforce, investors, channel intermediaries, regulators and the host community. According to the AMA, the following rules guide marketing behavior.

- a) Responsibility of the marketer: Marketers must own responsibility for the consequences of their activities and make every effort to ensure that their decisions, recommendations, and actions function to identify, serve, and satisfy all relevant components: customers, organizations and society.
- b) Sincerity, uprightness and Quality are far more important than quick profits.
- c) Rights and duties in the marketing exchange process: - Participants should be able to expect that

products and services are safe and fit for intended uses; communications about offered products and services are not deceptive; all parties intend to discharge their obligations, financial and otherwise, in good faith; and appropriate internal methods exist for equitable adjustment and / or redress of grievances concerning purchases.

- d) Managerial contact: Marketers should be conscious of how their behavior influences the behavior of others in organizational affairs. They should shun away from demanding, encouraging, or applying coercion to encourage unethical behavior in their relationships with others.
- e) Carry out business so as to build long term loyalty: When one gets a customer, one wants to keep that customer and builds a sales relationship that can not only last years, but also create a stream of referral business.
- f) Marketers must do no mischief: This means marketers should work for which they are suitably trained or experienced so that they can keenly add value to their organizations and customers. They should adhere to all rules and regulations applicable to them and thereby embodying high ethical standards in the choices they make.
- g) Inculcate faith in the marketing system: This means products must be suitable for their intended uses and marketing communications about goods and services are not intentionally misleading or deceptive. Unless we develop relationship that provide for the equitable adjustment and / or redress of customer grievances, it is not possible.
- h) Hold, communicate and practice the basic ethical values that will develop consumer confidence in the reliability of the marketing exchange system.

4.10 Education and Ethics

Ethics and moral values have become an important concern worldwide. In the United States there are about

450 courses offered in the field of Ethics by various universities. Business ethics to be included in MBA syllabus as has been suggested by AICTE, India. The purpose of teaching Ethics or Ethics in marketing in particular is to provide the burgeoning marketing manager / managers to

- a) Share knowledge, develop skills and develop minds of the young managers of tomorrow.
- b) To provide and clarify the concepts of business so that young managers avoid business wrongdoing, when they really go and conduct the business.
- c) To develop integrity and social understanding so that they can take suitable course of action when faced with business problems.

5. Conclusion

Marketers are expected to support high ethical standards on their own as ethical sense must come from within. It cannot be imposed by law or by force. Renowned jurist late Nani Palkhiwala has rightly observed: "What is the point having laws and laws upon laws if your inner consciousness is not there, which enable you to do right thing for a right conclusion".

Numerous factors have driven companies to practice a higher level of CSR: ever increasing customer expectations, shift in employee aspirations, government legislation and pressure, the inclusion of social criteria by investors, and dynamic business procurement practices. In fact, companies need to evaluate whether they are committed to ethical and socially responsible marketing. Satisfaction of different facets of society and business success is closely linked to practicing high standards of business conduct. The most appreciated companies in the world follow a code of serving people's interests, not only their own.

The **Suggestions** that the society must use are:

- a) The law to be defined as clearly as possible those practices that are illegal, anti-social, or anticompetitive.
- b) Companies must adopt and circulate a written code of conduct, build a culture of ethical behavior, and hold its people fully accountable to observe ethical and legal guidelines.
- c) They must practice a “social conscience” in their specific dealings with customers and various stakeholders.

Innumerable opportunities are there to be grabbed by the companies in future. Technological advances in solar energy, online networks, cable and satellite television, biotechnology, and telecommunications promise to change the world as we know it. At the same time, various environmental factors will impose new limits on marketing and business practices. Only those companies may survive that are able to innovate new solutions and values.

It is our belief that good ethics is good business. Good marketing may ensure satisfied customers and may help in developing a long-term relationship with them. Taking care of the consumers not only helps in earning profits, it is an ethical thing to do. Misleading customers

may help a firm to earn profit in the short-run, but it is not the way to build a successful business. A firm has to take care of all the constituents of the society.

References:

- Carroll, A. B.: (1979), A Three-Dimensional Conceptual Model of Corporate Social Performance, *Academy of Management Review*, Vol. 4(4), 497–505
- Carroll, A.B.(1999), Corporate social responsibility: Evolution of a definitional construct, *Business and Society*, Vol.38(3), 268-295.
- Laczniak, Gene R. and Murphy, Patrick E. (1993), *Ethical Marketing Decisions: The Higher Road*, Boston.
- Murphy *et al.* (2005), Developing, communicating and promoting corporate ethics statements: A longitudinal analysis, *Journal of Business Ethics*, Vol.62, 183-189.
- Sarner, Mark and Janice Nathanson (1996), *Social Marketing for Business*, Manifest Communications, Toronto
- The Icfai Journal of Management Research (2006), Vol. V(8), 77.
- The Icfai Journal of Management Research (2003), Vol. II(4), July.

Website:

International Business Ethics Institute, <http://www.Business-ethics.org>

Stress Management as a tool for enhancing effectiveness of Managers

Ashfaque Karim*

Abstract

Stress is a state of mental and emotional tension or exhaustion caused by severe pressure. Globalisation in today's world has changed our work culture and work schedule causing stress to individual managers. Many people claim they perform only under stress created by the urgency of the situation. The sustainability of such under pressure performance is susceptible in the long run. Stress has become the major reason for absenteeism from work. The Confederation of British Industry (CBI) estimated that in 2007, 172 million working days were lost due to absence, costing employers across the public and private sector £13 billion. Hence a need for managing stress in an increased competitive environment. For this purpose stress busters are classified into two categories and are critically evaluated concluding into a regular stress management schedule.

Keywords : absenteeism, globalisation, importance, performance, productive , stress, urgency.

1 Stress Defined

Oxford Dictionary offers a very simple definition of stress in the context of this paper; "Stress is a state of mental and emotional strain". Since stress is defined in the light of strain the same dictionary also defines strain as, "Strain is a state of tension or exhaustion caused by severe pressure." Now, putting two together we can say: "Stress is a state of mental and emotional tension or exhaustion caused by severe pressure."

Globalization and Stress

Globalization in today's world has affected and totally changed our work culture and work schedule. An important issue of Globalization that is highly relevant for stress research is the changing nature of work and careers as we embark upon the 21st Century. Today, we no longer talk in terms of a nine to five work day. With multinational offices spanning over continents and time

zones and cut throat competition forcing round the clock working schedule, the focus is on to achieve more productivity. Human physiological and psychological needs have therefore taken a backseat. A majority of the professionals working in today's offices in a metropolitan city like Mumbai start their day with drowsy eyes as they were working late into the night. They then start their fight with the traffic system to reach their offices often munching some sandwiches on the way as their breakfast. Once in the office, the work and office politics often make them miss on their regular lunch and they end up eating some pizza or burger from the nearest fast food outlet. The day is also dotted with the consumption of innumerable cups of tea/coffee to keep up the optimum performance. The office day ends well into the night with carrying on some very urgent works back to home to complete them in the night almost daily. Work and office related issues chase a man even in his dreams. In his quest to excel, today's working man jettisons his diet

*Assistant Professor in the Department of Accounts, Rizvi college of Arts, Science & Commerce, Mumbai,
Email : ashfaquekarim@gmail.com

control, his exercise schedule, his relationships and this in return creates a spiralling stress impact on his family members and children. The problem becomes more complex when both spouses are working executives in different organizations and emotional needs are forced to be met not through the real spouses but “office spouses”. Acknowledging these emotional needs lately some organizations have developed a policy of encouraging spouses to work in the same office.

3 Performance and Stress

Many people claim they perform only under stress created by the urgency of the situation. They therefore like to be under stress as otherwise they would not be productive. In other words, if a person is not proactive, he then has to depend on external factors to give him stress. This stress drives him to perform instead of his own proactive-ness. To excel a person should perform based on his own initiatives and should not force himself to perform under stress.

Even if it is argued that limited stress is a good performance booster, still it will have very limited positive results and that too in the short run. In the long run it will have negative effects on the health of a person. The sustainability of such under pressure performance is also susceptible in the long run.

4 Medical and financial effects of Stress

Previous studies have found that this stress in addition to creating havoc in family life is also responsible for a variety of ailments, including:

- Heart attack/strokes;
- Hypertension/high blood pressure;
- Ulcers;
- Diabetes;
- Angina;
- Cancer;
- Rheumatoid arthritis;
- Psychological disorders such as anxiety and depression, including breakdowns.

Stress has become the major reason for absenteeism from work. The Confederation of British Industry (CBI)

estimated that in 2007, 172 million working days were lost due to absence, costing employers across the public and private sector £13 billion.

5 Managing Stress in an increased competitive environment

The competitive environment offers some instant stress busting solutions like:

1. Watch a movie.
2. Go shopping on a weekend.
3. Go to a nearby resort- take a small vacation.
4. Get addicted to alcohol/cigarettes.
5. Go Partying.
6. Read books on Motivation.
7. Enroll yourself in a stress management workshop.
8. Join a health club/Gym.

The above list is illustrative and not exhaustive. Solutions mentioned therein can be classified into two groups. The first five offer just temporary relief with no real solutions. It is just an escape into activities which are unimportant. As soon as a person comes back into his regular schedule his stress follows him. In fact it will not be out of place to assert that he was not stress free even while escaping into these pleasant activities as he always knew that he is just escaping temporarily. The last three solutions can be effective in some ways only if they become a part of a regular schedule as otherwise they act just as the first five: “A temporary means of escape.” As illustrated previously the stress related problems are an outcome of a daily stressful schedule. This daily schedule is stressful as in involves attending to ‘urgent’ works on a repeated basis. The ‘urgent’ has no longer remained exceptional. Everything has become urgent. Hence, any solution to be effective has to address this core issue of managing the daily ‘urgent’ schedule in a better manner. This can be done by first classifying the urgent works into the important and the unimportant. Once this is done a person should just chop off the urgent un-important things from his daily schedule and then attend to the urgent and important. However always attending to the urgent and

important can also be stressful. Hence now an individual should with the help of an urgency-importance matrix handle and plan for these important activities before they become urgent and cause him stress.

Charles Hummel quotes in "Tyranny of the Urgent":

"...The urgent task calls for instant action....The momentary appeal of these tasks seems irresistible and important, and they devour our energy. But in the light of time's perspective their deceptive prominence fades. With a sense of loss we recall the vital task we pushed aside. We realize we have become slaves to the tyranny of the urgent"

This requires shifting the focus from attending to urgent works to important works. When important works are attended to well in advance there will be no stress by failing to achieve them or by completing them on an urgent note.

The more urgency we have in our lives the less importance we have. However, different things are important to different people. For example, for a newly married couple satisfaction of the spouse may be of utmost importance. But for a new mother the comfort of her baby takes precedence over the satisfaction of the spouse. Similarly in an organizational structure different people perceive different things as important, depending upon their perception of their own roles. These divergent perceptions of importance by either different people at the same time or the same person at different times make responses to a similar situation different. Thus, in defining importance a person should rely more on wisdom and less on emotions. A wise person effectively uses his time by identifying values, objectives, goals, and priorities and then spends as much time as possible engaged in priority activities. A person should wisely clarify his values and what he wants to achieve. His long term and short term goals should be clear to him. If he knows what he wants he will logically as a next step think how he has to reach there and those activities which are a reply to these "how's" will automatically be identified as his important activities. The clarity of thought achieved by such a thinking process will empower a person to either delegate or simply refuse to

attend to many activities which he was attending to till now falsely considering them as important and must-do activities. Over here even the like of the three activities whose example we listed previously as effective solutions to stress, would be identified as important and priority items to ensure physical and/or mental freshness which is a pre-requisite for any goal to be achieved. These with other wisely selected important activities would be made a part of the daily schedule. The daily schedule would then be filled with more of important activities and less of urgent activities.

Conclusion :

Stress is caused by the urgency of attending to a task. Hence if we move from thinking in terms of urgency to thinking in terms of importance and give due importance to important affairs in our daily schedule then the same daily schedule which was the source of stress will now become its solution.

References :

- Cooper,C.L., Dewe,P.J.& O'Driscoll M.P.(2001).Organizational Stress.(pp.234) California, Sage Publications,Inc.
- Covey, S.R.(1989/1999).The Seven Habits of Highly Effective people.(pp.152) London, Pocket Books
- Covey, S.R., Merrill,A.R.&Merrill,R.R., (1994/2002) First things First (pp.36)London,Pocket Books
- Hummel,C.(1967). Tyranny of the Urgent.(pp.9-10) Downers Grove, IL: Inter Varsity Christian
- Fellowship of the United States of America.Ludlow, A. (Friday 31st July 2009). Public sector absenteeism: Why we need to address it and how we can. 24dash.com. Retrieved from http://www.24dash.com/news/Local_Government.
- Palmer, S. & Cooper,C. (2007). How to deal with Stress.(pp.9)New Delhi, Kogan Page India Private Limited.
- Sutherland,V.J., & Cooper,C.L.(2000) Strategic Stress Management- An Organizational Approach.(pp.198) New York, PALGRAVE.

EFFICIENT SCM: ‘FOR SUSTAINABLE DEVELOPMENT’

Khan Ashfaq Ahmad* Khan Tufail Ahmad**

Abstract

Value creation in the supply chain literature normally banks on the value chain model (VCM). This results in a focus on succeeding interdependencies, a focus on coordination by planning and a constrained view of likely positioning alternatives. Indian society being predominantly agriculture-based has undergone transformation from traditional agriculture of mere sustenance to realizing the optimum potential for commercialization and export-oriented agribusiness. However these changes have great adverse bearing on the sustainable development. The poor supply chain leads to almost one third of agro product to go waste. The sector deserves adequate legal protection because of the Constitutional Mandates for the Environmental Protection. This paper adds an original approach to the supply chain management (SCM) debate, based on value configuration analysis (VCA). VCA recognizes the value chain logic (VCL), but finds it restraining in particular business systems, and also includes gratitude of the value network model (VNM) as representing the layered supply chain relationships (SCRs) classically related with a mediating presence. Central issues in this paper’s view of SCM are value logic interface, harmonization of various interdependencies and the simultaneous occurrence of both over and under current relationships as well as conventionally documented up and down stream dependencies. The complexity thus exposed recognizes new positioning options for firms in SCRs for effective Sustainable Development. These arguments are illustrated with help of a case study and related to previous work on supply chains and networks.

Keywords: Supply Chain Management (SCM), Sustainable Development, Indian Judiciary, Legal Framework and Food Policy.

Introduction

Managing SCRs is a strategic chore that can add to the competitive strength and profitability of individual firms as well as entire chains (Christopher. M.1998). But in spite of the accepted importance of SCRs, little is known about the determinants of success and failure, (Hult G.M.T. 2002). Reports that the U.S. food industry alone is estimated to waste \$30 billion annually through poor supply coordination illustrate a significant potential for improvement (Fisher M.L. 1997).

Porter’s well-known value chain model (VCM) and the corresponding idea of value systems have deeply influenced the understanding of how SCRs work. (Porter M.E. 1985). These models have formed managerial thinking about such strategic issues as value creation, coordination and positioning. Though, while the VCL is found as representing a strong and suitable logical means for such areas as corporate strategy, it is also supposed to limit complete understanding of how knowledge and service based business systems function. (Normann .R Ramirez. R 1993).

*Assistant Prof., Dept of Commerce Rizvi College of A/S/C Mumbai. Email: kaabashfaq@gmail.com

**Research Scholar Dept of Agriculture Economics, AMU-Aligarh. Email: tufail786@gmail.com

VCA is a current contribution to strategic management theory by Stabell and Fjeldstad, which both introduces the well known VCM and also incorporates an appealing option in the value network model (VNM) (Stabell C and. Fjeldstad O 1998). It handles with firm level disparities in terms of value creation, and provides an alternative understanding of the knowledge and service based activities which are vital to well functioning SCRs. VCA has never been systematically practiced to understand either supply chains or supply networks, two important representations of SCRs, though its basic advice advocates that the value chain/value systems arguments alone can provide only limited understandings of SCRs. *The research question is therefore to investigate the consequences of a VCA to the management of SCRs, focusing on supply chain value creation, supply chain structures, supply chain interdependencies, supply chain coordination and supply chain positioning and the benefits to the cause of sustainable development and other issues related to the benefits of environments.*

This paper is thus part of a current stream of research on value creation and business development in inter firms relationships and network settings. (Hinterhuber A 2002). Specifically it relates to preceding work on SCM, industrial networks and strategic supplier networks(Johanson J. and Mattsson L.G. 1992) It shares the apprehension expressed in the supply literature that the simple linearity of the traditional supply chain logic may hide levels of complexity that have to be addressed in managing SCRs (Cox .A Lamming R 1997).

In general, this paper contributes in two ways: by enlightening some of this complexity and by looking at how SCRs function despite this complexity. In particular, it presents an alternative view of how value creation happens between, as well as within firms in SCRs. It discloses how more complex sets of supply chain

interdependencies exist in SCRs than in simple chains, and that these necessitate managing by a variety of coordination machineries to achieve efficient working. Finally, it suggests a novel way to define a firm's supply chain position beyond that covered by the conventional up-stream/down-stream terms.

The following section presents the concept of VCA and relates it to previous work on supply chains and networks. The research methodology and case follows. Theoretical and managerial implications are then discussed, with central SCM issues presented in a number of propositions. The paper ends with conclusions that n efforts for the optimization of resources will go in a long way for the benefits of environment.

Value configuration analysis (VCA) and SCM the two models included in VCA both explain value creation based on the activities that individual firms carry out. On an inter-firm level of analysis, Porter defined a number of inter-linked value chains as a value system. In the SCRs context, these are referred to as supply chains, while in the terminology of VCA, inter-firm relationships are expressed in the notion of business value systems. The supply network illustrated in this paper's case study is an example of such a business value systems based on differing activity logics.

Research methodology

Case study design

This study defines VCA in the context of SCRs. There is currently a limited body of experiential research in the area of SCRs, and the viewpoint taken is often narrow in that data from only one participant (usually the manufacturer) is provided. (Hult G.T.M, KetchenD.J Jr. and Nichols E. L. Jr 2002) Implicit in a VCA is a conviction that the strategic understanding and analysis of firms depends on the viewpoint taken, and the

analytical tools must be selected to be suitable to the type of firm in question. When faced with the likelihood of such multiple viewpoints, a qualitative research approach can reveal new or alternative meanings and interpretations.(Lincoln Y.S.and Guba E.G.2000). The case study methodology adopted here is also suitable when looking for fresh perspectives on an already researched topic, as well as being pertinent when little is known about a phenomenon.(Eisenhardt.K.M 1989)

The particular case chosen demonstrates the interaction between the two basic value logics in SCRs - value chain and value network logics - and illustrates both the conventional view of inter-linked chains focused in earlier supply chain research, and the layered network aspect present in the value network approach.

Case study

Sea Air Land (SAL), the case study focal firm, is a Delhi based LSP, performing administrative logistics services on behalf of their clients. SAL invoices goods worth about USD 50 million annually, distributed over some 30,000 shipment orders (see Table 2). The core business of LSPs is to manage other firms’ supply chains, and arguably, VCA is especially pertinent for such firms which depend on a mediating role in a market which has received little attention in the growing SCM literature. (Berglund, Laarhoven, Sharman and Wandel 2001). Many of SAL customers are manufacturing firms, who typically function according to traditional value chain logic.

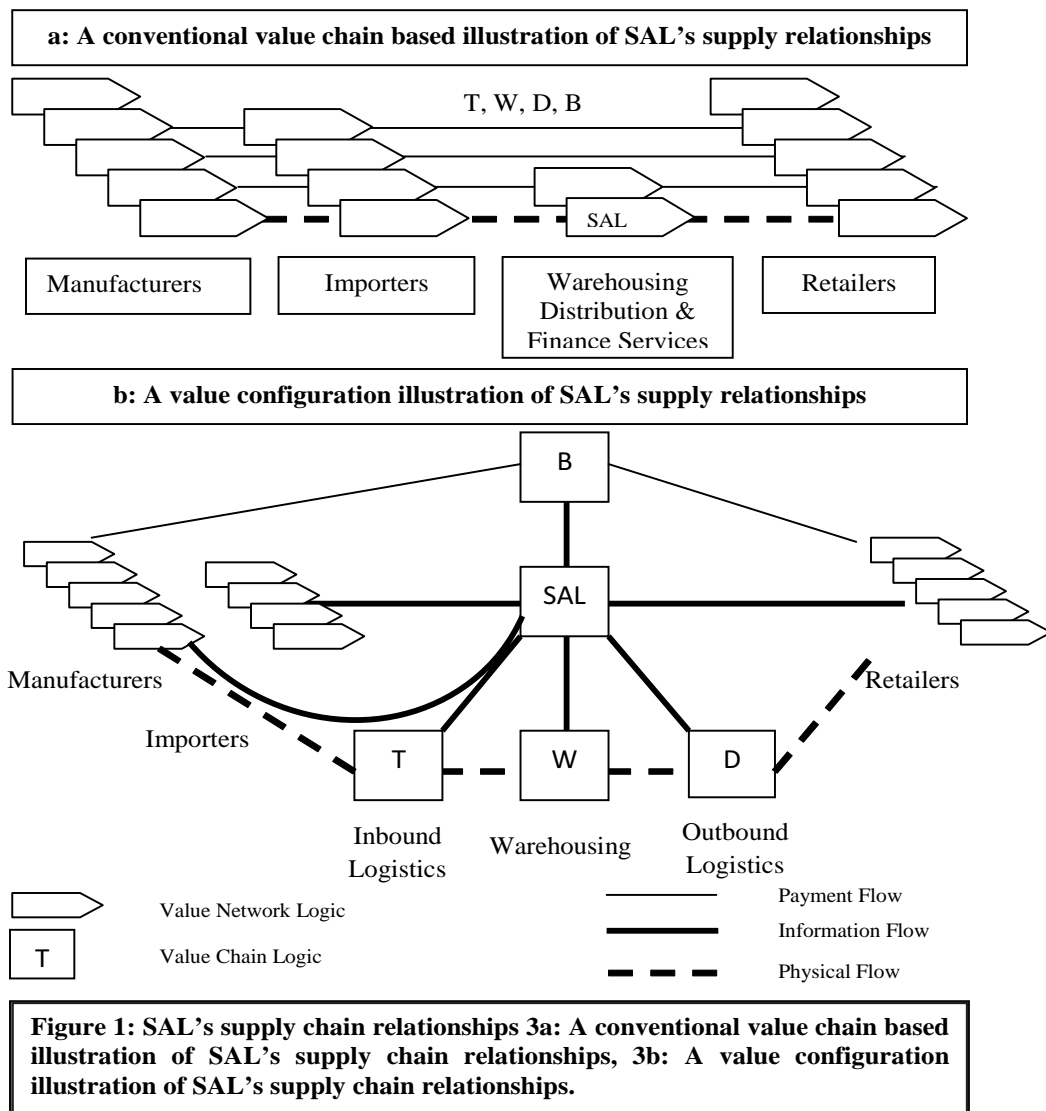
Table 1: SAL’s Basic Information

Founded	1996
Employees Approx.	100
Core fields of competence	Administrative logistics: the operational control of the flow of goods, information and billing
Customer offering	Through various relationships, SAL handles all logistics activities; inbound transport, storing, packing, order receiving, picking, outbound distribution and invoicing, for its customers. The customers are in turn responsible for marketing, sales and brand building of the products
Core resources	The size of its network (25 supply chains) Relationships to third party logistics partners, handling all the physical logistics activities such as transport and warehouse operations. Relationships to banks and other potential service suppliers. Its information systems and competence in administrative logistics
Market	Has expanded to 50 global locations

In fact managers of such firms could benefit, either when outsourcing logistical activities, or when managing their own distribution operations, from a better understanding of the alternative VNM. The network is illustrated in the following section.

Value configuration analysis of SAL’s supply chain

relationships : The case study examines the three supply flows in SAL’s supply chain relationships. Insights into the SAL case are given from the value chain logic (VCL) and value network (VNL) previously reviewed, and the main discussion of the case is based on VCA, with an emphasis on VNL.



Supply network flows

Figure 1 a & b demonstrate the three basic flows involved in SAL's operation of goods, information and payment/billing presented in the two contrasting VCA styles. Figure 3a shows a traditional value chain perception of SAL's SCRs, and Figure 3b the alternative VCA, which includes both the value chain network and the value chain logics. SAL creates value in its supply chain network by optimizing and integrating the processes of managing flows of goods, information and payment for number of importer clients. The basic task is to connect sender and receiver by transporting products

from manufacturers to retailers. SAL places orders on its (importer) clients' behalf and organizes freight of all shipments from producers around the world. It also handles warehousing and onward distribution to the retailers. SAL offers an integrated service to its clients by handling three distinct types of flow through the supply network: the first two of which are supplied by other providers but managed and coordinated by SAL, and the third is SAL's own operation.

