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VIDWAT (विद्वत) in Sanskrit means: know, understand, find out, learn, ascertain, discover, and expound.

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Research Papers

1 - 16

India's Rapid Economic Growth and Industrialization at What Cost?

Krishna Chaitanya Vadlamannati

The paper investigates whether the decline in environmental quality in India is due to high energy consumption level which is a result of rapid economic growth. The paper estimates the relationship between energy consumption and economic growth. It also studies the impact of excessive economic growth rates on energy consumption levels by means of threshold ordinary least squares (TOLS) method. The paper shows that rapid economic growth rate further increases the energy consumption levels in India.

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Life Insurance Sector in the Liberalised Environment – The Paradigm Shift and Player Performance

Dr. J. Chandra Prasad, S. Hari Babu
Dr. A.V. Naga Varma

The insurance industry in India has witnessed a number of changes as a result of the opening up of the sector to private players. This paper explores the changing dimensions in the sector since liberalization. The industry has observed a paradigm shift from traditional products to market linked products. The study focus on evaluating the financial performance of the players. LIC managed to withstand the competition and proved its domination over the private players in the form of operational and financial efficiencies.

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Post Office Savings and its Relevance in Rural Areas – A Study on the Impetus for Rural Investment with Reference to Kumbalangi in Cochin

Hari Sundar G, Prashob Jacob

Mobilization of resources has remained as a major concern in many developing countries. Varieties of investment options are available from different players in the market to meet the needs of the poor and lower income groups. Out of the investment options available, Post office savings scheme has not gained much importance though the interest rate offered by the scheme is higher compared to other savings schemes. The paper deals with the investment pattern in a rural area in Cochin District (Kerala, India)

Case Study
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Lamb to the Slaughterhouse?

Dr. Matthukutty M Monippally

Grooming the managers into leaders is very important aspect in any organization. The case study deals with professional dilemmas of Sushma Patel, one of the women medical representatives of Alpha Pharma. Hemant Rai, the Zonal Sales Manager mentors Sushma in the professional career. The author provides a perspective of human relations in the work life situation.

Book Review
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A New Beginning - The Turnaround Story of Indian Bank

Ranjana Kumar

This is turn around story of Indian Bank. Ms Ranjana Kumar Ex-CMD of the Bank narrates the strategies adopted in the bank. Ms Ranjana Kumar instilled confidence in the work force of the bank. The author took many real life examples and demonstrated how leadership, motivation and will power can turn things from a totally negative perspective to totally positive approach.

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Subject Guides to International Business Information

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Looking for free websites that provide international business data? That search can be time consuming. Instead of searching for individual sources, try subject guides. These guides provide a detailed overview of the kinds of resources available freely on the web.

Focus

Risk comes from not knowing what you're doing
- **Warren Buffett**

The 158-year-old Lehman Brothers is extinct now. The biggest bankruptcy petition known to mankind is filed in September 2008 by Lehman Brothers Holdings Inc - the America's fourth-largest investment bank. The so called "financial melt down" is the hot topic now and the future generations will get to learn about this great investment company in the history books or as a Case Study in a B-School.

Bank of America completed acquisition of Merrill Lynch. AIG, the giant Insurance Company is struggling with financial crisis. Apart from bailing this out, Federal Reserve had bailed out Fannie Mae, Freddie Mac and Bear Stearns to protect the US housing loan market which other wise would have collapsed. That collapse would have caused unmanageable losses for hundreds of banks all over the world that have some interest or other in US property market. Auto majors- General Motors, Ford and others are looking for financial support from Federal Reserve / Financial Institutions to wriggle out of collateral and credit obligations.

Tribune, the Media Moghul that owns eight newspapers and 23 television channels, including the Los Angeles Times filed bankruptcy petition under Chapter 11. The Stock Markets across the world are under severe bear grip. The financial world is in great crisis.

The impact of the crisis in Banking Sector in the Global Village has resulted in dark clouds engulfing all economies. The ripple effect is seen in India too. The debate is not whether GDP is plummeting under 8% or not; the issue is whether the recession signals are seen by India Inc. The crux is continuation of remedial measures being taken up to fight raising inflation and impending recession.

Why it happened? This is a human failure: the failure of the so called professionally managed corporate entities - the malicious Corporate Governance, infectious greed of some rogue bankers. Regulators of the law or internal management across the globe have committed the common mistake - missing the obvious danger signals in financial sector.

The failure of many American Banks and Investment banks lead us to conclude that the Risk Management frame work is not in place in these banks; Performing Assets and profit figure they announce every quarter/half year are not that accurate; the disclosure norms on various derivative instruments and accounting of the profits/losses arising from the speculative positions are not implemented in letter and spirit. Though the Basel Committee on Banking Supervision had worked out a framework for measuring capital adequacy and the minimum standards to strengthen the soundness and stability of the international banking system in 1987, the implementation and monitoring part is not very effective. If the assumption that all the international banks across the globe are said to have achieved the Capital Adequacy and Prudential norms long back, why would the big Banks like Fortis, Citi Group, Lehman Brothers, and other Mortgage Banks run into liquidity problems?

The solution to this financial crisis is to follow prudential norms which any person executes in lending his own money. The risk mitigating measures of this type are the sole prerogative of the Top Management and each one should device its own policy. A number of risk management tools are in place that quantify the risk exposures. The Corporate Governance framework has inescapable social responsibility to safeguard the interest of the stakeholders.

The silver lining of course is seen on the