The physical flow: SAL's primary business idea has been to develop relationships with partner logistics providers, and physical logistical operations (distribution,

warehousing and transportation) are executed completely by specialist third party operators. Thus transportation from the manufacturers is outsourced to T, W is the key supplier for storage and warehousing, while D handles outbound distribution to retailers.

The payment flow: As one of India’s big financial service groups, SAL’s banking partner B provides its corporate clients a full range of financial and advisory services, including effective follow-up of accounts receivable, flexible working capital facilities and credit risks for customer losses. From SAL’s perspective, B provides a custom-made system for factoring services in addition to the essential infrastructure for the payment flow.

The information flow: The heart of SAL’s own infrastructure is its integrated logistics governance system that manages the supply network’s flow of goods, including purchasing, transportation, warehousing, ordering of sales and invoicing. SAL’s logistics coordinators monitor their clients’ supply chains, issuing purchase orders to producers worldwide. All matters regarding maintaining the quality of products while they are within the supply network are SAL’s responsibility.

Insights from the value chain and previous network perspectives

This section underlines insights from traditional value chain logic, which is part of a recognized in a VCA.

Moreover, brief comments are made back to the other supply network perspectives previously discussed, i.e. INR and SSNR theories. This is followed by a discussion stressing alternative and additional insights based on a VCA.

Supply structures

Modern supply chain logic defines value chains as forming sequentially interrelated value systems consisting of different agents, each adding value to the output from the preceding chain. The basic network argument has been that a supply chain gains network characteristics when multiple chains are joined. Previous supply network research has thus increased our understanding of interconnected chains, but the activities explained are likely to flow in ‘shallow’ up and downstream relationships. The focus on single and interlinked chains in the supply chain literature needs to be added with an understanding of co-producing; multi layered and interconnected supply chain structures. This paper defines the vertical scope as the vital additional structural property in VNL. It is not essentially the number of chains that create network characteristics, but the ‘depth’ that the VNM recognizes through its recognition of interconnected network layers. This structural characteristic has consequences for existing supply interdependencies and thus coordination, as well as for possible positioning options.

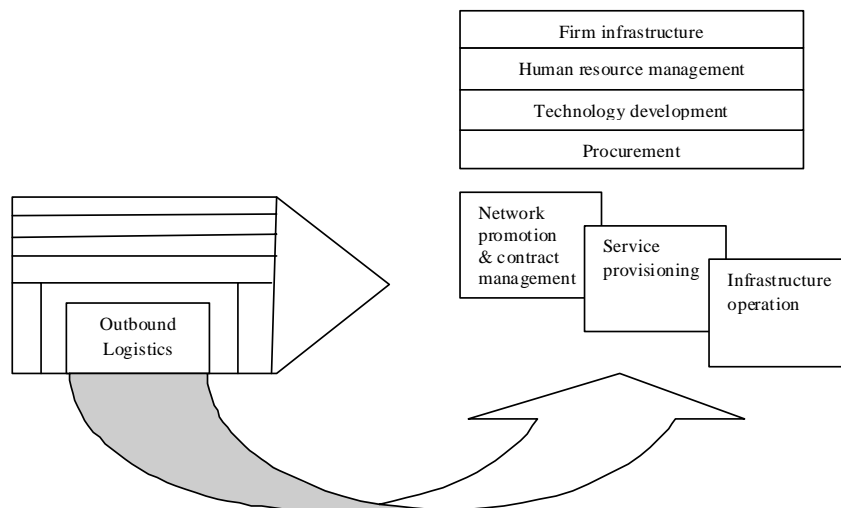


Figure 2: An example of value logic interaction - value network interpretation of the value chain’s outbound logistics.

Interdependencies

VCL includes identification and understanding of chronological interdependencies, which are well covered in the supply literature. But recent industrial network research (INR) literature, building explicitly on Thompson and on Stabell and Fjeldstad's VCA, focuses the need to differentiate between different types of interdependencies, and focuses explicitly on shared (e.g., when different network activities use shared resources) and mutual interdependencies.

Coordination

Several insights from the literature reviewed above accord with this paper's view of SCM. Industrial network research (INR) suggests that different supply chains may depend on common resources and therefore activities need to be coordinated accordingly. Besides above points there are some points which need to be taken care are **Positioning and Managerial Skills** involved in the implementation of effective and optimum supply chain activities.

The above case study is taken as model for effectiveness and use of optimum resources which goes in a long way to support the cause of environments when the resources are scarce and depleting at very fast rate. The whole gamut of activities related to SCM are directly related to the sustainability of environment.

The object of elucidating the above case study is to cite an example of sound supply chain system which is not only requiring for a successful business but also become indispensable for the sustainability of the environment. The issues related to environment protection need an inclusive approach. World community cannot afford to have any more uncontrolled experiment with the resources on earth, after all this is the only house (earth) we have to live.

Sustainable food supply chain

The UK Sustainable Development Commission (SDC; DEFRA 2002) ----- has combined many different stakeholder views to produce an internationally

applicable description of 'sustainable food supply chains' as those that:

- I. Produce safe, healthy products in response to market demands and ensure that all consumers have access to nutritious food and to accurate information about food products.
- II. Support the viability and diversity of rural and urban economies and communities.
- III. Enable viable livelihoods to be made from sustainable land management, both through the market and through payments for public benefits.
- IV. Respect and operate within the biological limits of natural resources (especially soil, water and biodiversity).

The Problems of poor food supply chain policies

- Following are major problems encountered by the poor food supply chain policies. It gives ample proof that agriculture food supply chain sector deserves an urgent attention in the form of policy intervention and legal system for further improvement and development.
- High value commodities are often perishable in nature and lack of coordinated supply chains can result in significant post-harvest losses and low net returns to the farmers as well as the firms. Horticultural commodities are vulnerable to both production and price risks, and the lack of risk-mitigating measures such as crop insurance or assured markets compound these risks. (Gulati 2008)
- Lack of transparency, tracking and traceability in the supply chain
- Lesser control of product safety and quality across the supply chain
- Investment, benefits and risks not shared by all the partners in the chain
- Poor shelf life of products and lack of farmers awareness and knowledge.

- Lack of storage and other post harvest facilities, absence of innovative technology including cool chain, poor and uneconomic handling, transportation, storage etc. causing post harvest losses in food products.

Policy Implications:

Spurred by drivers such as technological developments, demographic changes, changing consumer preferences, trade liberalization and financial capital mobility, food and agricultural systems are being forced to adapt and modernize. Increasingly, such systems are becoming organized into tightly aligned chains and networks, where the coordination of production, processing and distribution activities is closely managed in these modernized systems.

The above transformations, and the organizational responses in the SCM, are creating challenges and opportunities for not only producers, processors, wholesalers, retailers and other supply chain actors but also to policy makers. Apprehensions are growing not only in India but entire developing countries that not only farmers and small medium sized enterprises are vulnerable to exploitation due to the dominant position of the corporate world. But the greatest casualty will on environment. The sector deserves adequate legal protection because of the Constitutional **Mandates for the Environmental Protection:** Environment protection in an explicit manner into the Constitution dealt under various articles: Fundamental Rights: Article 14, 15, 21, 21(C), 32 Directive Principles of State Policy: Article 39, 42, 47, 48(A), 49, 51 Fundamental Duties: Article 51(A) g Relations between Union and States: Article 253.

The right to clean environment as one of the fundamental rights is taken care under the Articles 14, 15, 21, 21(C), 32. In Indian Council for Environ-Legal Action vs. Union of India (AIR 1996 SC 1446)¹⁶ the Supreme Court has implemented the right to wholesome environment as part of the Right to Life enshrined in Article 21.

Thus Right to Life envisaged in the Article means something more than survival of animal existence. It

includes right of healthy living. The Andhra Pradesh High Court in MP **Rambabu vs. Divisional Forest Officer** (AIR 1997 SC 3297), has rightly observed- "In terms of Article 21 of the Constitution, a person has a right to a decent life, good environment and maintenance of ecology."

Conclusions :

As in other areas of strategic management, the supply literature is 'chained to the value chain', to borrow Normann's phrase. This paper clears reservations as to the utility of the VCM and the idea of value systems as general representations of value creation, coordination and positioning in SCRs. It suggests that VCA including the VNL provides a productive alternative, and can disclose a number of complexities in SCRs, including differences in value creating reasoning, sets of interdependencies and more complex supply chain structures.

The models offered in VCA provide different analytical insights. These insights will be of interest in varying degrees to different managers, depending on their firm's particular activities, but an understanding of value reasoning models can be helpful across a more generalized area than is specifically demonstrated here. Manufacturing and product focused firms running their own distribution chains or networks can benefit from an alternative view of mediation and understanding of how different value reasoning co-exists. Likewise, the notions of over and under current activities and the positioning options they disclose should attention both pure logistics operators and product managers operating their own supply chains.

In light of above effective model it can be concluded that the supply chain model developments have lots of scope and need to be adopted at every level of food chain or any other precious or semiprecious supply of resources.

It will not be out of context to say that the effective model of Supply chain will not only enhance business and jobs opportunities but also safeguards the environment protections.

References

1. A. Cox and R. Lamming, Managing supply in the firm of the future, *European Journal of Purchasing & Supply Management* 3(2), 53-62 (1997); R. Lamming, T. Johnsen, J. Zheng and C. Harland, An initial classification of supply networks, *International Journal of Operations & Production Management* 20(6), 675-691 (2000).
2. A. Hinterhuber, Value Chain Orchestration in Action and the Case of the Global Agrochemical Industry, *Long Range Planning* 35, 245-267 (2002); J. Birkinshaw, Managing Internal R&D Networks in Global Firms: What Sort of Knowledge is Involved?, *Long Range Planning* 35, 245-267 (2002); M. Kodama, Knowledge Creation through Networked Strategic Communities: Case Studies on New Product Development in Japanese Companies, *Long Range Planning* 38, 27-49 (2005); S. J. G. Girod and A. M. Rugman, Regional Business Networks and the Multinational Retail Sector, *Long Range Planning* 38, 335-357 (2005).
3. C. Stabell and Ø. D. Fjeldstad, Configuring value for competitive advantage: on chains, shops and networks, *Strategic Management Journal* 19(5), 413-437 (1998); In order to understand different type of business activities this approach has recently M. Christopher, *Logistics and SCM: Strategies for Reducing Cost and Improving Service*, Financial Times & Pitman Publishing, London (1998); J. H. Dyer, D. S. Cho and W. Chu, Strategic supplier selection: The next "best practice" in SCM, *California Management Review* 40(2), 57-77 (Winter (1998)); R. B. Handfields and E. L. Nichols Jr., Introduction to SCM, Prentice-Hall, New Jersey (1999); H. L. Lee, Aligning supply chain strategies with product uncertainties, *California Management Review* 44(3), 105-119 (Spring (2002)).
4. DEFRA. DEFRA Publications; London, UK: 2002. The strategy for sustainable farming and food: facing the future. p. 51.
5. G. T. M. Hult, D. J. Ketchen Jr. and E. L. Nichols Jr., An examination of cultural competitiveness and order fulfilment cycle time within supply chains, *Academy of Management Journal* 45(3), 577-586 (2002).
6. Gulati, Ashok and Thomas Reardon.2008. Organized retail and food price inflation-Opening the 'Black Box'. Business Line, 24th May 2008.
7. See e.g. J. Johanson and L.G. Mattsson, Network Positions and Strategic Actions - An Analytical Framework, in B. Axelsson and G. Easton (eds.), *Industrial Networks: A New View of Reality*, Routledge, London, 205-217 (1992); L.E. Gadde and H. Ha°kansson, *Supply Network Strategies*, Wiley, Chichester (2001); H. Ha°kansson and D. Ford, How should companies interact in business networks, *Journal of Business Research* 55(2), 133-139 (2002); G. Lorenzoni and C. Baden-Fuller, Creating a strategic center to manage a web of partners, *California Management Review* 37(3), 146-163 (1995); J. H. Dyer and K. Nobeoka, Creating and managing a high-performance knowledge-sharing network: The Toyota case, *Strategic Management Journal* 21, 345-367 (2000); R. Gulati, N. Nohria and A. Zaheer, Strategic networks, *Strategic Management Journal* 21, 203-215 (2000).
8. K. M. Eisenhardt, Building theory from case study research, *Academy of Management Review* 14(4), 532-541 (1989).
9. M. L. Fisher, What is the right supply chain for your product? *Harvard Business Review March-April*, 105-116 (1997)
10. M. E. Porter, *Competitive advantage*, The Free Press, New York, NY (1985).
11. For discussions on the recent growth in the third party logistics market, as well as in the number of logistics service providers offering third party services, see M. Berglund, P. van Laarhoven, G. Sharman and S. Wandel, Third party logistics: Is there a future?, *International Journal of Logistics Management* 10(1), 59-70 (1999); G Persson and H. Virum, Growth strategies for logistics service

- providers: A case study, *International Journal of Logistics Management* 12(1), 53-64 (2001).
12. R. Normann and R. Ramirez, From Value Chain to Value Constellation: Designing Interactive Strategy, *Harvard Business Review July-Aug.*, 65-77 (1993);
 13. Advocated by e.g. R. Amit and C. Zott, Value creation in E business, *Strategic Management Journal* 22(6/7), 493-521 (2001); A. N. Afuah and C. Tucci, *Internet business models and strategies: Text and cases*, McGraw-Hill, New York (2000).
 14. Y. S. Lincoln and E. G. Guba, *Naturalistic Inquiry*, Sage, Newbury Park, CA (1985); R. E. Stake, Case studies, in N. K. Denzin and Y. S. Lincoln (eds.), *Handbook of qualitative research*, Sage, Thousand Oaks, 435-454 (2000).
-

The Inner Story of Growth of Engineering Sector In India

Dastageer Alam*, Nadeem Merchant **

Abstract

It was not very long ago when Indian products, much like the caricature of an Indian in the westerner's psyche were objects of ridicule in the international market. Cheap in quality, poor in finish and often defective, Indian companies were afraid even to think about exports. Till late eighties there were several instances where final consignments exported from the country were rejected due to poor quality. Even with extremely low prices, our products could not find a place in the international market, India's export performance was constrained by factors like marketing inefficiency, Improper design and packing, infrastructural bottlenecks, absence of effective pre-shipment Inspection, poor handling facilities etc.

After globalization and liberalization the "Made In India" became a respectable tag. There has been a constant growth in exports from the country and engineering goods export is responsible for 28.54% (2007-08) of the total. According to recent report "engineering exports grew by 80% i.e 60 billion \$ this fiscal from 33.35 billion \$ in the same period last fiscal ("The Hindu" dated 5th March 2011). But negative balance of payment is posing worrisome condition. The paper deals with the growth trends of engineering goods, imports scenario, trade deficit and ways and means to address the embedded issues.

Keywords : Engineering goods export, Overall trade balance, Textile sector trade balance.

Introduction

Due to drastic structural changes, the rebalancing of globe has begun. World will now experience different growth rates and an increasing share of east in global trade with changing power equations.

Macro economically speaking, India has attained better structural position and its outlook remains bright because:

- Approximately 55% of GDP is domestic consumption.
- Dependence on exports is low.
- Saving rate is high.
- Larger young population.
- Fiscal system is robust with a vibrant equity market in place.

* Professor, PG Dept of Business Administration, Mangalore, Email: dalam53@rediffmail.com

** Asst Professor, AIAIMS, Mumbai, Email: nadeem2406@rediffmail.com

The Eleventh Plan has clearly identified areas of focus such as infrastructure subsidy-revamp from general to specific and more efficient distribution; expenditure on health and education, energy policy; agri-reform covering land tax, cooperative and supply chain and financial inclusion. The issue is of execution. It is important that how government puts in place

Objective

Behind the robust growth of export, import scenario is showing a gloomy picture and negative trade balance of engineering goods is hovering around Rs. 18000 crore from 1997-98 onwards, which rose to Rs.1,46,000. Crore in 2008-09 appropriate system for budgeting, monitoring and accountability so that intended objectives are attained.

This paper is an attempt to highlight the imports of engineering goods and to suggest ways to make the balance of payment positive.

Research Methodology



researchers have Ministry statistics reports and 1 on the 2 years finding the particular al trade as been and for balance give a

stic but posing of the rming.

Graph No1 shows the criticality of issue. Shankar Acharya who has been chief economic advisor to Government of India believes that the scenario is very similar to characteristic of Indian economy in the late 1980s which culminated in an excruciating Balance of Payment and overall financial situation for the government at the start of 1990s.

Graph No. 1

Projected Source: RBI, & Goldman Sachs; 2010, as given in Business India February 20 2011, P44.

Senior officials of Ministry of Finance also point to the inherent dilemmas of other policy options that might have a bearing on CAD. The government can go for direct restrictions on imports, but this is a bad practice for Government and economy as well.

Moving from macro scenario of Indian economy to micro i.e. to Engineering goods Industry which is called “Engine of Growth” of the country, it is found that despite of robust growth in exports Balance of Trade condition is worrisome

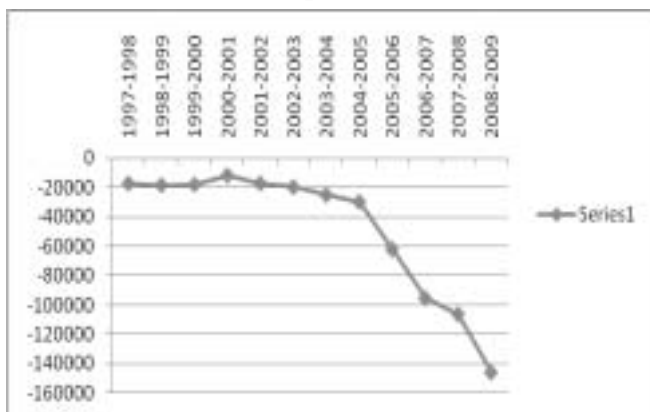
Table No 1

Sr. no	Year	Trade Balance (Crore)
1	1997-1998	-17413.6998
2	1998-1999	-18499.2798
3	1999-2000	-18181.5677
4	2000-2001	-11929.6284
5	2001-2002	-17323.705
6	2002-2003	-19805.1615
7	2003-2004	-25176.3466
8	2004-2005	-29862.3112
9	2005-2006	-62148.9563
10	2006-2007	-95376.5381
11	2007-2008	-106442.4678
12	2008-2009	-146011.0275

Import-Export Trade Deficit of the Engineering Sector in 12 Years

Graph No 2 depicts the striking negative balance of trade from 2003 onwards. From 1997-98 the negative trade balance was hovering around Rs.18000 crore, but from 2003 onward unabated, uncontrolled and a steep fall in the balance of trade has taken place and the trend is still continued with the same pace. There is an emergent need to have stringent measures to cease the falling graph.

Graph No 2



Graph Showing Balance of Trade – Current Account of the Engineering Sector from the year 1997 to 2009

In 1997-98 it was around Rs. 17,500 Crore and now in the year 2008-09 it is exceeding the figure of Rs.1, 46,000 Crore. Balance of Trade is a cumulative effect of continuous rising negative CAD.

Since engineering goods export is responsible for 28.54 % (2007-08) of total export earning of the country. It is also responsible for -0.931 % of negative Balance of Payment (out of -3.5 % overall) of the country.

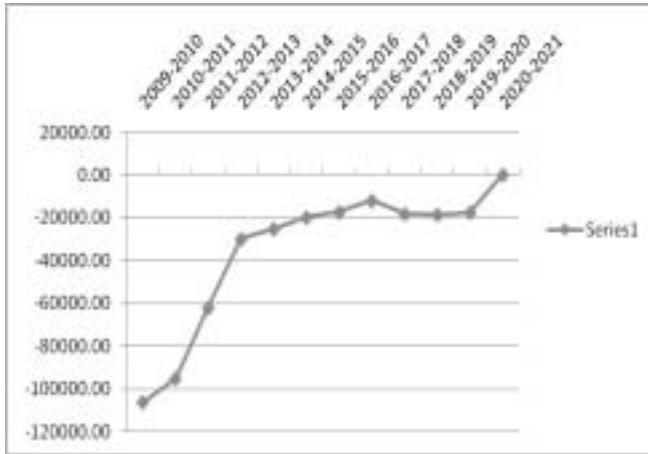
It seems that Govt. of India Ministry of commerce has not made introspection for the Engineering goods industry. What is needed is that Engineering goods Development Council (EDC) is to be established. This council should be given with responsibility to develop engineering industry for the goods which are imported and for which we do have raw material and technology as well. This will slowly reverse the curve and Balance of Payment condition will become favourable.

Table No 2

Sl no	Year	Rev TB in Crore
1	2009-2010	-106442.47
2	2010-2011	-95376.54
3	2011-2012	-62148.96
4	2012-2013	-29862.31
5	2013-2014	-25176.35
6	2014-2015	-19805.16
7	2015-2016	-17323.71
8	2016-2017	-11929.63
9	2017-2018	-18181.57
10	2018-2019	-18499.28
11	2019-2020	-17413.70
12	2020-2021	215.00

Projected Recovery of Balance of Trade in coming 12 years

Graph No 3



Graph Showing projected recovery of Balance of Trade in coming 12 years

Given above is the projected figure for coming 12 years to reverse the scenario. If government is enthusiastic enough, higher targets per annum may be fixed and an early recovery is very well possible. The recent exponential growth of 80% in engineering exports is a foreboder of good times ahead and it seems that projected recovery is not beyond achievable targets. Honorable Minister of Commerce and Industry, Mr. Anand Sharma has revised the target for achieving 500 billion in exports by 2013-14.

The case cited is specific for engineering goods industry to highlight the issue. But the same may be true for every sector where unfavorable balance of trade situation is there. Needless to say that country has enough potential to mar all adverse effects provided concerted effort is made.

It is hoped that CAD will go off and all other adverse interruptions may be tidied over and economic health of the country will improve.

Our textile sector is a shining example of a favourable balance of trade where only three items forms around 31% of the total export earning of the country. The following table No 3 substantiates the above statement.

Table No 3

Sl No	Foreign Exchange Earners(Export >Import)	Value Of Earnings in Rupees (crore)	Percentage of total country earnings of 13 years (1996-97 to 2008-093)
1	Cotton	13521291	8.3590
2	Articles of apparel and clothing accessories, knitted or crocheted	14262395	8.8171
3	Articles of apparel and clothing accessories, not knitted or crocheted	22473032	13.8930
	Total Earnings	50256718	31.0691

Value of the earnings and percentages in total earnings of 13 years (1996-97 to 2008-09)

CONCLUSION

In spite of this vigorous growth in exports, the balance of trade condition is worrisome. So much so that engineering goods industry which is called “Engine of Growth” of the country was also hovering around Rs 18000 crore of negative trade balance from 1997-98, but from 2003 onwards an unabated, uncontrolled and a steep fall in balance of trade has taken place and the trend is still continued with the same pace. In the year 2008-09 it was exceeding the figure of 146000 crore. Balance of trade is a cumulative effect of continuous rising negative CAD. Since engineering goods export is responsible for 28.54% (2007-08) of the total export earning of the country, it is also responsible for 0.931% of negative balance of payment (out of – 3.5% overall) of the country.

High profile growth of exports is an indicator of high calibre of the engineering industry. Our other sectors for example textile industry has emerged as a shining example of capability of Indian industries. It seems that Government of India, ministry of commerce has not made proper introspection of engineering good industry which is capable of minimizing imports and reducing balance of payment deficit. It is a strongly felt that creation of an Engineering goods Development

The Inner Story of Growth of Engineering Sector In India

Council (EDC) is battle cry in the present scenario to develop engineering industry to produce those items which are imported and for which technology and raw materials as well is available in the country. This will slowly reverse the curve and balance of payment would become favorable.

References

Books

1. A.N.Agrawal(2008), *Indian Economy-Problems of Development and Planning*, (34th Edition), New Age International Publishers, New Delhi,.
2. Charles W L Hill and Arun Kumar Jain(2006), *International Business-Competing in the Global market place*, Tata McGraw Hill, New Delhi,.
3. Francis Cherunilam(2007), *International Business-Text and Cases*, Prentice Hall of India, New Delhi,.
4. Misra and Puri(2009), *Indian Economy*, (27th Edition), Himalaya Publishing House, Mumbai,.

5. Raj Agrawal, *Indian Foreign Trade*, Excel Books, New Delhi, 2001.
6. Samuelson and Nordhous(2005), *Economics*, (18th Edition), Tata McGraw Hill, New Delhi,.
7. Willaim Boyes and Micheal Melvin (2003), *Principles of Economics*,Cengage Learning India Pvt. Ltd., New Delhi.

Articles

8. Business India, 2011, Feb 20,
9. The Hindu, 2011, Mar 5,

Websites :

10. Department of Commerce, Government of India - www.commerce.nic.in
11. Reserve Bank of India – India’s Central Bank - www.rbi.org.in

Issues in Agriculture Credit in India: An Assessment

Rajeshwari Padmanabhan*

Abstract

This paper attempts to analyze the issues in agricultural credit in India. The analysis reveals that the credit delivery to the agriculture sector continues to be inadequate. It appears that the banking system is still hesitant to purvey credit to small and marginal farmers. This situation calls for concerted efforts to augment the flow of credit to agriculture, along with innovation in product design and methods of delivery (like Business Correspondent, Mobile Banking), through better use of technology and related processes. Facilitating credit through processors, input dealers, NGOs etc. that are vertically integrated with the farmers, including through contract farming, for providing them critical inputs or processing their produce, could increase that credit flow to agriculture significantly. Micro Finance also needs to be pursued to assist poor to graduate into micro enterprise. RRBs have a crucial role to play in purveying credit to tribal population and neglected segments.

Index Terms - Agriculture Credit, Access to financial services, Business Correspondent, Credit Delivery, Financial Inclusion, Micro Enterprise, Micro Finance.

1. Introduction

Gujarat has recorded exceptionally high growth rate ranging 9%-11% per annum in its agricultural state domestic product (SDP) since the early years of the new millennium [5]. This is in sharp contrast to the rather mediocre growth rate of 2.9 % per annum recorded at the national level. Apart from availability of all necessary inputs, canal irrigation, roads, management of the ground water economy etc., improved market access, technical support, extension and credit has actually contributed a lot to accelerating agricultural growth in the state through a broad spectrum of policy initiatives.

2. Brief Survey of the Literature

In the book 'Agrarian crisis in India' edited by D Narasimha Reddy and Srijit Mishra [7], S.L.Shetty [8] traces the growth of institutional credit to agriculture which has been an area of concern as credit becomes crucial for cultivation. The share of loans to agriculture in the commercial bank lending has recorded smart increase after bank nationalization. With the onset of banking sector reforms starting in the early 1990s, loans to agriculture steadily declined to touch a low of 11% in 2004. NSS Survey also highlighted an increase in the share of informal sources in the indebtedness of rural as

Rajeshwari Padmanabhan is currently working as Associate Professor, Department of Business Economics Rizvi College of Arts, Science and Commerce, Mumbai. E-mail: raji3008@gmail.com

well as agricultural households after twenty five years of decline in their share in rural indebtedness. Small and marginal farmers, dependent on non-institutional sources of credit, were paying exorbitant rates of interest, sometimes more than 30 p.c. ¹

Ramakumar and Chavan [1] have shown that the growth in agricultural credit in the 2000s has largely come about due to a) high growth in indirect finance to agriculture rather than direct finance to cultivators; b) changes brought about in the definition of "indirect finance" (which now categorizes loans given to dealers of agricultural machinery, state electricity boards and non banking financial companies as credit to agriculture) and c) sharp increases in the number of loans with a credit limit of Rs.10 crore and above, and particularly, Rs.25 crore and above (which implies loans to big cultivators and businesses) and a corresponding decline in the share of direct advances with credit limit of less than Rs.25,000.

The emphasis by many agricultural economists on micro finance institutions and micro credit as a way out of the problems of small borrowers do not appreciate the problems with existing micro credit schemes, such as the high rates of interest, weekly repayment schedule and rigid norms for repeat loans.

Balasaheb Vikhe Patil [6], former union minister of state for finance, opined that that rural indebtedness, an obstacle for development, required in-depth analysis to tackle the problems in its entirety.

SECTION I

Broad Perspective

The Agricultural Credit Policy emphasizes augmenting credit flow through credit planning, region-specific strategies, rationalization of lending policies & procedures and reducing the cost of borrowing. Bank credit available to the farmers in the form of short term credit for financing crop production programmes and medium term or long term credit for financing investment in agriculture and allied activities like land development,

minor irrigation, farm mechanization, dairy development, poultry, animal husbandry, fisheries, plantation and horticulture etc.

The decline and uncertainty in earnings from agricultural operations, along with the increasing dependence on purchased inputs means a higher level of borrowings, including borrowings from informal sources and consequent difficulties in meeting repayment obligations, which add to the farmers' distress. The problem is compounded by the near absence of effective risk mitigation measures in the field and the insensitivity of rural institutions.

While effective use of credit could lead to usage of adequate and quality inputs and better productivity, high indebtedness could indicate stagnation, economic decline and problems in repayment. Indebtedness is that level of debt burden for the individual, which offsets the process of credit recycling, impedes production and productivity and forces a person into an intractable vicious debt trap.

While the institutional credit for agriculture has expanded after bank nationalization, from Rs 1,865 crore in 1971-72 to Rs 69,560 crore in 2002-03, the credit needs of agriculture have not been fully met. According to the NSSO [10], only 48.6% of farmer households were indebted, of which only 57.7% were indebted to institutional agencies. In other words, only 28.04 p.c. of farmer households were indebted to institutional agencies. This reflects high degree of financial exclusion in the rural areas. According World Bank survey [9] ², Uttar Pradesh (UP) and Andhra Pradesh (AP) had shown similar results.

SECTION II

Agricultural Credit: Discernible Trends:

A multi-agency approach has been adopted for purveying credit to agricultural sector. The policy of agricultural credit has been guided mainly by considerations of ensuring adequate and timely availability of credit at reasonable rates. Over time,

spectacular progress has been achieved in terms of the scale and outreach of institutional framework for agricultural credit. Some of the major discernible trends are as follows:

1. Over time the public sector banks have made commendable progress in improving the outreach, particularly after nationalization of banks. The number of branches of public sector banks increased rapidly from 8,262 in June 1969 to 68,355 by March 2005 (Economic Survey 2005-06, Government of India).
2. With the widening of the spread of institutional machinery for credit and decline in the role of non-institutional sources, some reversal in the trend was observed during the 1990s.
3. NSSO Survey (2003) reveals that the share of non-institutional credit has gone up which is a cause of concern (See Table 1).
4. The recent efforts to increase the flow of credit to agriculture seems to have yielded better results in the recent periods as total institutional credit to agriculture recorded a growth of around 26% during 2004-05 to 2010-11 compared to 18% during 1995-96 to 2003-04 from little over 12% during 1986-87 to 1994-95. (See Table 2).

Money Lenders:

It is extremely disturbing that even after more than 40 years of nationalization and over 25 years of targeting credit for agriculture, in AP and Rajasthan the total debt of the farmer households from all institutional sources put together was less than that from the money lenders. Further, in Punjab, Assam and Bihar, the total debt of the farmer households from institutional agencies was less than from non-institutional agencies [10].

Table 3 clearly reveals what ails rural agricultural credit in India. The formal institutions offer poor quality service through inadequately manned branches under a mandatory rural branch posting policy with a short term stay, which gives little time to the staff to develop knowledge about the area and the people. Where the

loan approval takes an average 33 weeks, the farmers cannot rely on this source of financing. It is in this context, that the decline of the long term cooperative credit institutions had a serious adverse impact particularly on the small and marginal farmers who find it extremely difficult to approach the commercial banks.

Restructuring Cooperative Credit:

The task force under the chairmanship of Professor A.Vaidyanathan for suggesting measures for the revival of cooperative credit institutions set up by GoI recommended a financial package of Rs. 14,839.00 crore for rural credit cooperative institutions. NABARD has been designated as the implementing agency for the revival of the short-term cooperative credit scheme. For guiding and monitoring the implementation of the revival package, a National-Level Implementing and Monitoring Committee (NIMC) have been set up under the chairmanship of the Finance Secretary, MoF, GoI. The provision of financial assistance under the package has been linked to reforms in the cooperative sector. In order to avail financial assistance under the package, the state governments are required to sign a MoU with NABARD, committing to implement the legal, institutional and other reforms as envisaged in the revival package. In all, twenty five state governments have signed MoUs with the Government of India. The same task force has also submitted its report for revival of the long-term cooperative credit structure. The recommendations are still under consideration of the Government of India.

Farmers: In Dire Straits:

The farmers' suicide in different states has highlighted the problem of indebtedness of farmers. Government of India constituted an Expert Group under R.Radhakrishna to look into the problem of agricultural indebtedness in its totality and suggest measures to provide relief to farmers across the country.³ The Expert Group recommendations covers immediate credit measures, financial architecture, institutional architecture, risk mitigation measures and other measures.

The Indian farmers are distressed, and therefore no half measures would do. The need is to bring agricultural

and farmers to the centre stage of our planning system at the earliest. Certainly 60 years is a long time. The increasing disparities in the rural and urban incomes cannot be ignored. The people in the countryside feel neglected and perhaps are fast losing their patience. The elusive “inclusive growth” would not come by mere announcements but only by a non-negotiable approach of putting the farmer at the centre stage pursued wholeheartedly. ⁴

Rehabilitation Package for Distressed Farmers:

The Government of India approved a rehabilitation package of Rs 16978.69 crore for 31 suicide-prone districts in the states of Andhra Pradesh, Maharashtra, Karnataka, and Kerala. The package has been in implementation over a period of three years and includes both immediate and medium-term measures. The rehabilitation package aims at establishing a sustainable and viable farming and livelihood support system through debt relief to farmers, improved supply of institutional credit, a crop-centric approach to agriculture, assured irrigation facilities, watershed management, better extension and farming support services, and subsidiary income opportunities through horticulture, livestock, dairying, fisheries, etc.

SECTION III

Issues and Concerns:

Despite the significant strides achieved in terms of spread, network and outreach of rural financial institutions, the quantum of flow of financial resources to agriculture continues to be inadequate. One of the major impediments constraining the adoption of new technological practices, land improvements and building up of irrigation and marketing infrastructure has been the inadequacy of farm investment capital. Farmers seem to borrow more short-term credit in order to meet input needs to maintain continuity in agricultural operations. From supply side perspective too, short-term credit bears low credit risk, lower supervision and monitoring costs, and advantageous for asset liability management.

The flow of investment credit to agriculture is constrained by host of factors such as high transaction costs, structural deficiencies in the rural credit delivery system, issues relating to credit worthiness, lack of collaterals in view of low asset base of farmers, low volume of loans with associated higher risks, high man power requirements, etc.

The large proportion of population in the lower strata, having major share in the land holdings, receives much less credit than its requirements. The growing disparities between marginal, small and large farmers continue to be a cause for concern.

The tragic incidents of farmers’ suicides in some of the states have been a matter of serious concern. A study⁵ was conducted in some regions of Andhra Pradesh to go into the causes of such tragedies and to suggest short and long term measures to prevent such unfortunate incidents. The study has identified crop losses, consecutive failure of monsoon, recurrent droughts, mounting debts, mono-cropping, land tenancy, as some of the main causes which led many distressed farmers to commit suicide. Of the total number of suicides cases reported, 76% of the victims were dependent on rain-fed agriculture and 78% were small and marginal farmers. An important finding of the study was that 76% to 82% of the victim households had borrowed from non-institutional sources and the interest rates charged on such debts ranged from 24% to 36%. The study has recommended several measures to tackle the situation. These include improvement irrigation coverage, crop diversification, promotion of animal husbandry as an alternative source of income, better accessibility to institutional credit and overall improvement of the marketing infrastructure.

SECTION IV

Suggestions

The cooperative credit structure needs revamping to improve the efficiency of the credit delivery system in rural areas post implementation of Vaidyanathan Committee recommendations. Recapitalization has been

linked to legal and institutional reforms by State Governments aimed at making cooperatives democratic and vibrant institutions operating on sound business practices, governance standards and regulated at the upper tiers by the RBI.

The competition and search for higher returns has made commercial banks to seek profitable avenues and activities for lending such as financing of contract farming, extending credit to the value chain, financing traders and other intermediaries, which needs to be encouraged. While institutional system and products such as future markets, and weather insurance have great potential to minimize the risk of lending, the process of their development needs to be carried forward.

Merging and revamping of Regional and Rural Banks (RRBs) that are predominantly located in tribal or backward regions is seen as a potentially significant institutional arrangement for financing the hitherto unreached population.

The experience of micro finance proved that the “poor are bankable” and creatively harnessing their savings is a key success factor. The Self-Help-Group (SHGs)-Bank linkage programme is built around the existing banking infrastructure, the need for the creation of a new institutional set up or introduction of a separate legal and regulatory framework has been obviated.

How SHGs can be induced to graduate into matured levels of enterprise needs serious thought. The SHG Bank-linkage programme also needs to introspect whether it is sufficient for SHGs to only meet the financial needs of their members, or whether there is a further obligation on their part to meet the non-financial requirements necessary for setting up business and enterprises. State Governments have to make critical assessment of the manpower and skill sets available with them for forming, nurturing, handholding and maintaining SHGs over time. The best practices in the area need to be examined for evolving policy. Since, the access to credit by small and marginal farmers has been constrained by lack of collaterals, micro finance, which

works on social collaterals, can go a long way in catering to their requirements. Hence, there is need to promote micro finance (Joint Liability Groups) more vigorously.

To conclude, an assessment of agriculture credit situation brings out the fact that the credit delivery to the agriculture sector continues to be inadequate. It appears that the banking system is still hesitant to purvey credit to small and marginal farmers. The situation calls for concerted efforts to augment the flow of credit to agriculture, with efforts at innovations in product design and delivery (the use of Business Correspondent is yet to be actively adopted by the Banks), through use of technology.

Notes:

1. In this essay, Shetty [8] poses the question: How to bring about coexistence of banking reforms with societal goals of banking policies addressed at meeting the financial needs of small producers like peasant farmers?
2. Carried out by the World Bank and the National Council for Applied Economic Research.
3. The Expert Group on agricultural indebtedness was set up in August 2006 under the chairmanship of R.Radhakrishna, Indira Gandhi Institute of Development Research, Mumbai.
4. In connection with it, it is relevant to refer to “Bhagwati hypothesis”- ‘growth had to be the principal, not the only strategy for raising farm incomes, and hence consumption and living standards of the farm households. If there was no way to significantly affect the share of the pie going to the bottom 30 p.c., the most important thing was to grow the pie. Growth, in that sense, was not a passive, trickle-down, inclusivestrategy for helping rural poor; rather it was an active, pull-up strategy instead”.
5. As per the information available in a speech delivered by the Union Minister of Agriculture at the National Development Council, New Delhi on June27, 2005.

Selected Reference:

- [1] Chavan, Pallavi and R.Ramakumar, (2007), Revival of Agricultural Credit in the 2000s: An Explanation, *Economic & Political Weekly*
- [2] Golait, Ramesh (2007), Current Issues in Agriculture Credit in India: An Assessment, *Reserve Bank of India Occasional Papers*, Vol28(1) (summer).
- [3] Government of India, *Economic Survey*, various issues.
- [4] Government of India(2004), *Task Force on Revival of Cooperative Credit Institutions*, (Chairman: A. Vaidyanathan)
- [5] Gulati, A. T. Shah and G. Shreedhar, (2009), *Agriculture Performance in Gujarat since 2000: Can Gujarat be a 'Divadandi' for other states?*, International Water Management Institute, Colombo and International Food Policy Research Institute, New Delhi,.
- [6] Patil, Balasaheb Vikhe(2008), Agricultural Indebtedness: Crisis and Revival, *Economic and Political Weekly*, Feb2-8, 2008, Vol.XLIII(.5).
- [7] Reddy, D.Narasimha and Srijit Mishra (Eds) (2009), *Agrarian crisis in India*, Oxford University Press.
- [8] Shetty, S.L (2009), Agricultural Credit and Indebtedness, in D.Narasimha Reddy and Srijit Mishra (Eds), 'Agrarian Crisis in India', Oxford University Press,.
- [9] Rural Finance Access Survey (RFAS) (2003), Priya Basu and Mihir Srivastava, World Bank
- [10] NSSO (2003), Situation Assessment Survey – Indebtedness of Farm households.

Table 1: Relative Share of Borrowing of Cultivator Households from Different Sources (Per cent)

Sources of Credit	1951	1961	1971	1981	1991	2002
Non-Institutional	92.7	81.3	68.3	36.8	30.6	38.9
of which Money Lenders	69.7	49.2	36.1	16.1	17.5	26.8
Institutional - of which	7.3	18.7	31.7	63.2	66.32	61.13
Cooperative Societies/Banks	3.3	2.6	22.0	29.82	3.63	0.22
Commercial Banks	0.9	0.6	2.4	8.8	5.2	6.3
Unspecified	-	-	-	-	3.1	-
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: All India Debt & Investment Survey/NSSO (2003).

Table 2: Institutional Credit to Agriculture (Rs. Crore)

Year	Cooperative	Share Banks	RRBs (%)	Share	Commercial (%)	Share Banks	Total (%)	(%) Increase
1985-86	3,874	55	-	-	3,131	45	7,005	-
1986-87	4,207	52	-	-	3,809	48	8,016	14
1987-88	4,420	52	-	-	4,009	48	8,429	5
1988-89	4,851	53	-	-	4,233	47	9,084	8

Issues in Agriculture Credit in India: An Assessment

1989-90	5,082	52	-	-	4,719	48	9,801	8
1990-91	3,408	39	-	-	5,438	61	8,846	-10
1991-92	5,800	52	596	5	4,806	43	11,202	27
1992-93	9,378	62	831	5	4,960	33	15,169	35
1993-94	10,117	61	977	6	5,400	33	16,494	9
1994-95	9,406	50	1,083	6	8,255	44	18,744	14
1995-96	10,479	48	1,381	6	10,172	46	22,032	18
1996-97	11,944	45	1,684	6	12,783	48	26,411	20
1997-98	14,085	44	2,040	6	15,831	50	31,956	21
1998-99	15,916	43	2,538	7	18,443	50	36,897	15
1999-2000	18,363	40	3,172	7	24,733	53	46,268	25
2000-01	20,801	39	4,219	8	27,807	53	52,827	14
2001-02	23,604	38	4,854	8	33,587	54	62,045	17
2002-03	23,716	34	6,070	9	39,774	57	69,560	12
2003-04	26,959	31	7,581	9	52,441	60	86,981	25
2004-05	31,424	25	12,404	10	81,481	65	1,25,309	44
2005-06	39,404	22	15,223	8	1,25,859	70	1,80,486	44
2006-07	42,480	18	20,435	9	1,66,485	73	2,29,400	27
2007-08	48,258	19	25,312	10	1,81,088	71	2,54,658	11
2008-09	45,966	15	26,765	9	2,29,177	76	3,01,908	19
2009-10	57,500	16	34,456	9	2,74,963	75	3,66,919	22
2010-11(p)	70,105	16	44,701	10	3,32,706	74	4,47,512	22

p) Provisional ; Note: Commercial Banks and RRBs were clubbed together up to 1990-91.

Source: Economic Survey and NABARD various issues.

Table 3: Aspects of Formal Borrowings and its Costs

Criteria	Banks	Regional Rural banks	Cooperatives
Interest rate (in %)	12.5	11	11
Loan amount received as % of amount applied	91.8	88.2	83.5
% of households reporting bribes	26.8	27	9.7
Time taken to process a loan application-weeks	33	28.5	24

Source: RFAS (2003)

SPECIAL ECONOMIC ZONE IN INDIA- AN ANALYTICAL STUDY

Kiran M. Rege *, Dr.M.Z.Farooqui **, Dr Maqsood A Khan ***, Dr M Khalil Ahmed****

Abstract

India was one of the first in Asia to recognize the effectiveness of the Export Processing Zone (EPZ) model in promoting exports, with Asia's first EPZ set up in Kandla in 1965. With a view to overcome the shortcomings experienced on account of the multiplicity of controls and clearances; absence of world-class infrastructure, and an unstable fiscal regime and with a view to attract larger foreign investments in India, the Special Economic Zones (SEZs) Policy was announced in April 2000.

This article describes the salient features of the Indian embodiment of the model Chinese SEZ, how it evolved and what the various steps are in making an Indian SEZ function: from submitting an application and receiving a Letter of Approval for the establishment of an SEZ to getting the authorized operations and particular units sanctioned, impediments and suggestions to make SEZ effective. The SEZs are tax-free enclaves for investors from India and abroad. The Indian government and the state governments are now finding that it is not enough to promulgate modern laws luring foreign direct investment into India, but that they also have to provide for the concerns and the livelihoods of those affected by the establishment of SEZs.

Keywords: SEZ, Exim policy, EPZ, SEZ Act 2005

1. Introduction:

The Government of India have announced the concept of Special Economic Zones (SEZs) in the year 2000 through a revision in the EXIM Policy 1997-2002 with a view to provide an internationally competitive and hassle free environment for export production. These SEZs are virtually deemed to be a foreign territory within the country free from all the rules and regulations governing the import and export. The SEZs are specifically treated as duty free enclaves for the purpose of industrial, tariff,

service and trade operations with exemption from customs duties and a more liberal regime on levies, foreign investment and other transactions. The domestic regulations, restrictions and infrastructure inadequacies are sought to be removed for creating an investor & industry friendly environment.

An "SEZ" can also be identified as a geographical region which has more liberal economic laws than a country's typical economic laws. Today, there are approximately 3,000 SEZs operating in 120 countries, which account for over US\$ 600 billion in exports and

* Head, Research Cell, Hinduja College, Mumbai, Email id:kmrege@yahoo.com

** Principal, Rizvi College Of Arts, Science & Commerce, Bandra(W), Mumbai, Email id : nuzza@mail.com

***Director, Sydenham Institute of Management Studies and Research and Entrepreneurship Education, Churchgate, Mumbai, maqsoodkhhan@yahoo.com.

****Associate Professor ,HOD (Commerce) in Burhani College of Commerce & Arts, Mumbai, Email id: khalila8@gmail.com.

about 50 million jobs. By offering privileged terms, SEZs attract investment and foreign exchange, spur employment and boost the development of improved technologies and infrastructure.

Most developing countries like India across the world have recognized the importance of facilitating international trade for the sustained growth of the economy and increased contribution to the GDP of the nation. As a part of its continuing commitment to liberalization and to trigger larger flow of foreign and domestic investment for the generation of additional economic activity and creation of employment opportunities, government of India started promoting SEZs. India was one of the first in Asia to recognize the effectiveness of the Export Processing Zone (EPZ) model in promoting exports.

Asia's first EPZ set up in Kandla in 1965. EPZ's could not prove their efficacy in Indian economy and so could not attract larger foreign investments. Therefore, due to the shortcomings experienced on account of the multiplicity of controls and clearances; absence of world-class infrastructure, and an unstable fiscal regime, the Special Economic Zones (SEZs) Policy was announced in April 2000.

2. Aims and objectives of the present study

The present paper aims to focus on the following points:

1. SEZ meaning, importance and Endeavour in India.
2. Incentives and facilities offered to SEZ developers and units in SEZ, in Indian Economy
3. Efficacy of Special Economic Zones Act, 2005 in Indian economy- current status and incremental growth of investments, employment and exports in functional SEZs in India.
4. To cover some of the successful SEZ stories.
5. Impediments and suggested measures to extract the better results.

3. Review of Literature

The concept of SEZ's was largely pioneered by China, wherein the SEZ's contribute to 20 percent of

the total FDI. SEZ is a geographical region with different economic laws than a country's typical economic laws, with the main goal of attracting foreign investment. In economic terms, SEZ is specifically delineated duty-free enclave and shall be deemed to be foreign territory for the purposes of trade operations and duties & tariffs. Countries which have experimented with this concept are China (with great success), UAE, Malaysia, India, Jordan, Poland, Kazakhstan, Philippines, Russia and to some extent North Korea. Apart from Central government, any private/public joint sector or State Government can set up an SEZ. Before recommending any proposal to department of commerce, the States must satisfy themselves that they are in a position to supply basic inputs like water, electricity etc. SEZs have potential to play a key role in economic development of a country, as they did for China. Worldwide, the first known instance of an SEZ seems to have been an industrial park set up in Puerto Rico in 1947 to attract investment from the US mainland. In the 1960s, Ireland and Taiwan followed suit, but in the 1980s China made the SEZs gain global currency with its largest SEZ being the metropolis of Shenzhen. From 1965 onwards, India experimented with the concept of Export Processing Zones (EPZ). These did not quite deliver as much as was expected, however. Thus, in 2000, the new Export and Import Policy allowed for SEZs to be set up in the public, private or joint sector or by state governments. Eight EPZs were converted into SEZs. Altogether, a total of 19 SEZs were established prior to the promulgation of the SEZ Act, which were later - in 2005 - legally deemed as SEZs under the new Act. More than 300 SEZs have obtained either formal or "in principle" approval over the years.

3.1 Salient features of an Indian SEZ

The Special Economic Zones Act, 2005, was passed by Parliament in May, 2005 which received Presidential assent on the 23rd of June, 2005. The draft SEZ Rules were widely discussed and put on the website of the Department of Commerce offering suggestions/comments. Around 800 suggestions were received on the draft rules. After extensive consultations, the SEZ

Act, 2005, supported by SEZ Rules, came into effect on 10th February, 2006, providing for drastic simplification of procedures and for single window clearance on matters relating to central as well as state governments. The main objectives of the SEZ Act are:

- (a) generation of additional economic activity
- (b) promotion of exports of goods and services;
- (c) promotion of investment from domestic and foreign sources;
- (d) creation of employment opportunities;
- (e) development of infrastructure facilities;

It is expected that this will trigger a large flow of foreign and domestic investment in SEZs, in infrastructure and productive capacity, leading to generation of additional economic activity and creation of employment opportunities.

The SEZ Act 2005 envisages key role for the State Governments in Export Promotion and creation of related infrastructure. A Single Window SEZ approval mechanism has been provided through a 19 member inter-ministerial SEZ Board of Approval (BoA). The applications duly recommended by the respective State Governments/UT Administration are considered by this BoA periodically. All decisions of the Board of approvals are with consensus.

SEZs have been enabled with a view to providing an internationally competitive and hassle-free environment for exports. Units may be set up in SEZs for manufacturing goods and rendering services. All the import/export operations of the SEZ units are on a self-certification basis. Sales by SEZ units in the domestic tariff area are subject to payment of full custom duty and to the import policy in force. Furthermore, offshore banking units may be set up in the SEZs. The salient features of the Indian SEZ initiative further include the following points:

Unlike most of the international instances where zones are primarily developed by governments, the

Indian SEZ policy provides for development of these zones in the government, private or joint sector. This is meant to offer equal opportunities to both Indian and international private developers.

100 per cent FDI is permitted for all investments in SEZs, except for activities included in the negative list.

SEZ units are required to be positive net foreign-exchange earners and are not subject to any minimum value addition norms or export obligations.

Goods flowing into the SEZ area from a domestic tariff area (DTA) are treated as exports, while goods coming from the SEZ into a DTA are treated as im-ports. In addition to the duty exemptions, the units in the Indian SEZs do not have to pay any income tax for the first five years and only pay half their tax li-ability for the next two. SEZ developers also enjoy a 10-year “tax holiday”. The size of an SEZ varies depending on the nature of the SEZ. At least 50 per cent of the area of multi-product or sector-specific SEZs must be used for export purposes. The rest can include malls, hotels, educational institutions, etc. Besides providing state-of-the-art infrastructure and access to a large, well-trained and skilled workforce, the SEZ policy also provides enterprises and developers with a favourable and attractive range of incentives.

3.2 Approval mechanism and Administrative set up of SEZs

- **Approval mechanism**

The developer submits the proposal for establishment of SEZ to the concerned State Government. The State Government has to forward the proposal with its recommendation within 45 days from the date of receipt of such proposal to the Board of Approval. The applicant also has the option to submit proposal directly to the Board of Approval.

The Board of Approval has been constituted by the Central Government in exercise of the powers conferred under the SEZ Act. All the decisions are taken in the Board of Approval by consensus. Regarding the overall establishment of an SEZ, one has to differentiate between various processes. The aforementioned process describes the steps involved in an SEZ approval. After introducing the other official agencies, which is necessary to understand the further procedures in the SEZ framework, the other procedures that are required to get the SEZ notified in order to acquire a grant of approval for

- **Administrative set up**

The functioning of the SEZs is governed by a three tier administrative set up. The Board of Approval is the apex body and is headed by the Secretary, Department of Commerce. The Approval Committee at the Zone level deals with approval of units in the SEZs and other related issues. Each Zone is headed by a Development Commissioner, who is ex-officio chairperson of the Approval Committee.

Once an SEZ has been approved by the Board of Approval and Central Government has notified the area of the SEZ, units are allowed to be set up in the SEZ. All the proposals for setting up of units in the SEZ are approved at the Zone level by the Approval Committee consisting of Development Commissioner, Customs Authorities and representatives of State Government. All post approval clearances including grant of importer-exporter code number, change in the name of the company or implementing agency, broad banding diversification, etc. are given at the Zone level by the Development Commissioner. The performance of the SEZ units are periodically monitored by the Approval Committee and units are liable for penal action under the provision of Foreign Trade (Development and Regulation) Act, in case of violation of the conditions of the approval.

3.3 **Incentives and facilities offered to the SEZs**

The incentives and facilities offered to **the units** in SEZs for attracting investments into the SEZs, including foreign investment include:-

- Duty free import/domestic procurement of goods for development, operation and maintenance of SEZ units
- 100% Income Tax exemption on export income for SEZ units under Section 10AA of the Income Tax Act for first 5 years, 50% for next 5 years thereafter and 50% of the ploughed back export profit for next 5 years.
- Exemption from minimum alternate tax under section 115JB of the Income Tax Act.
- External commercial borrowing by SEZ units upto US \$ 500 million in a year without any maturity restriction through recognized banking channels.
- Exemption from Central Sales Tax.
- Exemption from Service Tax.
- Single window clearance for Central and State level approvals.
- Exemption from State sales tax and other levies as extended by the respective State Governments.

The major incentives and facilities available to **SEZ developers** include:-

- Exemption from customs/excise duties for development of SEZs for authorized operations approved by the BOA.
- Income Tax exemption on export income for a block of 10 years in 15 years under Section 80-IAB of the Income Tax Act.
- Exemption from minimum alternate tax under Section 115 JB of the Income Tax Act.
- Exemption from dividend distribution tax under Section 115O of the Income Tax Act.
- Exemption from Central Sales Tax (CST).
- Exemption from Service Tax (Section 7, 26 and Second Schedule of the SEZ Act).

3.4 SEZ Approval Status

The Special Economic Zones Act, 2005, was passed by Parliament in May, 2005 which received Presidential assent on the 23rd of June, 2005 and came into effect on 10th February, 2006. In India formal approval has been granted to 579 SEZ proposals. There are 147 valid in-principle approvals. Out of the 580 formal approvals, 374 SEZs (out of 580) + (7 Central Govt. + 12 State/Pvt. SEZs) have been notified as on 31st December'2010. In Indian economy 130 SEZ's are functional in different states as on 31st December'2010. Up to 30th June, 2009, Total 2,301 units have been approved in various SEZs comprising 1201 units in Govt. SEZs; 600 units under State/Pvt. SEZs; and 500 units under the SEZ Act 2006, With total investment of Rs. 1,14,640.53 cr and providing employment to 3,87,439 persons. In the year of 2008-09 the volume of total exports from SEZs were of Rs. Rs.2,23,132.31 crore with 47% incremental growth from the previous year i.e. 2009-10. These achievements speak itself about the efficacy of SEZ in India.

Table 1: Level of Investment in Functional Sez's In India

INVESTMENT investment (As on 30th June, 2009)	Incremental Investment	Total
SEZs Notified under the Act	Rs.1,04,589.3cr	Rs.1,04,589.3cr
State/Pvt. SEZs set up before 2006	Rs.4,901.27cr	Rs.6,657.58 cr
Government SEZs	Rs.1,114.45 cr	Rs. 3,393.65 cr
Total	Rs.1,10,605.02 cr	Rs.1,14,640.53 cr

Source: Special Economic Zones in India, Ministry of Commerce and Industry, Deptt. Of Commerce, www.sezindia.nic.in

Table 2: State-wise Distribution of Approved Special Economic Zone (As on 31.12.2010)

State	Formal approvals	In-principle approvals	Notified SEZ	Operational SEZ
Andhra Pradesh	109	5	74	32
Chandigarh	2	0	2	1
Chattisgarh	2	2	0	0
Delhi	3	0	0	0
Dadra & Nagar Haveli	4	0	2	0
Goa	7	0	3	0
Gujarat	46	13	29	13
Haryana	45	17	34	3
Himachal Pradesh	0	3	0	0
Jharkhand	1	0	1	0
Karnataka	56	10	36	20

Kerala	28	0	17	7
Madhya Pradesh	14	7	6	1
Maharashtra	105	38	63	16
Nagaland	2	0	1	0
Orissa	11	3	6	1
Pondicherry	1	1	0	0
Punjab	8	7	2	0
Rajasthan	8	11	8	3
Tamil Nadu	70	19	57	22
Uttar Pradesh	33	5	20	6
Uttarakhand	3	0	2	0
West Bengal	22	14	11	5
Total	580	155	374	130

Source: Department of Commerce

Table 3: Sector -wise Distribution of Approved Special Economic Zone

Sector	Formal approvals	In-principle approvals	Notified SEZs	Operational SEZs
Aviation/Aerospace	1	2	2	0
IT/ITES/Electronic Hardware/Semiconductor	351	10	214	62
Textiles/Apparel/Wool	19	12	12	4
Pharma/chemicals	22	2	20	4
Petrochemicals & petro.	4	0	1	0
Multi-Product	23	55	13	13
Building product/material	1	2	1	0
Beach & mineral/metals	2	0	2	0
Bio-tech	30	0	17	1
Engineering	23	9	16	5
Multi-Services/Services	17	14	8	0
Metallurgical Engineering	1	0	0	0

Electronic prod/ind	3	4	3	0
Auto and related	3	5	1	1
Footwear/Leather	7	2	5	2
Gems and Jewellery	11	4	5	3
Power/alternate energy/solar	4	2	2	0
FTWZ	8	9	4	0
Metal/Stain. Steel/Alum/Foundary	9	5	5	1
Food Processing	5	2	4	0
Non-Conventional Energy	5	0	3	1
Plasting processing	0	1	0	0
Handicrafts	4	1	2	2
Agro	5	4	4	0
Port-based multi-product	7	0	2	2
Airport based multiproduct	2	2	0	0
Writing and printing paper mills	2	0	1	0
GRAND TOTAL	573	147	347	101

Source: Department of Commerce

3.4.1 Level of Employment in Functional SEZ's In India

The details of employment generated in the Special Economic Zones are given below:

- SEZs in India provide direct employment to over 6.44 lakh persons;
- The incremental employment generated by the SEZs in the short span of time since the SEZ Act came into force in February 2006, is of the order of 5.09 lakh persons.

3.4.2 Export Performance

The exports in the current year i.e 2010-11 from the SEZs have been to the tune of Rs.2,23,132.31 crore (as on 31st December, 2010). Exports from the

functioning Special Economic Zones during the last six years are in Table.4.

Table 4. Exports from the functioning SEZs

Year	Value (Rs. Crore)	Increase (%)
2005-2006	22, 840	25
2006-2007	34,615	52
2007-2008	66,638	93
2008-2009	99,689	50
2009-2010	2,20,711	121
2010-2011 (April-Sept. 2010)*	2,23,132	47

* Provisional

Source: Department of Commerce

3.5 Some Success Stories in SEZs

Details of some prominent new generation SEZs which have made significant progress in terms of exports, employment and investment generation are given below:

Nokia Special Economic Zone in Tamil Nadu (Telecom equipments SEZ):

- Physical Exports of Rs.10105.66 crore was effected in four years (2006-07 to 2009-10)
- Direct employment provided to 14900 persons.
- Investment of Rs.2702.28 crore has already been made in this SEZ, out of which FDI is Rs.833.51 crore.
- Projected investment of Rs.2930 crore and projected direct employment of 20000 persons.

Mahindra City SEZ, Tamil Nadu (Apparels and fashion accessories; IT/Hardware; auto ancillary):

A cluster of three sector specific SEZs in Tamil Nadu, for Apparels and fashion accessories; IT and Hardware; and Auto ancillary. Employment, investment and exports together for these three SEZs are:

- Physical Exports worth Rs.2485.5 crore was effected in four years (2006-07) to (2009-10).
- Direct employment provided to 16257 persons.
- Investment of Rs.1634.18 crore has already been made in this SEZ, out of which FDI is Rs.191.27 crore.
- Projected investment of Rs.2404.17 crore and projected direct employment of 57236 persons.

Apache SEZ Development India Private Ltd, Andhra Pradesh (Footwear SEZ):

- Physical Exports worth Rs. 144.32 crore was effected in four years (2006-07) to (2009-10).
- Direct employment provided to 6390 persons, out of which 2225 are women employees.

- Investment of Rs.532.02 crore has already been made in this SEZ, out of which FDI is Rs.411.53 crore.
- Projected direct employment of 20000 persons.

Wipro Limited, Andhra Pradesh (IT SEZ):

- Physical Exports worth * 1249.28 crore was effected in three years (2007-08 to 2009-10).
- Direct employment provided to 7569 persons out of which 2984 are women employees.
- Investment of Rs.302.35 crore has already been invested in this SEZ.
- Projected investment of Rs.277 crore and projected direct employment of 9500 persons.

Mundra Port and Special Economic Zone, Gujarat (Multi product SEZ):

- Physical Exports worth Rs.995.96 crore was effected in three years (2007-08) to (2009-10).
- Direct employment provided to 2204 persons, out of which 40 are women employees.
- Investment of Rs.20716.44 crore has already been made in this SEZ, out of which FDI is 190.89 crore.
- Projected investment of Rs.50342.3 crore and projected direct employment of 211426 per-sons.

Reliance Jamnagar Infrastructure Ltd., Gujarat (Multi Product):

- Physical Exports worth Rs.72329.63 crore was effected in two year (2008-09) to (2009-10).
- Direct employment provided to 947 persons, out of which 5 are women employees.
- Investment of Rs.37363 crore has already been invested in this SEZ, out of which FDI is Rs.70 crore.
- Projected investment of Rs.35050 crore.

Suzlon Infrastructure Ltd. Karnataka (Hi-tech Engineering Products & related services SEZ]

- Physical Exports worth Rs.375.95 crore was effected in two year (2008-09 to 2009- 10).
- Direct employment provided to 1244 persons.
- Investment of Rs.601.98 crore has already been invested in this SEZ.
- Projected investment of Rs.2444.32 crore and direct employment of 3100 persons.

1. Impediments and Suggested Measures

Developers of existing special economic zones continue to face problems in accessing credit from banks because of the Reserve Bank of India's categorization of SEZ projects as a real estate activity, which invites stringent capital adequacy norms. The promise of \$500 million-plus investment opportunities in diverse sectors in India was marred by the obstacles at various levels. There is no single window clearance, the government must realize the need to establish a one-stop shop at the Centre to implement policies and procedures to enhance investment as well as facilitate high-value projects across ministries and departments. Multiplicity of agencies is also undermining the investment efforts in the country. "Many agencies are engaged in doing similar activities relating to FDI — such as FIPB, DIPP, FIIA, IC, SIA, and so on," the study said. Bureaucratic delays, discretionary interpretation, vested interests, bias and subjective practices are retarding the pace of FDI in India, it said. There are also 'too many touch points' with officials and agencies at central and state government levels, it said.

Though the draft DTC released by the Government does not specifically talk of any tax incentives, the body language of the Finance Ministry officials including the FM, does make it look like that the tax holiday for SEZ Units would continue under the DTC, in some form or other. Of course, the DTC does talk of grandfathering of the tax exemptions and perhaps, this is meant to cover the tax holiday for SEZ Units. The Electronics and

Software Export Council has also asked for the Finance Ministry to clarify on the availability of the tax holiday for SEZ Units, under the DTC and hence, there is every hope that the tax holiday for the existing SEZ Units would be protected beyond March 31, 2011, as well. Keeping the government's goal of attracting \$150 billion of FDI in mind, the Investment Commission chaired by Ratan Tata has asked the government to provide labour flexibility, remove or reduce restrictions on sectoral caps as well as promote SEZs for key sectors in order to boost investments in the country. In a report submitted to Prime Minister Manmohan Singh, the commission says that the government needs to remove or reduce restrictions on sector caps on all sectors other than those considered strategic. The report asks for the automatic route for all investments within the sector cap. It has also asked the government to provide a level-playing-field in sectors which are dominated by PSUs and establish an independent central regulatory commission that should be headed by a chief commissioner who is appointed by the President or the Prime Minister. On labour, the report asks the government to "provide labour flexibility by removing the requirement of state government approval from chapter V-B and permitting Contract Labour in all areas". For SEZs, the commission says that the government should first promote SEZs for key sectors and then redefine norms on the basis of scale, investment quantum/levels and sector focus.

Apart from these, it has also asked the government to provide long-term visibility and consistency of policy and reduce the number of procedures to ensure greater inflows into the country. The commission has also asked the government to eliminate any scope for discretionary interpretation and establish a VAT like empowered committee framework to sort out centre-state policy issues that need urgent reform. In the report, they have also pointed out inflexible labour laws and bureaucratic delays, discretionary interpretation, vested interest, bias and subjective practices as factors holding back investments flows.

In fact, the Commission has singled out the approval process adopted for getting clearances from the ministry of environment & forests as problem area. In some of

the other recommendations made for the government, the commission has identified the need to create a special high-level fast track mechanism for priority sector projects. It has also asked the government to enhance the availability of skilled manpower for sectors like biotechnology, automotive engineering, textile, engineering, IT. Here, the commission recommends the government to establish new private educational institutes with international collaborators. Above all it is also very important to change the mind set and ensure a common Indian about the misconceptions with regard to development of SEZs i.e. flexibility of labour laws will be within the constitutional limits, and development of SEZs is not to uproot farmers from fertile or non-fertile land rather to avail the advantages of export from that area —on lines of what is done in China and the US.

Essentially, the Indian SEZs were expected to provide world-class infrastructure, similar to what China offers in its SEZs. These expectations have been largely belied. Allowing small sector-specific SEZs has ensured that a lot of SEZs come up with only minimum facilities. These small SEZs are like industrial estates that build minimum infrastructure to enable the units operate within their geographical area but rely heavily on the public infrastructure for their requirements of water, power, roads, ports, civic amenities, residences for employees and so on. In fact, many SEZ developers have done little more than land acquisition and development. If the investment in plant and machinery in SEZs alone is counted, the figures for investment in SEZ may not look all that attractive. Again, the quantum of investment in SEZ projects other than the IT sector may not look all that impressive.

Some SEZs have been created to accommodate only one unit — that of the developer. Such captive SEZs avail of the tax breaks but build infrastructure to meet their own requirements only. The units have come up as a substitute for expansions in the domestic area. Export orders from domestic units have been diverted to these SEZ units to avail the tax benefits. Now, a proposed convention centre has got the SEZ status and even a standalone hotel might get it. Basically, they are real estate ventures. Was the SEZ scheme intended to

encourage investment in and give tax breaks to such ventures?

The finance ministry has always been uncomfortable with so many duty-free enclaves littered all over the country. Besides revenue losses, it has been apprehensive about the administrative hassles. Now, the ministry seems convinced that it is time to check further proliferation of SEZs. Land acquisition issues, global economic uncertainty and now, uncertainty about tax breaks have contributed to lack of enthusiasm about SEZ scheme but more important, serious questions are being raised about the social benefits of the SEZ scheme.

The government must quickly review its present SEZ policy. Beyond a stage, encouraging investment in duty-free enclaves by giving attractive tax breaks merely diverts investment and gives progressively lesser and lesser social benefits.

2. Conclusions

Many experts have expressed concerns over the philosophy of sops boost exports. By now however government seems to be realizing the need for formulating a new Indian model of SEZ. India has in fact, the right mix of factors such as availability of large & skilled workforce, intrinsic comparative advantage in several industries, a strong policy framework, availability of complementing & supporting ancillary industry, an already buoyant export sector & vast local markets. SEZs can combine these factors into a powerful alchemy to power investment creation. Unless remedies can be found out to loosen prevalent rigid labour laws, the SEZs cannot be looked at as a panacea for all economic diseases. The SEZ's could drastically improve the economic activity in the country, make the country's export competitive and globally noticeable, be net foreign exchange earner and provide immense employment opportunity. As compared to china where majority of the SEZ's were setup by the government, similar should be adopted in India, if not fully it should be a public-private partnership and regulatory bodies should be properly managed to weed out fallacies. To be economically viable SEZ's should be approved over a particular land area (greater than 1000 acres) for rapid economic growth in the area

and for it to be profitable and self sustainable. Despite the wide-spread protests, agitations and in some cases socially inconvenient and violent demonstrations, Govt. of India has gone ahead with passing of the necessary legislation and detailed rules and regulations. State Government have followed suit in appropriate manners. In fact it would have been politically more sensible to have collected views of the people at large in some encompassing way before legislation and subsequent implementation.

References:

1. Ghorude K.N.(2008), *India's Special Economic Zones: Role and Critical Success factors*, Himalya Publishing House, Delhi.
2. Kundra, Ashok(2000), *The Performance of India's Export Zones: A Comparison with the Chinese Approach*, Sage Publications, New Delhi
3. Sakharam Shankar (2007), *Special Economic Zones*, Samant Publication, Mumbai
4. Jenkins *et al.* (1998). *Export processing Zones in Central America*, Development Discussion Paper No 646, Harvard Institute for International Development web site: <http://www.scholar.google.com>
5. Knoth, E.V.C. (2000), *Special Economic Zones and Economic Transformation: The Case of the People's Republic of China*, Dissertation, University of Konstanz. Web site: <http://www.scholar.google.com>
6. Madani, D. (1999), *A Review of the Role and Impact of Export Processing Zones*, Washington , DC: World Bank.
7. Aggarwal,A (2004), *Export Processing Zones in India: Analysis of the Export Performance*, ICRIER, Working Paper 148.
8. Srinivasan V.K. & Sundaram(2008), *P.S., SEZ - International Experience and Indian Scenario*, Jan., Media India New Service, Bombay
9. Jinga Diwedi and Kajal Sharma(2008), *Impact of SEZ on Indian Economy* , Southern Economist,
10. H.C. Honnappa and K.G. Ramakrishna SEZs(2009): *Some Critical Issues -*, *Southern Economist*.
11. G. Naresh Reddy(2009), *Special Economic Zones - Engines for Growth* , *The Management Accountant*, May,. 348-354.
12. *Special Economic Zone - An Indian Approach*, *Foreign Trade Review*, 2009, p 52-71.
13. *Times of India*(2006), *Farmers take RIL to court over SEZ land acquisition*, 11* November p.
14. Press release issued by the Public Information Bureau (PIB) of the Government of India dated 5th April 2007. Last read on 12th July 2007 at http://pib.nic.in/release/rel_print_pagel.-asp?relid=26679.
15. MSN India, *Cap on SEZ land not inflexible: Nath*, dated 19th April 2007, at http://contentl.msn.co.in/News/Business/BusinessBS_190407_1128.htm.

For further ideas, see: *Commentary, Beyond Nandigram: Industrialisation in West Bengal*, in *EPW*,28th April 2007, . 1487-9.

Female Work Participation and Literacy in Maharashtra

***Anjum Ara M. K. Ahmad**

ABSTRACT

Education can lead to the empowerment of women in innumerable ways. There are few tangible gains that education brings forth. Education leads to better standard of living and may brighten the prospect of getting employment. This study is based on Census 2001 data, as the Census 2011 data on work participation is not yet out. Districts are ranked according to their work participation and inter- districts variations are analyzed. Further in this paper, the factors affecting the female work participation rate (FWPR) in Maharashtra are studied. Various factors like male literacy rate, female literacy rate, male work participation rate, mean no of births, percentage of Hindu population, percentage of Muslim population percentage of urban population , no. of families below poverty level, per capita gross district domestic product (GDDP) are considered in the study. Multiple Regression Models are run on FWPR of the total population and rural – urban population. As the residence (rural or urban) came as a significant factor, multiple regression models are also run separately for the rural and urban population. The study reveals that female literacy rate, proportion of urban population, proportion of Muslim population, per capita GDDP, are having a significant effect on FWPR in the total population. Female literacy rate and Muslim population are found to have a significant effect on FWPR in rural data, while in urban data only percentage of Muslim population is found to be significant. Further it is observed that female literacy rate is having a negative effect on female work participation rate specifically in rural areas.

Keywords : Literacy, Female Work Participation, Male Work Participation, Census, Maharashtra, Urban, Rural.

1. Introduction

The discrimination against women is widespread in the area of education, the key to human advancement. Women are being conferred secondary status with little or no “say” in the decision-making process, within the family and in the society. Most of the women’s work inside the house goes unnoticed and unpaid. Even outside the house, they remained underpaid. Education of women calls for urgent attention in order to reduce the inequalities, exploitation and discrimination against them. Women still lag behind men in education in most

developing countries with far reaching adverse consequences for both individual and national well being. A developing country like India can ill afford if half of the human capital remains unutilized thereby being a liability and not an asset for the nation.

Eapen (1992) attempted to understand change and response in the female labour market in Kerala [India], emphasizing primarily the demographic aspects. The focus was on the pattern of fertility decline which could partly explain the observed decline in work participation rates of married women. Tulasidhar (1993) examined

Associate Professor Department of Mathematics and Statistics, Rizvi College of Arts, Science and Commerce, Mumbai, E-mail: anjumahmed8@gmail.com

how child mortality changes with different levels of maternal education and to quantify the impact of maternal education and female labour force participation. The relative impact of maternal education on child mortality is three times stronger than that of female labour force participation. Mammen and Paxson (2000) in their study found that there was great deal of variations across countries and across areas within countries. Both cross-country and individual-level data indicate that women's participation in the labour force first declines and then rises with development. Women's education levels, and the education levels of their spouses, appear to be important determinants of women's labour market activities. Dreze and Sen (2002) report quotes that '...there are evidences that better education (particularly female education) contributes to the reduction in gender based inequalities'.

Theories of the U-shaped curve rely implicitly or explicitly on correlations between economic growth and female education. Literacy is a prerequisite for the upward slope of the U-shaped curve where women gain entry into modern, white-collar jobs that reward education. Boserup (1970) argues that access to schooling is crucial to women's capacity to benefit from modernization and gain access to rewarding jobs. Thus, the connection between education and labor market participation is central to whether development contributes to economic freedom for women.

The United Nation International Conference on Population and Development (ICPD), held in Cairo in 1994, reiterated the importance of economic activity among women, towards aiming the goal of gender equality and women empowerment

1.1 Work Participation Rate - Definition:

Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. It even includes part time help or

unpaid work on farm, family enterprise or in any other economic activity. All persons engaged in 'work' as defined above are workers.

Reference period for determining a person as worker and non-worker is one year preceding the date of enumeration. Those workers who had worked for the major part of the reference period (i.e. 6 months or more) are termed as **Main Workers**. Those workers who had not worked for the major part of the reference period (i.e. less than 6 months) are termed as **Marginal Workers**. **Work participation rate** is defined as the percentage of total workers (main and marginal) to total population.

1.2 Literacy Rate - Definition:

Literacy is one of the important social characteristics on which information is obtained of every individual in the census. For the purposes of census a person aged seven and above, who can both read and write with understanding in any language, is treated as literate. The literacy rate taking into account the total population in the denominator has now been termed as '**crude literacy rate**', while the literacy rate calculated taking into account the 7 and above population in the denominator is called the '**effective literacy rate**'. The '**effective literacy rate**' is commonly called '**literacy rate**'.

2. Need for the study

This paper broadly aims to take a fresh look at the current situation of women's work in Maharashtra, primarily on the basis of data provided in the 2001 Census of India. The aim is to examine the issues and understand the linkages underlying the recent trends in female work participation and also identify the possible determinants for its variations.

2.1 Aim and Objective of the Study:

An attempt is made in this research paper to,

Understand the level of work participation in India in the year 2001.

Analyze the level of work participation, gender wise and residence wise ,at the Maharashtra state level

Identify and explain the effect of various demographic and economic factors including female literacy on the observed levels of female workforce participation rate in the total, rural and urban areas across the districts of Maharashtra, using multiple regression techniques.

3 Research Methodology:

The study has mainly used Census of India 2001 as the data source, Various factors like male literacy rate, female literacy rate, male work participation rate, mean no. of births, proportion of Hindu population, proportion of Muslim population and proportion of urban population

are calculated using the Census 2001 data. These factors are calculated for total population as well as urban and rural population. The other factors considered like no. of families below poverty level, per capita gross district domestic product (GDDP) are taken from various governmental publications, Economic Survey Reports, Department of Economics and Statistics, Government of Maharashtra. Various statistical techniques like rankings, correlation and multiple regressions are used in this paper.

4. Work Participation Rate of India in 2001:

We observe that the **work participation of India is 39.30 % only**. Male work participation rate is 51.90% and female work participation is only 25.70 %. The female work participation is very low in urban areas. The percentage of main workers is higher in males. Percentages of marginal workers are higher in females (11 %) and mostly in rural areas (14.20%).

Table 1: Work Participation Rate in India in 2001

Residence	Proportion to Total Population				
		Total Workers	Main workers	Marginal workers	Non- workers
Total	Persons	39.30	30.60	8.70	60.70
	Males	51.90	45.40	6.60	48.10
	Females	25.70	14.70	11.00	74.30
Rural	Persons	42.00	31.00	10.90	58.00
	Males	52.40	44.50	7.90	47.60
	Females	31.00	16.80	14.20	69.00
Urban	Persons	32.20	29.30	2.90	67.80
	Males	50.90	47.50	3.40	49.20
	Females	11.60	9.10	2.40	88.50

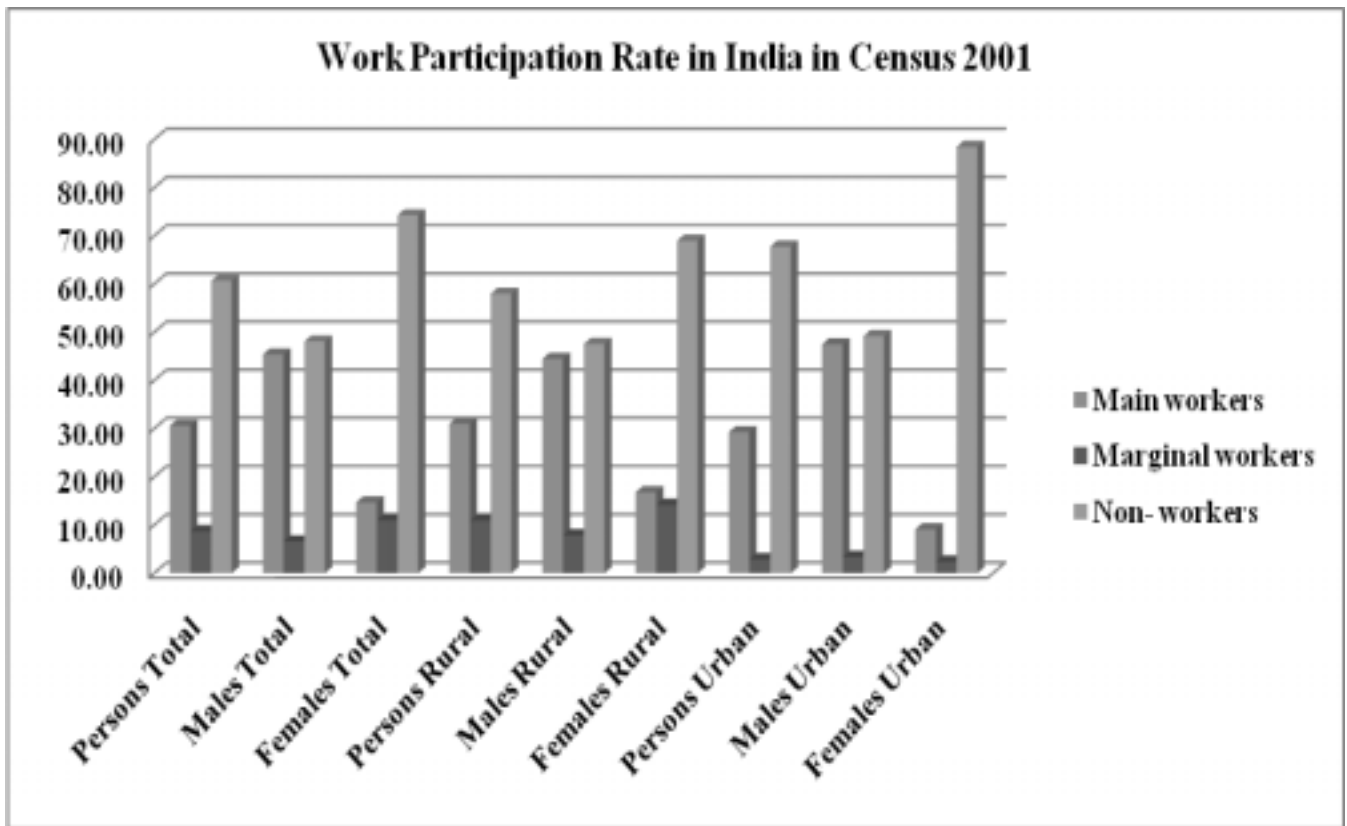


Figure 1

1.1 Ranking of Work Participation Rate in Maharashtra (Ref Table 2) :

When we observe the rankings of work participation in Maharashtra, we find there are high differentials. Work participation rate in general of Maharashtra in the year 2001 is 42.50 %. Gadchiroli has the highest ranking in work participation (51.23%), followed by Gondiya (48.27%) and Bhandara (47.25%), with the least work participation in Mumbai Suburban (36.49 %). Twenty seven districts have their female work participation higher than the State average (30.81%), whereas only thirteen districts have their male work participation rate higher than the State average (53.28%). Highest male participation is seen in Mumbai

(59.17%) district followed by Kolhapur (56.60%) and Sangli (56.09%). In female work participation Mumbai Suburban (12.81 %) has the least participation; Mumbai (13.72 %) has the second last ranking here. Once again Gadchiroli has the highest ranking in female work participation (46.89%) followed by Gondiya (43.29%) and Hingoli (41.62%). There are large variations in the male and female work participation with the least in Gadchiroli (8.58%) and the highest in Mumbai (45.45%). There are also large differences in the rankings of male and female work participation rates. Maximum difference in the ranking is seen in Mumbai, Mumbai Suburban and Thane districts by 33, 31 and 28 points respectively.

Table 2: Ranking of Work Participation Rates in the Districts of Maharashtra

	Person	Rank	Males	Rank	Female	Rank	Difference WPR	Diff in Ranks
District Name	WPR	Total	WPR	Males	WPR	Female	Male- Female	Male- Female
Gadchiroli	51.23	1	55.47	6	46.89	1	8.58	5
Gondiya	48.27	2	53.27	14	43.29	2	9.98	12
Hingoli	46.60	7	51.34	25	41.62	3	9.72	22
Bhandara	47.25	3	52.84	16	41.56	4	11.28	12
Nandurbar	46.51	8	51.91	21	40.97	5	10.94	16
Ratnagiri	44.99	14	51.20	27	39.52	6	11.68	21
Bid	44.31	19	49.08	33	39.21	7	9.87	26
Sindhudurg	46.61	6	54.65	7	39.17	8	15.48	-1
Satara	46.41	9	53.67	10	39.11	9	14.56	1
Ahmadnagar	45.96	10	52.59	19	38.90	10	13.69	9
Buldana	45.51	12	52.00	20	38.65	11	13.35	9
Jalna	44.45	18	50.20	30	38.39	12	11.81	18
Washim	44.63	16	50.89	28	37.96	13	12.93	15
Sangli	47.17	4	56.09	3	37.85	14	18.24	-11
Yavatmal	45.52	11	53.32	13	37.23	15	16.09	-2
Solapur	45.28	13	53.08	15	36.93	16	16.15	-1
Kolhapur	46.92	5	56.60	2	36.72	17	19.88	-15
Osmanabad	43.96	20	50.72	29	36.71	18	14.01	11
Chandrapur	44.94	15	53.40	12	36.03	19	17.37	-7
Parbhani	42.20	24	49.27	32	34.83	20	14.44	12
Nanded	41.79	26	48.73	35	34.42	21	14.31	14
Dhule	43.21	22	51.71	24	34.20	22	17.51	2
Nashik	43.77	21	52.79	17	34.03	23	18.76	-6
Wardha	44.50	17	54.56	8	33.75	24	20.81	-16
Jalgaon	42.47	23	51.27	26	33.03	25	18.24	1
Latur	40.40	30	48.87	34	31.35	26	17.52	8
Aurangabad	40.62	29	49.41	31	31.12	27	18.29	4
Maharashtra	42.50		53.28		30.81		22.47	
Raigarh	41.40	27	52.70	18	29.81	28	22.89	-10
Amravati	42.02	25	53.81	9	29.46	29	24.35	-20
Pune	40.85	28	53.49	11	27.10	30	26.39	-19
Akola	39.76	31	51.80	23	26.93	31	24.87	-8
Nagpur	37.82	34	51.85	22	22.77	32	29.08	-10
Thane	39.11	33	55.81	5	19.62	33	36.19	-28
Mumbai	39.30	32	59.17	1	13.72	34	45.45	-33
Mumbai(Sub)	36.49	35	55.95	4	12.81	35	43.14	-31

Table 3: Ranking of Female Work Participation Rates in Maharashtra

Females Work Participation Rate in Rural and Urban Areas

District Name	Rural	Ranks	Urban	Ranks	Difference	Diff in Ranks
Gadchiroli	48.78	1	21.30	1	27.48	0
Solapur	45.47	12	18.96	2	26.51	10
Bhandara	46.07	8	16.59	3	29.47	5
Sindhudurg	41.42	27	16.53	4	24.88	23
Gondiya	46.93	6	15.95	5	30.98	1
Sangli	44.98	13	15.65	6	29.33	7
Ahmadnagar	44.55	15	15.65	7	28.90	8
Satara	43.02	20	14.45	8	28.57	12
Ratnagiri	42.42	23	14.44	9	27.98	14
Pune	44.2	16	14.42	10	29.78	6
Mumbai	—	—	13.72	11	—	—
Mumbai (Suburban)	—	—	12.81	12	—	—
MAHARASHTRA	43.61	—	12.57	—	31.04	—
Raigarh	35.07	33	12.25	13	22.82	20
Osmanabad	41.28	28	12.07	14	29.22	14
Nashik	47.64	2	12.02	15	35.62	-13
Kolhapur	46.97	5	12.00	16	34.97	-11
Buldana	45.77	10	11.97	17	33.80	-7
Wardha	41.58	26	11.71	18	29.87	8
Nagpur	42.81	21	11.59	19	31.21	2
Yavatmal	43.09	19	11.5	20	31.59	-1
Amravati	38.91	30	11.45	21	27.46	9
Thane	39.93	29	11.41	22	28.52	7
Hingoli	47.18	4	11.20	23	35.98	-19
Chandrapur	47.52	3	11.15	24	36.37	-21
Nanded	41.79	25	10.74	25	31.05	0
Jalna	44.83	14	10.72	26	34.11	-12
Washim	43.72	17	10.69	27	33.03	-10
Parbhani	45.91	9	10.61	28	35.30	-19
Aurangabad	43.44	18	10.24	29	33.20	-11
Jalgaon	42.08	24	10.20	30	31.88	-6
Nandurbar	46.43	7	10.19	31	36.25	-24
Akola	37.52	32	10.00	32	27.52	0
Bid	45.6	11	9.67	33	35.93	-22
Dhule	42.73	22	9.63	34	33.10	-12
Latur	38.22	31	8.77	35	29.45	-4

4.2 Ranking of Female Work Participation Rates in the Maharashtra (Ref Table 3):

Female work participation differs in the rural and urban areas. In the rural areas, female work participation is highest in Gadchiroli (48.78%) followed by Nashik (47.64%) and Chandrapur (47.52%). Districts like Raigarh (35.07%) Akola (37.52%), Later (38.22%) has low female work participation in rural areas. Gadchiroli (21.30%) also ranks first in female work participation in urban areas with Solapur (18.96 %) and Bhandara (16.59%) in second and third position respectively. Latur (8.77 %), Dhule (9.63 %) and Bid (9.67%) have very low female work participation in urban areas.

Female work participation is higher in rural areas as compared to urban areas. In urban areas of some districts female work participation is less than 25% than its rural counterparts. The largest gap in the female work participation rate between the rural and urban areas is seen in Chandrapur (36.37%) district and the least in Raigarh (22.82%) district. The districts Nandurbar, Sindhudurg and Bid have large differences in the rankings of female work participation rate between their rural and urban areas, i.e. by -24, 23 and -22 points respectively. The districts Gadchiroli, Nanded and Akola have same rankings in both rural and urban areas.

4.3 Multiple Regression Results:

To determine the factors affecting the female work participation, multiple regression models were run on the district level data. Female work participation rate was taken as the dependent variable in all models. The results are summarized in the **Table 4** given below. Variables which were found to be highly correlated among themselves were dropped in the regression models. Hence 'Male Fertility rate' was not considered in all models, as it was found to be highly correlated with 'Female literacy rate'.

4.3.1 Model 1: Regression on total population:

Multiple Regression was first run on total population with Female Literacy Rate, Percentage of

Muslim Population, Percentage of Hindu Population, Male Work Participation Rate, Mean No of Births, percentage of people below poverty line, log of percentage of urban population and log of Gross District Domestic Product (GDDP) were taken as independent variables. The variables, log of percentage of urban population and GDDP were transformed to natural logarithms as log distributions of these variables satisfied better normality conditions. It was found that the variables considered in this model explained **0.891%** of the variance in female work participation (See Table 4). Female Literacy Rate, Percentage of Muslim Population and log of percentage of urban population were found to be significant.

4.3.2 Model 2: Regression on rural and urban population:

The variable 'Percentage of Hindu Population' was found to be highly correlated with the variable 'Percentage of Muslim Population', in this Model, hence was dropped in the Model. Female Literacy Rate, Percentage of Muslim Population, Male Work Participation Rate and Mean No of Births were the variables which were considered as independent variables. The value of each variable was calculated separately by using the rural and urban data at each district level. A logical variable 'residence dummy' taking '0' for rural data and '1' for urban data was also considered as one of the independent variable in the model. A multiple regression model was run taking the rural and the urban values for all these variables, mentioned above. Here it was observed that the variables explained **0.978 %** of the variance in female work participation (See Table 4). Female Literacy Rate, Percentage of Muslim Population, and residence code was found to be significant at both 5% and 1% LOS. Male Work Participation Rate was found to be significant at only 5% LOS.

4.3.3 Model 3: Regression on rural population:

As residence code was found to be significant in the above model (Model 2), it was now advisable to run

the regression on the rural and urban data separately. Thus taking the rural population data for each district, for the variables Female Literacy Rate, Percentage of Muslim Population, Percentage of Hindu Population, Male Work Participation Rate, Mean No of Births, Percentage of people below poverty line, the multiple regressions was run. Female Literacy Rate and Percentage of Muslim Population were the only two variables which were found to be significant.

4.3.4 Model 4: Regression on urban population:

Taking the urban population data for each district, the multiple regressions are run taking independent variables as Female Literacy Rate, Percentage of Muslim Population, Male Work Participation Rate and Mean No

of Births. The variable ‘Percentage of Hindu Population’ was once again found to be highly correlated with the variable ‘Percentage of Muslim Population’, in this Model, hence was dropped in the Model. Only Proportion of Muslim Population was found to be significant here.

On further analyzing the regression models considered above, it was observed that the Beta values (Unstandardised as well as Standardized) for Female literacy rate, Percentage of Muslim population and Percentage of urban population was always negative .Thus implying that a unit increase in these variables will decrease the female work participation rate. That is these variables are having a negative impact on female work participation rate in the respective models.

Table 4: Multiple Regression Results

Independent Variables	Model 1: Reg On Total Population		Model 2: Reg on Rural and Urban Population		Model 3: Reg on Rural Population		Model 4: Reg on Urban Population	
	Beta	t	Beta	t	Beta	t	Beta	T
(Constant)	78.452	24.85	44.881	5.812	57.07	16.202	16.449	16.865
Female Literacy	-0.251*#	-3.978	-0.246* #	-4.85	-0.192*#	-3.356	-0.274	-1.53
Muslim Population	-0.307*#	-2.819	-0.223* #	-4.513	-0.431*#	-3.162	-0.193* #	-4.264
Hindu Population	-0.021	-0.22	----	----	-0.177	-1.011	----	----
Male Work Participation Rate	-0.029	-0.374	0.241*	2.114	0.248	1.26	0.209	1.187
Mean No Of Births	0.057	0.762	-0.019	-0.607	-0.139	-0.846	-0.144	-0.787
log of Percentage of urban population	-7.811* #	-6.986	----	----	----	----	----	----
Residence Dummy (rural or urban)	----	----	-22.067* #	-14.44	----	----	----	----
% of people below poverty line	-0.057	-0.968	----	----	-0.172	-1.144	----	----
log of Gross District Domestic Product	-0.167	-1.586	----	----	----	----	----	----
Robustness Of the Model (Dependent Variable female work participation rate)								
N	35		70		33		35	
R	0.949		0.989		0.674		0.595	
R Square	0.901		0.98		0.454		0.355	
Adjusted R Square	0.891		0.978		0.356		0.336	

* Significant at 5% level of significance, # Significant at 1% level of significance

Conclusions:

The study shows that the work participation rate in India is 39.30 % only. In urban areas male work participation is high, but female work participation is very low. Female work participation is higher in rural areas. There are large variations found in the work participation rates among the various districts of Maharashtra. The variable 'Percentage of Muslim Population' is found to be significant in all models. The 'residence dummy' in the combine rural- urban data was found to be highly significant, hence suggesting a different pattern of female work participation in rural and urban areas. Female literacy rate was also found to be a significant factor in most of the models (except in urban population). On further observing the Beta values it can be concluded, that the female literacy rate has a significant but negative effect on female work participation in Maharashtra especially in rural areas.

6. Acknowledgment:

The author is thankful to the Editor-in-Chief and the learned referee for their valuable suggestions regarding the improvement of this article.

References :

Boserup, E. (1970): *Women's role in economic development*. Academic Press, New York

Census of India (2001): Provisional population totals, Paper 1 of 2001 supplement, district totals. Registrar

General & Census Commissioner, New Delhi.

Dreze, J. and Sen, A. (2002): *India development and participation*. Oxford University Press, New Delhi.

Eapen, M. (1992): Fertility and female labour force participation in Kerala. *Economic and Political Weekly*, 27(40), 2179-2188 .

Mammen, K. and Paxson, C. (2000): Women work and economic development. *The Journal of Economic Perspectives*, 14(4), 141-164.

Tulasidhar, V.B. (1993): Maternal education, female labour force participation and child mortality: evidence from the Indian census. *Health Transition Review*, 3(2), 177-192

Web links:

Census of India: <http://censusindia.gov.in/>

The United Nation International Conference on Population and Development (ICPD): <http://www.iisd.ca/Cairo/program/p00000.html>

Bio-active Principle from the leaves of *Erythrina Indica*

N.A. Jafry*

Abstract

Petrol extract of the leaves of *Erythrina indica* gave an alkaloid whose structure was established by UV, IR, NMR and MS spectroscopy. It was found to have insecticidal activity.

Key word : *Erythrina indica*, insecticidal, Erythartine

1. Introduction

Erythrina an important genus of the leguminosae family comprises of 108 species and 9 hybrids and only half of them have been examined for their alkaloidal content. ⁽¹⁾ Many *Erythrina* alkaloids possess curare like action. Alkaloidal extracts from different parts of *Erythrina* species, have been used in indigenous medicine particularly in India ⁽²⁾. Many pharmacological effects including astringent, sedative, hypotensive, neuromuscular blocking, CNS depressants, laxative and diuretic property have been recorded for total alkaloidal extract ⁽³⁻⁵⁾. Flowers are also used as antidote for poisoning.

Our interest in phytochemical investigation of leaves of *Erythrina indica* was aroused due to the fact that the extracts of the leaves showed insecticidal activity. Therefore detailed phytochemical investigation for the alkaloids present in the flowers of *Erythrina indica* was carried out.

Phytochemical investigation of leaves of *Erythrina indica*:

Air dried leaves of *Erythrina indica*, collected from Jijamata Udyan were powdered & extracted successively from petrol, chloroform & methanol. Concentrates of these extracts under reduced pressure furnished resinous masses. These resinous mass were subjected to percolation method to get their basic extracts containing alkaloids.

The three basic extracts (Petrol, Chloroform and Methanol) were tested for their insecticidal activities and all showed positive results.

Petrol basic extract (100mg):

The TLC of alkaloidal crude extract of petroleum ether (CHCl₃, double run) revealed the presence of one major spot (A). This spot gave positive Dragon Droff test. The compound 'A' was isolated in the pure form by preparative TLC.

* Assistant Professor, email: prof.jafry@gmail.com

2. RESULTS AND DISCUSSION

Identification of compound 'A':

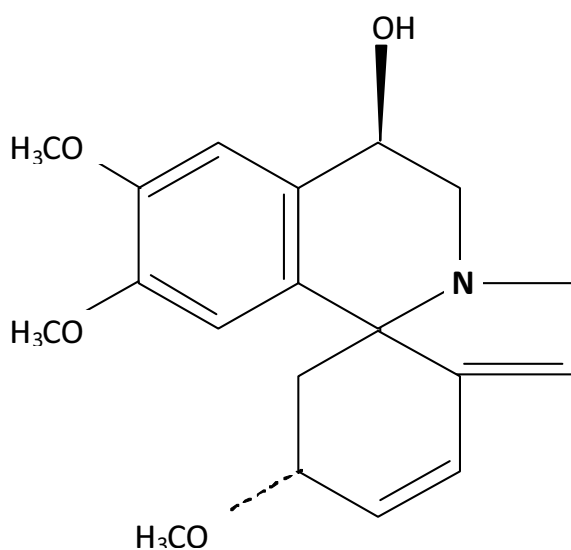
Its IR and UV spectrum and mass fragmentation pattern were similar to compound 'A' suggesting it to be erythrina alkaloid of 1,6diene type. The presence of hydroxyl function was confirmed from its IR (3420cm^{-1}) spectrum. This hydroxyl is alcoholic (insoluble in NaOH) as it gave negative FeCl_3 test.

Its ^1H NMR spectrum showed the presence of two aryl methoxyl δ 3.90(s) & δ 3.78(s) and an alkyl methoxyl group δ 3.32(s), two para aromatic protons δ 6.85(s) & δ 6.99(s) three vinylic protons δ 6.02(d, $J=10.02\text{Hz}$) δ 6.60(d, $J=10\text{Hz}$) & δ 5.80 (br,s) further confirming 1,6diene type of system. Assignment of hydroxyl at position C-11 was determined by the appearance of a triplet at δ 4.70 ($J=3.47\text{Hz}$) corresponding to a proton having both hydroxyl & phenyl substituents.

All the above spectral values of compound 'A' was in agreement with the values of previously known alkaloid Erythartine i.e. 11-hydroxyerythartine (A)⁽⁶⁾.

The compound 'A' showed significant insecticidal activity (Table-1) as compared to standard Parathion.

'A',
(Erythartine)



Chloroform Basic Extract and Methanol Basic Extract

The work is under progress for isolation of more bioactive principles from these two extracts.

3. Experimental section

Instrumentation and Conditions:

The UV absorption spectra were obtained in Elico spectrophotometer (model 2405) using spectroscopic grade methanol as a solvent. NMR spectra were recorded on Bruker AM (200MHz) FT-NMR spectrometers. Tetramethyl silane (TMS) was used as an internal standard

Thin layer chromatography

For qualitative work, each plate (10 x 20cm) was prepared from a slurry containing silica gel (4g), distilled water (8ml) and fluorescent indicator (50mg). Plates were dried at room temperature and then activated for an hour at 100°C . After developing the plate with suitable solvent system, the chromatograph was examined under ultraviolet (254nm) lamp for detection of spots. For visualization, plates were exposed to I_2 vapor or sprayed with D.D. reagent (Dragon Droff reagent) or DNP (2, 4-dinitro phenyl hydrazine) or with sulphuric acid (10%, heating at 100°C). For quantitative analysis ready made silica gel plate were used of (20 x 20cm).

Plant material

Leaves of *Erythrina indica* were collected from Jijamata Udyan by Mr. Pawar. They were identified by Dr. Nitesh Joshi of Dept of Botany, Rizvi College of Arts Science and Commerce.

Extraction of flowers

Air dried and crushed leaves (100g) of *Erythrina indica* were successively (soxhlet) extracted with petrol, chloroform and methanol and then solvents were removed under pressure to furnish corresponding crude extracts.

Isolation of crude alkaloidal extracts

Alkaloids were extracted by percolation method. The crude petrol chloroform and methanol extract was

acidified with 0.5 N H₂SO₄ to pH <2. Then the solutions are extracted with ether to get rid of neutral compounds. The aqueous extract after being basified (pH=12) were extracted with chloroform which on drying under vacuum yield crude mixture of alkaloids.

Petrol basic extract (78mg):

The TLC of alkaloidal crude extract of petroleum ether (CHCl₃, double run) revealed the presence of one major spot. This spot gave positive Dragon Droff test. The compound 'A' was isolated in the pure form by preparative TLC.

Compound A (Erythartine or 11-Hydroxyerysotrine) Yield 17mg (0.024%)

UV_{max}^{MeOH} : 230(4.16), 285(3.51).
IR V cm⁻¹: 3420(O-H), 1610(C=C).

¹HNMR (200 MHz CDCl₃); δ 1.87 (t, H-4a, J_{4a-4e} =11.4Hz and $J_{4a,3a}$ =11.4Hz), δ 2.42 (dd, H-4e, $J_{3a,4e}$ =3.6Hz, $J_{4a,4e}$ =11.4Hz), δ 3.14 (dd, H-10e, $J_{10a,11e}$ =6.6Hz), δ 3.32 (s, OMe-3), δ 3.68 (dd, H-10a, $J_{10a,10e}$ =14.07Hz), δ 3.78 (s, OMe-15), δ 3.90 (s, OMe-16), δ 4.05 (m, H-3a, $J_{3a,4a}$ =11.4Hz and $J_{3a,4e}$ =3.6Hz), δ 4.70 (t, H-11, J =3.47Hz), δ 5.80 (br s, H-7), δ 6.02 (d, H-1, $J_{1,2}$ =10.02 Hz), δ 6.60 (d, H-2, $J_{1,2}$ =10.02Hz), δ 6.85 (s, H-14), δ 6.99 (s, H-17)

Insecticidal Activity

The insecticidal activity was determined by the method of Joshi and Tholia⁽⁷⁾, on Cockroaches (*Periplaneta Americana*) of either sex. Insects receiving 0.02mL of acetone served as control. Test compound and standard parathion were dissolved in acetone and were injected between the 4th and 5th abdominal segment on the ventral side of the insect with the help of micro liter syringe. The treated insects were kept under observation to record the time taken by the insects to reach a moribund state. The Statistical significance of the difference between the data of standard and test compounds was determined

Chemicals	Compounds	Concentration	Insecticidal activity Mean killing time (Min)
Control	Acetone	0.2mL	720
Standard	Parathion	0.5%	280
Test sample	11-Hydroxyerysotrine	0.5%	175

The activity has been screened at a concentration of (0.5%) 11-hydroxyerysotrine showed significant insecticidal activity.

4. Acknowledgement

The author is thankful to University of Mumbai for the financial support during the work and Rizvi Education Society for allowing me to carry this research project.

5. References

- 1 Krukoff, B. A., and Barneby R C, *Llyodia*, (1974), **37**, 332, (1977), **40**,407.
- 2 Chopra, R. N., Nayar, S. L. , and Chopra I C, "Glossary of Indian Medicinal plants ", (1956), p. 111, CSIR, New Delhi, India
- 3 Singh, H and Chawla, A S, *Experientia*, (1969), **25**, 785
- 4 Barrors, G. S. G., Matos, F. J. A., Vieira, J. E. V., Sousa, M. P. and Medeiros, M. C, *J Pharm Pharmacol*, (1970), **22**, 116.
- 5 Bhattacharya, S. K , Debnath, P. K, Sanyal, A. K. and Ghosal, S, *J.Res Indian Med*, (1971), 6, 235; C.A. **78** 52895a (1973)
- 6 Masouda, E.A, Maurice, S., Alan, J. F, *Journal of Natural Products*, (1991), **54** (2),326
Joshi, K. C. & Tholia, M. K., *Pestic Sci*, (1973), **4** , 701

Insecticidal Alkaloids From Seeds of *Erythrina Indica*

S. S. Hussain*

Abstract

Three alkaloids A, B & C showing insecticidal property have been isolated from the seeds of *Erythrina indica*. Their structure have been characterized by spectroscopic methods (UV, IR, ¹HNMR and MS). This is the first report of these alkaloids from indica species.

Key words : *Erythrina Indica*, Erysotrine , Erythartine , ¹Erythristemine.

1. INTRODUCTION:

Alkaloidal extracts from different parts of *Erythrina* species, have been used in indigenous medicine particularly in India⁽¹⁾. Many pharmacological effects including astringent, sedative, hypotensive, neuromuscular blocking, CNS depressants, laxative and diuretic property have been recorded for total alkaloidal extract⁽²⁻⁴⁾.

2. PRESENT WORK

Phytochemical investigation of seeds of *E. indica*:

Seeds of *E. indica*, collected from Jijamata Udyan Mumbai were powdered and extracted successively from petrol, chloroform & methanol. Concentrates of these extracts under reduced pressure furnished resinous masses. The analysis of all three extracts revealed the presence of several Dragon Droff positive spots, indicating presence of alkaloids some of which were common in all extracts. Three alkaloids were isolated & they were designated as **A, B & C**. The Three compounds showed significant insecticidal activity as compared to standard parathion.

3. RESULTS AND DISCUSSION

Identification of Compound A

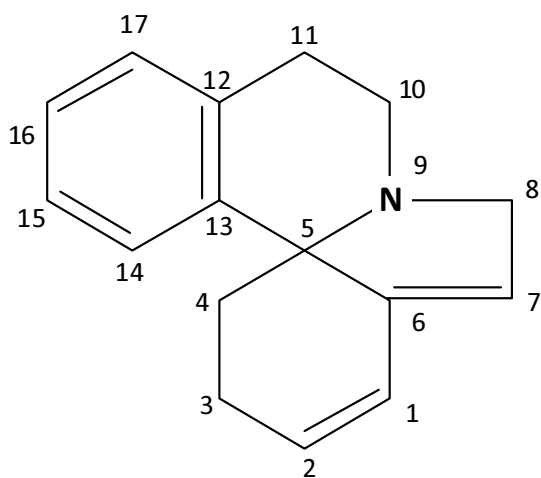
It gave positive Dragon Droff test suggesting it to be an alkaloid. Its IR absorption band at 1610 cm⁻¹ & UV absorbance band at 285 nm suggested dioxygenated aromatic ring. UV absorption at 230 nm and mass fragmentation pattern (M⁺ -31-27)⁽⁵⁾ proved it to be diene type of erythrina alkaloid, possessing 1,6diene structure with an aliphatic methoxyl group at C-3 position as it is in case of all the known erythrina alkaloids.

Once erythrinan structure (I) was established with conjugated double bonds at 1, 6 position, it was possible to interpret the NMR spectrum with the aid of coupling constant values.

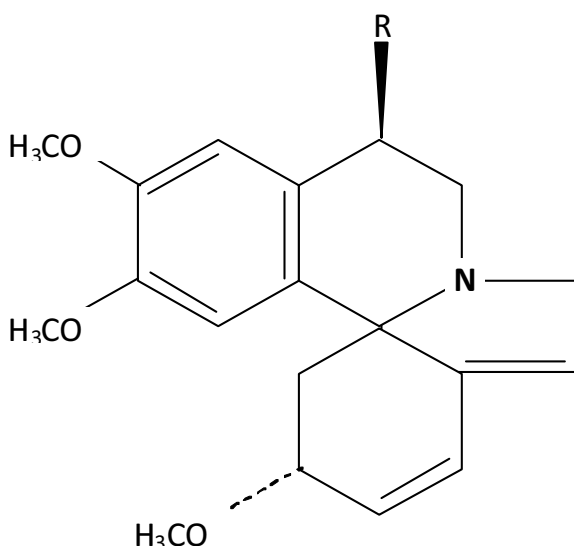
The ¹H NMR spectrum indicated the presence of two aryl methoxyl at δ 3.94(s) & δ 3.78(s) & an alkyl methoxyl group at δ 3.30(s), two para aromatic protons at δ 6.82(s) and δ 6.65(s) & three vinylic protons at δ 6.02(d, *J*=10Hz), δ 6.61(d, *J*=10Hz) & δ 5.75(br,s) these

¹ Associate Professor, Dept. of Chemistry, Rizvi College of Arts , Science & Commerce, Mumbai,
E mail: shams.h@rediffmail.com

values again confirm that the compound 'A' is 1,6 diene type of alkaloid. The two aryl methoxyl groups were assigned at C-15 & C-16 in order to explain two para aromatic protons which will be at C-14 & C-17 position. Irradiation in the benzylic region causes a sharpening in the signal due to proton at C-17, whereas irradiation of the proton at C-3 produces about 15% NOE for the signal due to the proton at C-14. The NOE effect arises because the proton at C-14 lies over ring A and spatially near the axial C-3 proton.



Erythrinan structure (I)



'A', R = H (Erysotrine)

'B', R = OH(Erythartine)

'C' R = OCH₃ (Erythristemine)

The peak at δ 4.05 was due to H-3. The triplet at δ 1.81 was assigned to H-4ax & dd at δ 2.62 was assigned to H-4eq. It was concluded that proton at C-3 was axial from the coupling values of 5.0 Hz with H-4eq & 11.0 Hz with H-4ax.

The doublet of δ 6.61 was assigned to H-2 & doublet at δ 6.02 was assigned to H-1.

Similarly the down field broad singlet at δ 5.75 was due to H-7 proton. The three double doublets at δ 3.10, δ 3.45 and δ 3.02 were due to H-10eq, H-10ax & H-11 protons.

All the spectral characteristics of compound 'A' are in perfect agreement with the values of previously known alkaloid Erysotrine (A).⁽⁶⁾.

Identification of compound 'B':

Its IR and UV spectrum and mass fragmentation pattern were similar to compound 'A' suggesting it to be erythrina alkaloid of 1,6 diene type. The presence of hydroxyl function was confirmed from its IR (3420cm⁻¹) spectrum. This hydroxyl is alcoholic (insoluble in NaOH) as it gave negative FeCl₃ test.

Its ¹HNMR spectrum showed the presence of two aryl methoxyl δ 3.90(s) & δ 3.78(s) and an alkyl methoxyl group δ 3.32(s), two para aromatic protons δ 6.85(s) & δ 6.99(s) three vinylic protons δ 6.02(d, J=10.02Hz) δ 6.60(d, J=10Hz) & δ 5.80 (br,s) further confirming 1,6diene type of system.

Assignment of hydroxyl at position C-11 was determined by the appearance of a triplet at δ 4.70 (J=3.47Hz) corresponding to a proton having both hydroxyl & phenyl substituents.

All the above spectral values of compound 'B' was in agreement with the values of previously known alkaloid Erythartine i.e. 11 -hydroxyerysotrine (B)⁽⁶⁾.

Identification of compound 'C'

Its IR, UV spectrum and mass fragmentation pattern were similar to compound 'A' suggesting it to be erythrina alkaloid of 1,6 diene type..

The ¹H NMR spectra showed the presence of two aryl methoxyls at δ 3.94(s), δ 3.80(s) and two alkyl methoxyl at δ 3.65(s) & δ 3.35(s), two para aromatic protons at δ 6.85(s) and δ 6.92(s) three vinylic protons at δ 6.09(d, J=10 Hz), δ 6.65(d, J=10Hz) and δ 5.72(br,s).

The presence of extra methoxyl group was given the position C-11, due to the presence of triplet at δ 4.20 (J=3.20Hz) All the spectral characteristics of the of compound 'D' was in agreement with previously known alkaloid erythristemine (C)⁽⁶⁾.

Insecticidal Activity

The insecticidal activity was determined by the method of Joshi and Tholia⁽⁷⁾ , on cockroaches (*Periplaneta americana*) of either sex. The stastical significance of the difference between the data of standard and test compounds was calculated by employing students 't', test.

Chemicals	Compounds	Concentration	Insecticidal activity Mean killing time (Min) \pm S.E
Control	Acetone	0.02mL	720 \pm 10.29
Standard	Parathion	0. 5%	280 \pm 11.74
Sample(A)	Erysotrine	0. 5%	175 \pm 9.27
Sample(B)	11-Hydroxyerysotrine	0. 5%	185 \pm 9.87
Sample(C)	11-Methoxyerysotrine	0. 5%	198 \pm 10.89

The activity has been screened at a concentration of 0. 5% (Table-1)

4. Experimental section

Instrumentation and Conditions:

Melting points ($^{\circ}$ C) were determined on Fisher-John's melting point apparatus and are uncorrected. IR spectra were recorded on Perkin Elmer spectrophotometer (model 783) the UV absorption spectra were obtained in a Shimadzu UV/VIS spectrophotometer (model 2405) using spectroscopic grade methanol as a solvent. NMR spectra were recorded on either Varian EM-360 (60 MHz) or Bruker AM (200MHz) FT-NMR spectrometers. Tetramethyl silane (TMS) was used as an internal standard The mass spectra were recorded on a Shimadzu GC-MS, model GP-1000 A.

Chromatographic methods

Column chromatography

Column chromatography was performed using silica gel G (Acme brand). For broad separations, the ratio between the material to be chromatographed and the adsorbent was 1:40 while for finer separation, the same as 1:100. The mixture to be loaded on the column was preadsorbed on silica gel. The column was prepared in petrol (60-80%) and was eluted with increasing polarity of solvents starting from petrol to methanol.

Thin layer chromatography

For qualitative work, each plate (10 x 20cm) was prepared form a slurry containing silica gel (4g) , distilled

water (8ml) and fluorescent indicator (50mg). Plates were dried at room temperature and then activated for an hour at 100 °C. After developing the plate with suitable solvent system, the chromatograph was examined under ultraviolet (254nm) lamp for detection of spots. For visualization, plates were exposed to I₂ vapor or sprayed with D.D. reagent (Dragon Droff reagent) or DNP (2,4-dinitro phenyl hydrazine) or with sulphuric acid (10%, heating at 100 °C). For quantitative analysis each preparative TLC plate (20 x 20cm) was prepared from a slurry of silica gel (12g), fluorescent indicator (100mg) and distilled water (24ml).

Plant material

Seeds of *Erythrina indica* were collected from the Jijamata Udyan, Mumbai and identified by Dr. S.S. Joshi of Department of Botany, Rizvi college of Arts Science and Commerce, Mumbai .

Extraction of seeds

Air dried and crushed leaves (100g) of *E. indica* were successively (soxhlet) extracted with petrol, chloroform and methanol. The solvents were removed under pressure to furnish corresponding crude extracts.

Isolation of crude alkaloidal extracts

Alkaloids were extracted by percolation method. The crude petrol chloroform and methanol extract was acidified with 0.5 N H₂SO₄ to pH <2. Then the solutions are extracted with ether to get rid of neutral compounds. The aqueous extract after being basified (pH=12) were extracted with chloroform which on drying under vacuum yield crude mixture of alkaloids.

Petrol basic extract (100mg):

The TLC of alkaloidal crude extract of petroleum ether (CHCl₃, double run) revealed the presence of one major and one minor compound. These spots gave positive Dragon Droff test. The two compounds A and B were isolated in pure form by preparative TLC.

Compound A (Erysotrine) Yield 15mg (0.015%)

m-p : 96-98 °C

UVλ_{max}^{MeOH} : 230(4.30),285(3.8)

IR V cm⁻¹ : 1610

¹H NMR (200MHz CDCl₃)

δ 1.81 (t, H-4a, J_{3a,4a}=11Hz, J_{4a,4e}=11Hz), δ 2.62 (dd, H-4e, J_{3a,4e}=5.0Hz, J_{4a,4e}=11Hz), δ 3.02 (dd, H-11, J=13.5, 3.5Hz), δ 3.10 (dd, H-10e, J_{10a,10e}=13.5Hz, J_{10e,11e}=6.5Hz), δ 3.30 (s, OMe), δ 3.45 (dd, H-10a, J_{10a,10e}=13.5Hz, J_{10a,11e}=3.5Hz), δ 3.78 (s, OMe), δ 3.94 (s, OMe), δ 4.05 (m, H-3a, J_{3a,4a}=11.5Hz and J_{3a,4e}=5.0Hz), δ 5.75 (br.s, H-7), δ 6.02 (d, H-1, J_{1,2}=10Hz), δ 6.61 (d, H-2, J_{1,2}=10Hz), δ 6.65 (s, H-14), δ 6.82 (s, H-17)

MS (M⁺) : 313

Compound B (Erythartine or 11-Hydroxyerysotrine) Yield 24mg (0.024%)

m.p : 166°C(lit.166-168°C).

UVλ_{max}^{MeOH} : 230(4.16),285(3.51).

IR V cm⁻¹ : 3420(O-H), 1610(C=C).

¹H NMR (200 MHz CDCl₃); δ 1.87 (t, H-4a, J_{4a-4e}=11.4Hz and J_{4a,3a}=11.4Hz), δ 2.42 (dd, H-4e, J_{3a,4e}=3.6Hz, J_{4a,4e}=11.4Hz), δ 3.14 (dd, H-10e, J_{10a,11e}=6.6Hz), δ 3.32 (s, OMe-3), δ 3.68 (dd, H-10a, J_{10a,10e}=14.07Hz), δ 3.78 (s, OMe-15), δ 3.90 (s, OMe-16), δ 4.05 (m, H-3a, J_{3a,4a}=11.4Hz and J_{3a,4e}=3.6Hz), δ 4.70 (t, H-11, J=3.47Hz), δ 5.80 (br s, H-7), δ 6.02 (d, H-1, J_{1,2}=10.02 Hz), δ 6.60 (d, H-2, J_{1,2}=10.02Hz), δ 6.85 (s, H-14), δ 6.99 (s, H-17)

MS (M⁺) : 329

Chloroform basic extract (125mg):

The TLC of alkaloidal crude extract of chloroform revealed the presence of one Dragon Droff positive spots. It was identified as compound 'B'

Methanol basic extract (119mg):

TLC of alkaloidal crude extract of methanol revealed the presence of a major iodine sensitive spot giving positive Dragon Droff test .the major compound was separated on preparative TLC (CHCl₃: acetone 80:20). It is named as compound C.

Compound C , (Erythristemine or 11-Methoxyerysotrine) Yield 15mg (0.015%)

m.p. : 127-129°C(lit. 127-129°C (Petroleum ether)

UVλ_{max}^{MeOH} ; 235(4.3), 283(3.5).

IRVcm⁻¹:1610(C=C).

¹H NMR (200MHz CDCl₃): ä 1.87 (t,H-4a,,J_{4a-4e} = 11 Hz and J_{4a,3a}=11Hz), ä 2.02 (dd,H-4e J_{4a,4e}=11Hz and J_{4e,3a}=3.0Hz), ä 3.24 (dd,H-10e, J_{10e,11e}=6Hz), ä 3.35 (s,-OMe), ä 3.50 (dd,H-10a, J_{10a,10e}=14.0Hz), ä 3.65 (s, OMe), ä 3.84 (s, OMe), ä 3.94 (s,-OMe), ä 3.99 (m, H-3a J_{3a,4a}=11Hz and J_{3a,4e}=3.0Hz), ä 4.20 (t,H-11, J=3.20Hz), ä 5.72 (br s,H-7), ä 6.09 (d,H-1, J_{1,2}=10Hz), ä 6.65 (dd,H-2, J_{1,2} = 10Hz), ä 6.85 (s,H-14), ä 6.92 (s, H-17).

MS (M⁺) : 343

5. Acknowledgement

S S Hussain is thankful to Department of Atomic Energy for the financial support during the work and BARC for providing the necessary facilities to carry out the research work.

6. References

- 1 Chopra, R. N, Nayar, S. L , and Chopra, I C, (1956), "Glossary of Indian Medicinal plants " , p. 111, CSIR, New Delhi, India
- 2 Singh, H. and Chawla, (1969), A. S, *Experientia*, **25**, 785
- 3 Barrors, G. S. G , Matos, F. J. A , Vieira, J. E. V. , Sousa, M. P. and Medeiros, M. C, (1970), *J Pharm Pharmacol*, **22**, 116.
- 4 Bhattacharya, S. K. , Debnath, P. K, Sanyal, A. K. and Ghosal, S., (1971), *J.Res Indian Med*, **6**, 235; C.A. 78 52895a (1973)
- 5 Dyke, S. F. and Quessy, (1981), S N THE ALKALOIDS .XVIII. p 8-9. Academic press Inc.
- 6 Masouda, E.A., Maurice, S., Alan, (1991), J. F, *Journal of Natural Products*, **54** (2),326
- 7 Joshi K C & Tholia M K. (1973), *Pestic Sci*, **4** , 701

Insecticidal principle of *Artemisia nilagirica*

S.S. Hussain*

ABSTRACT

The crude extracts of *Artemisia nilagirica* was subjected to Bioassay directed fractionation for the isolation of active insecticidal principle against mosquito larvae. The principle was characterized by their spectral data UV, IR, NMR and Mass spectroscopy. It was found to be Capillin.

Key words: Artemisia, Capillin, Insecticidal

1. Introduction

Artemisia is one of the most prominent genera of Family, Compositae (Asteraceae). It comprises of 280 species. Some of the important members of this genus are *A. annua* Linn, *A.naritina* Linn, *A. vulgaris* Linn etc.⁽¹⁾

Plants belonging to this genus are known to possess several important biological properties such as antimalarial, antihelmentic etc. Artemisinin, a sesquiterpene lactone has been recently proved to be an effective antimalarial agent. The drug, sodium artesunate (sodium salt of the hemisuccinyl ester of 2H-artemisinin) exhibits better antimalarial activity than chloroquin. It is also devoid of any harmful side effects.^(2, 3) Santonin, an alkaloid isolated from *A.naritina* is known to exhibit anthelminthic action.⁽⁴⁾

Recently in our lab while screening different plants for their biological activity we found that *Artemisia nilagirica* exhibit insecticidal activity as well. So it was worthwhile to make a detailed study of the different extracts/fractions of isolation and characterization of the bioactive principle responsible for insecticidal activity

2. Present Work

Artemisia nilagirica (dry stem and leaves) was extracted successively with petrol, chloroform and methanol. The individual extracts, obtained on removal of the solvents, were separately evaluated for insect toxicity against mosquito larvae. Only the petrol extract showed positive insecticidal activity. Trituration of the extract with acetone led to the separation of a white waxy solid (Fraction A1). This did not exhibit any insect toxicity. The entire activity was located in the filtrate (Fraction A2). In column chromatography of the latter fraction using gradient elutions with mixture of solvents, twelve fractions were obtained. Only the fraction eluting with ethyl acetate: petrol (2:98, fraction 2) contained the insecticidal principle. Preparative TLC of this fraction yielded three bands (designated as I, II and III). Most of the activity was associated with the UV positive band II, while I showed moderate toxicity. This was later attributed to the presence of trace amount of band II component as an impurity in it. Table A.

TLC examinations of band II revealed it to be a mixture of two poorly separable compounds. Attempts to separate these by preparative TLC using a variety of solvent mixtures were not successful. However,

*Dept of Chemistry, Rizvi College of Arts Science and Commerce. E-mail: shams.h@rediffmail.com

application of reversed phase TLC led to its resolution. This furnished a UV positive band IIB which exhibited the entire insecticidal activity while the other two bands (IIA and IIC) with Rf lower and higher than IIB were inactive. The chemical purity of band IIB was established by the GLC analysis (see experiment).

The details of their toxicity of different extracts and bands are described in **Table A**.

Table A: Toxicity of extract/fractions from *A. nilagirica* against third instar mosquito larvae.

Extract/fractions	Concentration (ppm)	% mortality (mean)
Petrol extract	300	52.57
Acetone soluble (Fraction A2)	50	48.62
Fraction 2	50	58.35
Band I	50	37.94
Band II	15	45.36
Band IIB (Capillin)	10	75.85

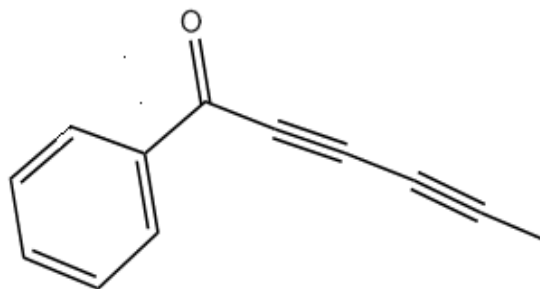
3. Results And Discussion

Identification of band IIB (Capillin):

The compound IIB developed orange color when sprayed with 2, 4-dinitrophenyl hydrazine on TLC plate, indicating the presence of a carbonyl group which was confirmed by an intense absorption band at 1645 cm^{-1} in the IR spectrum. In addition, it also displayed acetylenic stretching vibrations at 2240 and 2140 cm^{-1} , while absorption at 765 and 700 cm^{-1} suggested the presence of a monosubstituted aromatic ring⁽⁵⁾. Its UV spectrum (λ_{max} nm: 295,265) was characteristic of an acetylenic conjugated carbonyl system⁽⁶⁾. The molecular formula ($\text{C}_{12}\text{H}_8\text{O}$) of the active principle was deduced from its mass spectrum (M^+) 168.

Besides five aromatic protons between δ 7.49 and δ 8.12 the PMR spectrum due of IIB contained only one singlet (3H) at δ 2.08, possibly due to propargylic methyl group⁽⁴⁾. The ^{13}C NMR showed the presence of six aromatic, four acetylenic, one carbonyl and one methyl carbons.

The above data were found to be in perfect agreement with those reported for capillin (1; 2, 4-hexadyn-1-one-1-phenyl)⁽⁵⁾. Thus the compound IIB was characterized as capillin (1).



capillin (1).

Capillin is known to exhibit various interesting biological properties such as fungicidal, antifeedant, antimicrobial, and anti-inflammatory activities^(5,7,8). We report here for the first time its insecticidal property.

4. Experiment

Bioassay: - Late third instar larvae of mosquito, *Culex pipiens quinquefasciatus* say, were used for evaluation of insect toxicity. Different concentrations of extracts/fractions/isolated compounds in acetone were prepared and added to 50ml of water containing 20 larvae. Mortality was scored after 24 hr.

Instrumentations And Chromatographic Methods:-

The PMR and ^{13}C NMR spectra recorded on a Bruker AM 300 spectrometer. Alumina TLC plates (20X20cm) were prepared by spreading a slurry of neutral alumina (8g) and fluorescent indicator (25mg) in 16 ml distilled water. The plates were activated by first drying at room temperature and then at 100°C for 1 hr.

For reverse phase preparative TLC the plates were first impregnated with 5% solution of liquid paraffin in the petroleum ether (b.p. 60-80) and kept in the fumehood (15 min) for removal of the petroleum ether.

Mixtures (8-10 mg per plate) were spotted and the plates were then run in a chamber with methanol : water (65:35 V/V) as the developing solvent, 80% of which

was previously saturated with liquid paraffin. After development (100min) the plates were taken out from the chamber and kept in the fumehood for the removal of the solvent and redeveloped in the similar way.

Plant Material:-

A. nilagirica was collected from Mahableshwar. It was identified by Dr.S.S. Joshi of Botany Department, Rizvi College of Arts Science and Commerce.

Extraction Of Plants:-The powered air dried stem and leaves (560g) were extracted (soxhlet, 24 hr) successively with petrol, chloroform and methanol. The extracts on evaporation yielded crude resinous mass.

Isolation Of Active Principle (Capillin):- The crude petrol extract (21.7g) on triturating with acetone furnished two fractions, fraction A1, acetone insoluble (7.7g) and fraction A2 acetone soluble (13g). The acetone soluble fraction on concentration was subjected to column chromatography over silica gel (150g) and eluted with mixtures of solvents (petrol, petrol: EtOAc, EtOAc) of increasing polarity. Twelve fractions (500ml each) were collected and assessed for insecticidal activity. Fraction 2, (3g) which contained most of the activity was further fractionated by preparative TLC (petrol: CHCl₃, 3:1, double run) where three bands were obtained.**Table: B.**

Band	Weight	Rf	Insect Toxicity
I	1.7 g	0.34	Weakly positive
II	160 mg	0.36	positive
III	900 mg	0.56	negative

Band II was found to be a mixture of two poorly separable compounds. Preparative TLC utilizing different solvent systems (EtOAc: petrol, 10:90; C₆H₆: CHCl₃, 85:15) followed by multiple developments failed to show any resolution. Finally, it was separated by reversed phase preparative TLC where three bands, **IIA**, (Rf 0.1 to 0.47); **IIB** (Rf 0.47 to 0.57) and **IIIC** (Rf 0.8 to 0.99) were isolated and assessed for toxicity. Band IIB showed insecticidal activity. Its purity was established by GLC analysis.

It was crystallized from acetone and m.p. 80-81 (lit m.p.79.5-80.5)14; UV ϵ_{max} nm (log e): 295 (4.14), 279(4.24), 267(4.17);

IR cm⁻¹: 2240, 2140, (C=C), 1645 (C=O), 1600, 1580, 1460, 765, 700;

PMR (CDCl₃);

ä 2.08 (3H, s, Me), ä 7.51 (3H, m, ArH), ä 8.12(2H, m, ArH);

¹³C –NMR (CDCl₃); 177.1 (C-1), 136.6(C-1'), 134.3 (C-4'), 129.5 (C-2', C-6'), 128.6 (C-3', C-5'), 86.4 (C-3), 78.4 (C-5), 70.8(C-2), 63.4 (C-4), 4.9 (C-6);

MS (m/z): 168(M⁺), 140, 105, 91, 77;

GLC; 3% OV 17, temperature programmed 95-240 at 4/ min., Rt: 26.2 min.

5. Acknowledgement

The Author is thankful to University of Mumbai for the financial support during the work and BHABHA ATOMIC RESEACH CENTRE for providing the spectral analysis.

6. References

1. F. Bohlman, T. Burkhardt, and C. Zeevo,(1973), *Naturally Occurring Acetylenes*, Academic Press, (new York).
2. Panero, J. L and Funk, V. A., (2002). Toward a phylogenetic subfamilial classification for the Compositae (Asteraceae). *Proc. Biol. Soc. Wash.* 115: 909-922.
3. Klayman, D.L., Lin, A., Acton, N., Scovill, J.P., Hoch, J.M, Milhous, W.K., Theoharides, A.D. and Dobek, A.S. (1984), *J. Nat. Prod.*, **47**, 715
4. Nair, M.S.R., Acton, N. , Klayman, D.L., Kendrick, K., Basile D.V. and Mante, (1986), S., *J. Nat. Prod.*, **49**, 504
5. Nash, B.W., Thomas, D.A., Warburton, W.K. and Williams, T.D. (1965), *J. Chem. Soc.* , 2983
6. S.P. Ambasta , (1986) ,*The Useful Plants of India*, Publication and Information Directorate, CSIR (New Delhi), 55
7. Yano, K. J., (1987), *Agric. Food Chem.*, **35**, 889
Fukumaru, T., Awata, H., Hamma, N. Komatsu, T., (1975) *Agr. Biol. Ch*

DETERMINATION OF STABILITY CONSTANTS OF DIVALENT METAL IONS IN TERNARY COMPLEXATION

Farooque Basheer Ansari* and Mazahar Farooqui**

Abstract

pH – metry investigation on the complex formation equilibrium of Ni^{2+} (M_3), Co^{2+} (M_2) and Mg^{2+} (M_1) with Glycine (Gly) (L_1) as a primary ligand and Oxalic acid (OXA) (L_2) or Malonic acid (MAL) (L_3) as a secondary ligand shows the formation of ternary systems. For present work different molar ratios of the metal, primary ligands and secondary ligands are used. The ionic strength of 0.1 Molar was kept constant using $NaNO_3$. The glycine (L_1) and OXA (L_2) or MAL (L_3) with metal shows a order of $Ni^{+2} > Co^{+2} > Mg^{+2}$

Keywords: Potentiometric Studies, Ternary Complexes, Glycine, Oxalic acid, Malonic acid, Mixed-Ligand Complexes, Stability constants, Calvin- Bjerrum method.

Introduction

For the present work we have used glycine (L_1) as a primary ligand and dicarboxylic acids such as oxalic and malonic as secondary ligands. There are various papers cited in the literature regarding complexation of glycine (L_1) alone¹ or glycine along with other ligands^{2,3}. Literature survey reveals that there are various ligands used, which gives complexation⁴⁻⁸ with Ni (M_3), Co (M_2) or Mg (M_1). Glycine (L_1) is a α -amino acid and building block of protein. Its interaction with metals and other molecules will lead to understand various biological processes. Literature survey reveals that very less work has been done on the study of stability constant of ternary complexes (M:L₁:L₂) by using molar ratios 1:5:5, 1:5:6, 2:3:3, 2:3:4. Oxalic acid and Malonic acid

are bidentate ligands and therefore able to form more stable complexes as compared to mono-dentate ligands. Almost no work has been done in these molar ratios using Glycine (L_1) as a primary ligand and Oxalic acid (L_2) and Malonic acid (L_3) as a secondary ligand.

Experimental

All chemicals used in this study were of Analar grade obtained from S D. fine chemicals Ltd. Double distilled water was used for preparation of solutions. The NaOH solution of requisite concentration was prepared and standardized by using potassium hydrogen phthalate. The ionic strength in all the setup was maintained by using $NaNO_3$ solutions. Following sets of solutions were prepared.

* Rizvi College of Arts, Science & Commerce, Bandra (W), Mumbai- 400050 (M.S.) India.

**Post Graduate and Research Centre, Maulana Azad College, Aurangabad - 431001 (M.S.) India.

*E-mail: farooqueansari2007@rediffmail.com

Experimental Set

Set – I	HNO ₃ (0.1 M) + NaNO ₃ (1 M)
Set – II	HNO ₃ (0.1 M) + NaNO ₃ (1 M) + Glycine (L ₁) (0.1 M)
Set – III	HNO ₃ (0.1 M) + NaNO ₃ (1 M) + Glycine (L ₁) (0.1 M) + Metal (0.1 M)
Set – IV	HNO ₃ (0.1 M) + NaNO ₃ (1 M) + OXA (L ₂) or MAL (L ₃) (0.1 M)
Set – V	HNO ₃ (0.1 M) + NaNO ₃ (1 M) + OXA (L ₂) or MAL (L ₃) (0.1 M) +Metal (0.1 M)
Set – VI	HNO ₃ (0.1 M) + NaNO ₃ (1 M)+Glycine (L ₁) (0.1 M)+OXA (L ₂) or MAL (L ₃) (0.1M)+Metal (0.1 M)

Each set of solutions was diluted to 50 mL in a standard flask. Each solution was titrated separately with standard NaOH solution. A pre-calibrated pH-meter was used to monitor the pH during titration The

log KMX and log KMX_Y values were calculated by using computer programme in Excel.

Results And Discussion

A Calvin – Bjerrum method was used to find out stability constants of Ni (M₃), Co (M₂) and Mg (M₁) metals with above mentioned ligands. The nickel and cobalt are from transition metal series and well-known for Complexation. Magnesium is also equally important from biological point of view. The complexation was carried out in presence of NaNO₃ to maintain the ionic strength. The pH-meter data was used to calculate ζ_A^- , from which protonation constants were calculated .Further the pH-metric readings were used to calculate ζ^- for ternary complex, from which stability constants were found out.

The values of stability constant reveal that :

1. The release of H⁺ ions from secondary ligands like oxalic acid and malonic acid, lowers the pH value which is also an indication of the formation of ternary complex.
2. The mixed-ligand curve lies below the pure ligand as well as those of binary metal ligand curves indicating the formation of (M:L₁:L₂) complex

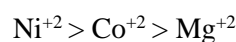
species.

3. The pH of hydrolysis in all the mixed-ligand complexes studied was found to be higher than the pH of hydrolysis of the individual complexes.
4. There was no drift in the pH values due to hydrolysis precipitation upto the pH range studied for respective system.
5. Since the mixed-ligand curve did not coincide with either of the individual metal titration curves in the lower pH range, the formation of complex by simultaneous equilibria was inferred.
6. The formation of mixed complex species in solution was supported by absence of any solid phase during the titration of ternary mixture.

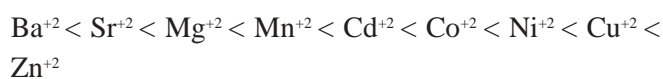
The log KMX_Y values for Ternary Complexes⁹ of OXA (L₂) and MAL (L₃) are shown in Table-1.

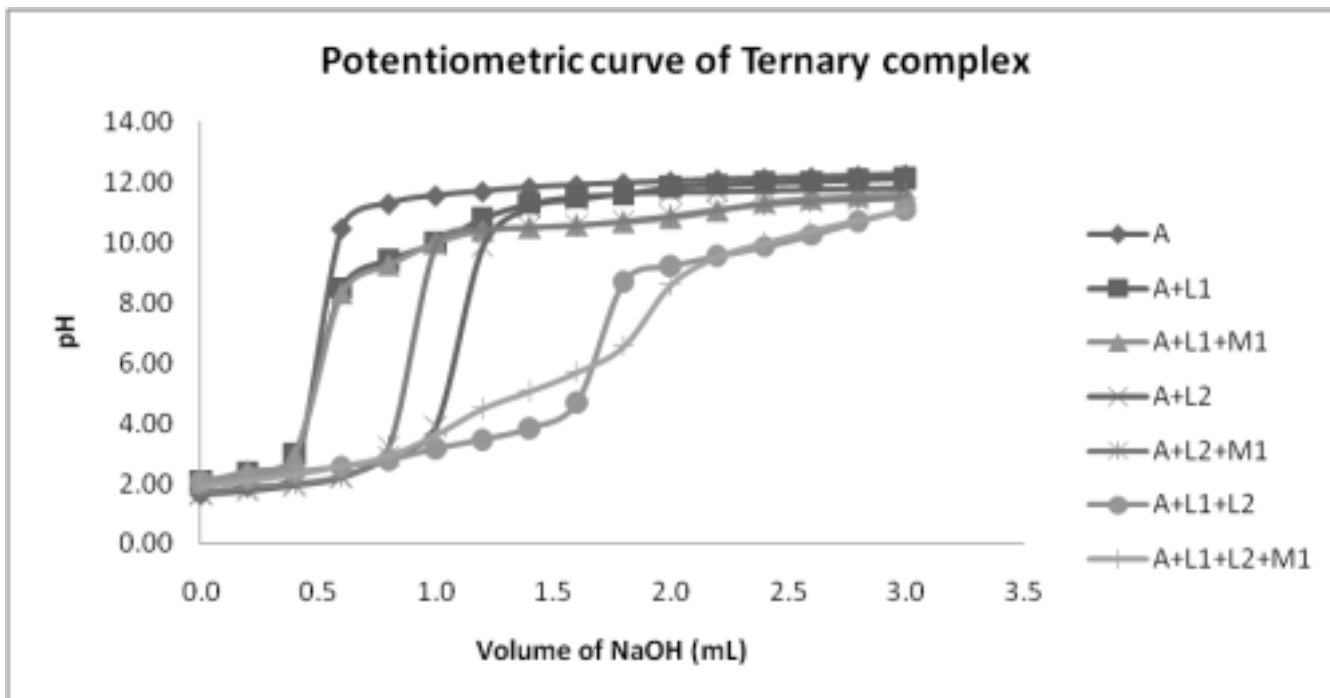
During the present work, we observed that in almost all the cases the stability constant values were in the

order of-



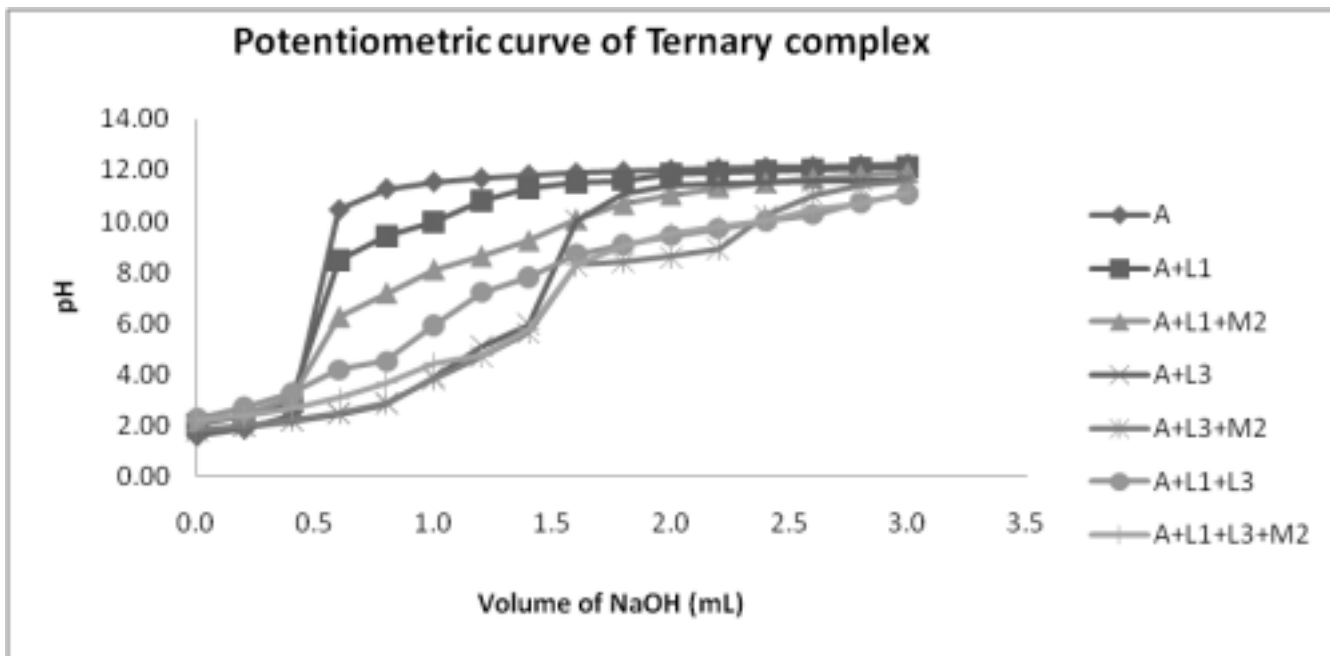
The order for different metal, ternary complexes reported by Eman Shoukry¹⁰ is





(M₁ = Magnesium, L₁ = Glycine , L₂ = Oxalic Acid , A = HNO₃)

Fig. 1 : Potentiometric curve of Ternary Complex



(M₂ = Cobalt , L₁ = Glycine , L₃ = Malonic Acid , A = HNO₃)

Fig. 2 : Potentiometric curve of Ternary Complex

References

1. Mashhood Hussain, Rizwanul Haque and Wahid U . Malik. (1964), *Jour. Ind. Chem. Soc.*, 41, (5), 394 - 395,.
 2. S. Kantaiah and P. Linghaiah, *Acta Ciencia Indica*, XXVIII C, (02), 101-107.
 3. M. Sivasankaran Nair, M. Santappa and P. Natarajan (1980), *Ind. J. Chem.* , 19A, 1106,.
 4. Pulimamidi R Reddy and Pallerla Manjula, (2007), *J. Chem. Sci.*, 119, (06), 603-612.
 5. S . Belaid. S. Djebbar, O. Benali – Baitich, S. Ghalem, M.A Khan and G. Bouet, (2005), *Asian J. Chem*, 17, (02), 811-821.
 6. Prajakta N. Deshmukh and V.S. Jamode(2010), *Asian J. Chem*, 22, (04), 2585-2588.
 7. Farooque Basheer Ansari , S.K. Patel and S.H. Quadri , *Int. J.Chem.Sci*(2009), 7,(02), 1033-1038.
 8. Sangita, Sharma, Mayur C. Shah, Neha Patel, J.J. Vora and J.D. Joshi(2005), *Asian J. Chem*, 17, (02), 871-876.
 9. Farooque Basheer Ansari , Mazahar Farooqui and S.H. Quadri , *Rasayan J.Chem.* (2010) , 3,(02), 359-362.
 10. Eman M. Shoukry(2002), *Acta Pharm*, 52, 189.
-

Silenced Voices-Oppression of the subalterns in the books of Charles Dickens and Mulk Raj Anand

* Beena Pant

Abstract

This paper is an attempt at a comparative analysis of Charles Dickens' "Oliver Twist" and Mulk Raj Anand's "Cooli" based on the Subaltern theory. There is a great similarity in their works even though they belong to different times and regions. Anand's protagonist is presented as a frail, defenceless figure who is a victim of exploitation. Likewise the function of Oliver is to reveal the lack of mercy and charity in society. Both writers believed that fiction could be used to alleviate the suffering of marginalised groups. The subalterns of two distinct societies, living within the confines of diverse cultures are crushed by an inherently similar hegemony in the fictional works of the two writers.

Keywords: Subalterns, Exploitation, Marginalise

Subaltern theory takes the perspective of the "Other" as the one who has had no voice because of race, class or gender. This theory is based on deconstruction as Jacques Derrida has proposed it. It emphasizes that norms are established by those in power and imposed on the "Other".

Based on this premise I have undertaken a comparative analysis of Charles Dickens' "Oliver Twist" and Mulk Raj Anand's "Coolie" as both writers have expressed their intense concern towards the downtrodden. Although the two writers belong to different backgrounds and have been set apart by the turn of almost one century, there is much that is similar in their works.

M.K.Naik in his study of Mulk Raj Anand has mentioned that "the general Strike of 1926 in Great Britain made him conscious of the class war between

the haves and the have-nots in modern civilization whether in the West or the East"(Naik). Also, during the Jalianwala Bagh incident, Anand had suffered at the hands of the police. He was caned for breaking the curfew and during the civil disobedience campaign of 1921 he was imprisoned for a day. His hatred of imperialism was immense and along with this he was disillusioned by the cruelty and hypocrisy of Indian feudal life with its castes, creeds, dead habits and customs. He was obsessed by the memory of all the suffering that he saw around him. He became a novelist with a mission and preferred to use this form of writing to others. In his non-fictional work, Apology for Heroism he has remarked:

This form of creative writing which is the book came to me much more naturally than any other form, because through this I could live through the experience of other people and realize what silent passions burst in their hearts, what immediate and ultimate sorrows

*Vice Principal and Head of Department of English Department in Rizvi College of Arts, Science & Commerce, Mumbai, Email id : beenapant54@gmail.com

possess them, where they want to go and how they grapple in their own ways with their destinies (Anand).

Anand 's *Coolie* is the odyssey of Munoo, an orphaned village boy from the Kangra hills, who sets out in search of a livelihood. The central theme of the novel is the tragic denial to a simple, landless peasant, of the fundamental right to happiness. The terrible destiny of being a victim of exploitation is stamped upon Munoo. He knew how his father had suffered at the hands of the landlord who had seized his means of survival – five acres of land. On account of scanty rain the harvest had been poor and the interest on the mortgage covering the unpaid rent could not be paid. Munoo could never forget that his father left this world, a bitter and disappointed man. His mother was left a penniless beggar to support a young brother-in-law and a child in arms.

Coolie touches the pathetic and sublime areas of human experience. Here, Anand explores the limits of pain central to existence. He places Munoo in opposition to a debasing and debased society – a frail defenceless figure in a predominantly hostile world. Society is the great destroyer that fells Munoo and his like. Anand introduces a number of characters in the novel and most of them are shown to have a prejudice against the hill boy. We read about his miserable existence first with his uncle and aunt in his village Bilaspur, then with the Bank-Sub-Accountant's family at Sham Nagar, where Munoo works as a servant, then with Munoo's benefactor Prabhadayal and his wife in the old feudal city, Daulatpur; and lastly with Mrs Mainwaring in Simla.

At every turn we are presented with a new situation and new cruelties and absurdities are swirled around. Whether it be the village, Taluka headquarters, District headquarters, Presidency capital or the national summer capital, the human situation rarely alters. Munoo is crushed by inhuman cruelty and poverty wherever he goes.

About Charles Dickens, Munroe Engel has pointed out that:

He learnt about poverty in the least desirable way, by being a poor child. His interests in the poor thereafter

were constant and passionate. The pity and pain of their condition were always apparent to him and part of the great obsessive centre of his writing. In all his fiction there was a purpose in his portraits of the poor (Engel).

Dickens' writings revolved around the lives of people living in London during the Victorian era. "Overcrowded and full of disease and crime, it is a site of problems from which Dickens eventually liberates certain characters such as *Oliver Twist* "(Flint). He believed that fiction could be an effective instrument of change as it had the power to reach the imagination and emotions of many people. He declared that every effort of his pen was intended to elevate the masses of society and to give them the situation they deserved among mankind.

The plot of *Oliver twist* proceeds on a single strand of Oliver's adventures and misadventures, Dickens expresses his concern by making the readers observe the wretched lives of the nameless, almost faceless submerged of Victorian society through the tale of one pauper orphan. Oliver is actually born in a kind of prison (the workhouse). The workhouse authorities imprison him for asking for more gruel and want to get rid of him. He is soon sold into apprenticeship to the parish undertaker. Once in London, Oliver's life starts with the threat of imprisonment for a theft. He escapes this threat but is captured by a gang of thieves who want to train him for a criminal future. The readers are gripped by this recurrent pattern of Oliver's imprisonment and it seems one long, oppressive nightmare.

Dennis Walder has said that Oliver is the touchstone for the lack of mercy and charity in society. His plight absorbs the main force of the narrative, at times to a profoundly moving extent. Isolated from those who can offer him compassion and security for which he so desperately longs, Oliver is a pitiful and largely passive object. His primary function is to reveal the neglect and corruption of those around him (Walder).

The view of the institutional society in this novel is clearly pointed. It is a view of the police, the courts, the work-house, and the parish administration. Institutional society as Dickens sees it is immoral,

inefficient, stupid and unfeeling. Wherever institutions touch, people are corrupted, acquiring a corporate, collective or administrative view of life. *Oliver Twist* is an attack on the poor laws of 1834. According to Kate Flint:

The first three instalments of *Oliver Twist* which appeared in Bentley's *Miscellany*, at regular intervals, between February 1837 and April 1839, with their scathing assaults on the conditions supposedly created by the New Poor Laws of 1834, attacking those who practised repressive in humanitarianism under the cloak of moral religious respectability and authority confirmed Dickens as the critic of contemporary society (Flint).

Through this novel Dickens expressed his suspicion of the religious establishment's attitude towards the poor. He was angered by the hypocrisy of organized religion as he felt that religious authority conveniently hid behind an outward garb of piousness. Oliver enters the world as a nameless, illegitimate orphan and is left to the mercy of church wardens and overseers. His request for more gruel is looked upon as an offence against Christianity.

Similarly, Mulk Raj Anand had seen villages groaning under poverty and sucked dry by parasites and religious priests. All these had cast a spell on his mind and he decided to write about the oppressed and marginalized group, the "Other" who were continuously being insulted and injured by the zamindars, the white sahibs, the money lenders and businessmen. It was the sight of the peasants that gave him the most poignant emotion.

Anand's aim was to humanize the protagonists like the coolie and the untouchable. His heroes were the down-trodden sweepers, coolies, the unemployed coppersmiths and farmers were rendered helpless by heavy debts. They were persecuted by the society of their times. In "Coolie" we see how evils of poverty and cruelty crushed a bud of youth before it could bloom. On reading the book our attention is directed to the vital need to restoring compassion among men, the conspicuous lack of which is shown to be mainly responsible for the woesome life and untimely death of an orphan-as a living value. In "Apology for Heroism"

Anand has mentioned that "the coolies were supposed to be sub-human. They worked from dawn to dusk, old and young, male and female, for their masters, and they were treated like dogs" (Anand).

He wanted to impress upon his readers that the coolie too has feelings, a mind, a heart, a soul to restore his dignity so that his status acquires an importance which begins to hold a worthy status in serious literature. Usually the coolie was taken for granted to be used like a cheap and useful machine, a shadow or an outcaste for all other purposes. People would heap abuses and indignities on him and he stood mute-an uncomplaining target. But Anand would rather ask:

Hath not a coolie eyes? Hath not a coolie hands, organs, dimensions, senses, affectations, passions, fed with the same food, hurt with the same weapons, subject to the same diseases, heated by the same means, cooled and warmed by the same winter and summer as anybody else? (Iyengar).

Both Mulk Raj Anand and Charles Dickens considered literature as a double edged sword, firstly as a weapon for attacking social, political, and economic institutions injurious to human freedom and equality of opportunity and secondly they saw it as the purveyor of a new vision of society.

Anand was of the opinion that the oppressed position of the Indian worker was similar to that of the English worker. He was deeply concerned with the poverty that existed in the villages, the cruelties of caste, with orphans, untouchables and urban labourers. Coolie reveals his intense anger at the state of the poor in India.

Dickens, likewise, expressed his extreme anger at the exploitation he saw around him. He attacked some of the specific evils, debtors, prisons, work-houses, schools, legal fraud in his novels where the major victims were individual or special group of children.

The concern of both writers has been expressed by making the readers observe the lives of two pauper orphans. With the belief that fiction can be used to alleviate the suffering of marginalized groups, they have

succinctly portrayed pictures of human misery. The subalterns of two distinct societies, living within the confines of diverse cultures are crushed by an inherently similar hegemony in the fictional works of the two writers. However, the protagonists have been written into history with the hope that they will be seen as agents of political and social change.

Works Cited :

Anand, Mulk Raj. *Apology for Heroism: A Brief Autobiography of Ideas*, Popular Book Depot, Bombay

Engel, Munroe(1959), *The Mutiny of Dickens*.London: Oxford University Press, Flint Kate(1936), *Dickens*, Sussex:The Harvard press.

Iyenger, K.R. Srinivas. (1985),*Indian Writing in Englis*., Sterling Publishers ,New Delhi.

Naik M K(1973), *Mulk Raj Anand*. New Delhi, Arnold Heinmann,.

Walder, Dennis,(1981), *Dickens and Religion*, Allen and Unwin, Lon

Transsexual, Transgender and Thirdgender Portrayal in Indian Literature

Bhaswati Parasar*

Abstract

The discourse about transsexual, transgender and thirdgender people is incredibly narrow as they have rarely spoken about themselves. As a result their identity is still shrouded in a mystery. Although they had been portrayed in literature since the ancient times, the portrayal had always been peripheral and most of the portrayals had substantiated the already existing popular myths about them. It is only recently that they are getting middle brow attention in academics of gender studies, literatures as well as in Hindi movies and the demystification about their identity and life is taking place. The present paper analyses the portrayal of these group of people in Indian ancient literature and also in contemporary writing.

Index Terms - Transsexual, Transgender, Third gender, Indian Literature

1. Introduction

The term 'transsexualism' was set current only in the late 20th century with the sexual revolution and development of sexual reassignment surgeries. It refers to a condition in which an individual desires to belong to the sex opposite from the one he or she is born with. Transsexualism has been variously described as a physical disability, a condition, a disease, a disorder, mental illness, perversion, paraphilia. But the use of such labels is often offensive not only to transsexual people but also to non transsexual people. The term appears in two major diagnostic manuals used by psychologists worldwide. They are the American Psychiatric Association's Diagnostic and Statistical Manual (DSM) and the International Statistical Classification of Diseases and Related Health Problems (10th revision, ICD, 10). Transsexualism is defined in the ICD 10 as "a desire to live and be accepted as a member of the opposite

sex, usually accompanied by a sense of discomfort with or inappropriateness of one's anatomic sex and the wish to have surgery and hormonal treatment to make one's body as congruent as possible with one's preferred sex. In the ICD, 10, Transsexualism fall under Gender Identity Disorder and the DSM uses Gender Identity Disorder as a synonym for Transsexualism. DSM further defines that there must be "evidence of strong and persistent cross gender identification which is the desire to be of the other sex. This cross gender identification must not merely be a desire for any perceived cultural advantages of being the other sex. There also must be evidence of persistent discomfort about one's assigned sex."

Transsexualism is often included within the broader term Transgender, which is generally considered an umbrella term for people who do not conform to typically accepted gender roles. Eg. Cross-dressers, drag queens and people who identify themselves as gender queer.

Assistant Professor, Dept of English, Rizvi College of Arts, Science and Commerce, Bandra (W), Mumbai.

Email: bhaswatiparasar@gmail.com

However, some transsexualists object to this inclusion. Because they feel that this inclusion might discourage the true transsexualist from getting medical and surgical care. But today, the medical community and many gender therapists actively encourage their clients to explore support within the broader Lesbian, Gay, Bisexual and Transgender (LGBT) community. The term Thirdgender refers to people who are categorized by their will or by social consensus as neither male nor female. The term “third” is usually understood to mean “other” than the two biological determination based on chromosome XX, XY as female or male. The third sex or gender may also represent an intermediate state between men and women, a state of being both (such as “the spirit of a man in the body of a woman”), the state of being neither (neuter), the ability to cross or swap genders, another category altogether independent of male and female. The term has been used to describe [Hijras](#) of India, Bangladesh and [Pakistan](#) who have gained legal identity.

2. In Ancient Literature

These terminologies might be new but the existence and reference to transsexual, transgender and third gender people can be dated back to the earliest forms of literature available in India. The Puranas, The Mahabharata, The Ramayana – all contain characters which can be claimed as mythic forbearers of contemporary transsexual and third gender people. The most popular and common image of a transsexual person in ancient Hindu literature is Shikhandi in Mahabharata. Shikhandi is the male reincarnation of Amba whom Bhishma had kidnapped for his younger brother. When Bhishma and his brother learn that Amba had loved someone else, they sent her back to her lover who insulted her and rejected to accept her as his wife. Dejected Amba then returned to Bhishma and requested for marriage. As Bhishma was bound to his oath of lifelong celibacy, he could not accept Amba’s request. Humiliation led Amba to carry out penance and great prayers with the desire to be the cause of Bhishma’s death. Amba was then reborn as Shikhandini, the daughter of Drupada, the King of Panchala. Shikhandini again did great penance and gained manhood and in the

battle of Kurukshetra, he fought against the Kauravas with Arjuna. Recognizing Shikhandi as Amba, Bhishma lowered his weapons. Knowing that Bhishma would react thus to Shikhandi, Arjuna hid behind Shikhandi and attacked Bhishma with a devastating volley of arrows. And invincible Bhishma was thrashed to destruction.

The incident reflect Bhishma’s attitude toward transsexual being. There is ample scope for discussion on to find out why Bhishma lowered his weapon after recognizing Shikhandi. Is it that he could not accept Shikhandi as a part of the male community and considered it humiliating and funny to fight a “weaker sex”? Or knowing that it was Amba, he felt guilty and resigned to his fate? But whatever attitude Bhishma might have toward Shikhandi, his action of lowering his weapons, has attached a stigma to the character. Shikhandi is viewed as an epitome of vengeance. It is really sad and depressing that after so much of penance and struggle, he was not successful in making people accept him as a normal individual. And in this respect the story is still relevant to the modern day transsexual, transgender and third gender community of India that they still have to struggle for their acceptance in society.

If Bhishma’s annihilation episode has created a negative impact on the character of transsexual people, the character of Brihannala from the same epic, has added some positive qualities to the thirdgender people. Brihannala is actually Arjuna, the great archer, in cross dressing and who is claimed by contemporary Hijras as one of their mythic-forbearers. When Arjuna refused her amorous advances, the nymph Urvashi cursed him that he would become a “kliba”, a member of third gender. Lord Krishna assured Arjuna that this curse would serve as the perfect disguise for him during his last year of exile. Arjuna took the name Brihannala and slipped in to the women’s attire, causing the curse to take effect. Arjuna then entered the city ruled by Virata and took royal patronage from the king to teach the princess Uttara and her female attendees the art of singing and dancing. Brihannala’s mastery in fine arts is recounted and emphasized in the epic. Perhaps this incident germinates the conception that the transgender people are born with

the best fine arts qualities. There are some cultures even in contemporary India who stick to this belief. In the state of Manipur, hijras are perceived to be beautiful and masters in acting and dancing. They rule the local theatre where most of the female roles are performed by them. But in most part of the country this quality of fine arts seems to have degenerated in to vulgar forms of entertainment and hijras are derided for their lewd behavior in public places.

A further tale from Mahabharata is that of King Bangasvana whom God Indra had transformed in to a woman. But the king implored Indra to remain as a woman, having found the experience of woman preferable to that of man.

Then, there is the story of Ila which is recounted in many Hindu traditional texts. Ila was a king who was cursed by Shiva and Parvati to be a man in one month and a woman the next. Apart from that, Lord Shiva's form of the androgynous deity Ardhanariswara and Lord Vishnu's incarnation as Mohini are often recounted as the divine hermaphrodite and the divine transsexual. These numerous references to transsexual and transgender people in ancient Hindu texts have led Goldman to comment – 'Few cultures have accorded this phenomenon so prominent a place in the range of mythology and religion as has that of traditional India' (Goldman, 1993 in "Transsexualism, Gender and anxiety in traditional India").

3. In Contemporary Literature

In the contemporary India, the discourse about transsexual, transgender and thirdgender people is incredibly narrow as they have rarely spoken about themselves. Popularly, stories about castration, anatomical and genital difference and sexual perversion lie beside legends of fearsome spirit of Hijra community which can be used to bless or curse. But very few of the people have traced these legends to actual interactions with the Hijra community. As a result they are regarded with a mixture of disgust, fear and awe. Resigned to the fringes of society segregated and excluded from most occupation, the hijras in India are forced to turn to begging and sex work in order to earn a living.

Dominique Lapierre in his powerful novel, the City of Joy, has depicted nicely the extreme poverty amidst which the hijras have to live with. But in his narration of the community although portrayed sympathetically, reiterates and strengthens the already existing popular stories of castration and abduction of boys whom they feel belong to their category. The prime theme of the novel is not the hijras but the trials and tribulations of a polish priest Stephan Kovalaski and the difficulties faced by a rickshaw puller Hasari Pal. But Lapierre starts his novel with description of hijras living in the slums of Calcutta, which serves as a perfect setting for his novel showing poverty in enormous and memorable detail. His emphasis on the excessive ritualization of the castration process, with songs revealing the extreme frustration at the lack of male genitals, adds to the popular notions about hijra community. The sexual difference is the only lens through which hijras perceive themselves and expect in return to be perceived. Gayatri Reddy in her pioneering book "With Respect to Sex", vehemently negates this identity construct. She comments "hijras are not just a sexual or gendered category, as is commonly contended in the literature. Their identities are shaped by a range of other axes, like kinship, religion, class and hierarchy of respect".

Although Lapierre focus more on ritualization and poverty, still he did not forget to focus in the integrity of the hijra community. He also exposed the power struggle within the community itself and illustrated their sense of belonging, love and trust for one another.

Another powerful portrayal of a third gender character appears in Khushwant Singh's novel "Delhi", where the central figure Bhagmati is a hermaphrodite. It is really interesting that the novelist has chosen a Eunuch and a prostitute and used her as a parallel to Delhi. The parallel runs on many aspects. So far as the outer appearance is concerned, the author finds both Delhi and Bhagmati unattractive. But inspite of their unattractiveness both are dear to the author. Khushwant Singh says "The hijra stands for a symbol of sterility. It can never conceive and I thought this was a wonderful symbol for a city in which so much has happened like a sexual intercourse that repeats itself....Delhistill not produced anything as great as one would have

expected of it". Apart from sterility another reason for drawing a parallel between a eunuch and Delhi is that a hermaphrodite symbolizes a harmony between male and female as he is a combination of both the sexes. Bhagmati symbolizes the secular spirit of Delhi also as she has equal respect for all the religions". Bhagmati has all the feminine emotions in her. Though a eunuch prostitute, she loves the narrator as a wife loves her husband; she looks after him and feels jealous when she finds him with another woman. "I know you will ask who I am to object to anything or anyone. She says on one occasion. She brushes the back of her hand to wipe the tears that are not there and continues, I am like the Purana Qila you have conquered; now you want the Red Fort and its white marble palaces?" Singh's choice of profession for Bhagmati and her emotional and social predicaments are very realistically drawn and there are only very few literature which focus on the condition and emotional predicament of a hermaphrodite on such a grand scale.

Timari N. Murari's *Taj: a story of Mughal India* also features a eunuch as one of the three main characters who narrates the story of the Taj. The passionate love story of Shahjahan and Anjumand till her death is voiced by all three main characters – Anjumand, Shahjahan and Isa, Anjumand's favorite eunuch. Murari has chosen all the three sexes (Anjumand - female, Shahjahan - male and Isa – eunuch) to create an authenticity around his narrative.

4. Conclusion

Although hijras have appeared sporadically in literature before, the portrayal was always peripheral. It is only recently that hijras are getting middle brow attention in academics of gender studies as well as in Hindi movies. This is evidenced by films such as *Tamanna*, *Dyara* and *Darmiyaan* which paradoxically hijras both deride as vilification and recommend as providing authentic image of them. Recently in 2008, the movie [Welcome to Sajjanpur](#) by [Shyam Benegal](#) explores the role of hijras in Indian society. The most recent film in this genre directed as much too western as to Indian audiences, is *Bombay Eunuch*, currently playing to critical acclaim in many US cities.

References

1. Goldman, R.P., (1993), Transsexualism, Gender and anxiety in traditional India, *Journal of American Orinetel Society*, vol. 113 (3), 374-401.
2. Lapierre, D., (1999), *City of Joy*, Arrow Books Publishers, P. 505.
3. Reddy, G., (2005) *With Respect To Sex: Negotiating Hijra Identity In South India*, University of Chicago Press publications.
4. Singh, K., (2000) *Delhi: A Novel*. Penguin Books India Pvt Ltd., New Delhi.
5. Murari, T.N., (1985), *Taj: A Story of Mughal India*. Penguin Books India Pvt Ltd., New Delhi.

About the College:

The Rizvi Education Society was founded by Dr. Akhtar Hasan Rizvi in the year 1982, who set his heart on the realization of a dream “The Establishment of a Mini University”, catering to diverse educational interest and aspirations. Rizvi college of Arts, Science & Commerce was established started in the year 1985-86. Today Rizvi Education Society’s Empire has expanded to unimaginable dimensions. There are 22 Rizvi institutes in all, not only in Mumbai but also in Jaunpur and Allahabad.

“**Humanize, Equalize, Spiritualize**” is the motto of the college. Besides, our President Dr. Akhtar Hasan Rizvi ‘s mission is education for all, in which he has succeeded in fulfilling his deep desire to promote the needy students who are not able to pursue higher education especially those belonging to the Muslim Minority Community.

Our college has completed 25 years from its inception. The college has committed itself to provide quality education to all strata and become a centre of excellence in the process of facilitating effective teaching and learning. The college has grown tremendously and has earned a distinction of high repute in the realm of

higher education. The college has skillfully formulated long term as well as short term plans for academic, curricular, co-curricular, extra-curricular and extension activities in accordance with the tenets of the holistic development of students. University of Mumbai conferred on us the prestigious “**Guru Nanak Trophy**” for securing maximum points in sports competitions among 770 colleges in the years 2009 - 2010 and 2010 - 2011. We also received the “**Best Liked College Award**” among all the colleges in India with a Cash Prize of Rs. 5 Lac from V channel and Face book sponsored by Nokia. We are permanently affiliated to the University of Mumbai and recognized by UGC. The College offers three years **Bachelor Degree** in Arts, Science & Commerce in Aided Section, and two years Master degree in Commerce (M.Com). We also offer other **Bachelor Degree** programs in Unaided Section like B.Com. (Accounting & Finance) ,Bachelor of Management Studies(B.M.S), Bachelor of Mass Media(B.M.M) & Bachelor of Banking and Insurance (BBI). We also have three year integrated courses of B.Sc. (Computer Science) and B.Sc. (IT) in the Science Section. The College is also a Research centre for Zoology and Chemistry recognized by University Of Mumbai.

Journal Committee

Editor In Chief : Dr M.Z. Farooqui	Advisory Panel : Mrs Beena Pant (Senior Editor)
Executive Editor : Mrs. Anjum Ara Ahmad	Mrs Farhana Khalidwali
Assistant Editor : Dr. Dattatraya Parhad	CA Pradeep Nagori
	Mrs Swati Vora
	Technical Support : Mr Amin Mulani
	Mr Masoom Ali
	Mr Mohd Abbas Ali

General Information

- The aim of journal is to provide a platform for researchers, practitioners, academicians and professional from diverse domains to share innovative research achievements. Journal is dedicated to publish high quality research papers providing meaningful insights into any subject area of current interest. **International Journal Of Research** provides a platform for dissemination and publications of your academic work on topics which have substantial inter disciplinary content both Indian as well as global context.
- It is our pleasure to invite you to contribute research paper/ article to **International Journal of Research** a peer-reviewed Bi- Annual journal of Rizvi college of Arts, Science & Commerce, Mumbai. Original research papers, conceptual articles and case studies are invited in the journal, based on current data and supported by primary/secondary sources. Submission of a manuscript implies that the work has not been published, accepted or is under review elsewhere.
- All editorial and administrative correspondence for publication should be addressed to the **Mrs. Anjum Ara Ahmad, Executive Editor - International Journal of Research, Rizvi College of Arts, Science & Commerce, Off: Carter Road, Bandra (W), Mumbai – 400 050 (Maharashtra) Email id: executiveeditor.ijr@rizvicollege.edu.in**
- Information on pattern on submission of manuscript is available in the “Guidelines for Contributors”.
- The Editors reserve the right to reject/ return to the author(s) any manuscript that in their opinion is not suitable for publication in International Journal of Research, without expressly stipulating the reasons for doing so. Under no circumstances will the identity

of the reviewer(s) be disclosed to the author(s) or to any other third party not involved in the editorial process.

- Research Papers/Articles received will immediately be put before the Editorial Committee for initial review. Correspondence and proofs for correction will be sent to the first author unless otherwise specified. The article will be published after receipt of the corrected proofs from the authors.
- Annual subscription details with the format for obtaining the journal are given separately and the interested persons may avail the same accordingly.
- Views expressed in the articles are those of the respective authors. International Journal of Research, its Editorial Board, Editor and Publisher (Rizvi College of Arts, Science & Commerce) disclaim the responsibility and liability for any statement of fact or opinion made by the contributors. However, effort is made to acknowledge source material relied upon or referred to, but International Journal of Research does not accept any responsibility for any inadvertent errors & omissions.
- Copyright © Rizvi Education Society’s Rizvi College of Arts, Science & Commerce, Mumbai. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the Publisher. The authors are required to sign the “Transfer of Copyright” agreement before article is published in the journal.
- Fees and Payments: Authors are supposed to pay the following fees towards editor’s fee and printing cost.

For India based Authors	INR 1000
For outside- India Authors	USD 50

Published by : Rizvi Education Society’s Rizvi College of Arts, Science & Commerce,
 Off : Carter Road, Bandra (W), Mumbai – 400050, India
 Tel : + 91-22-26480348, + 91-22-26041696
 Fax : + 91-22- 26497448
 Website : www.rizvicollege.edu.in
 Email id : chiefeditor.ijr@rizvicollege.edu.in

.....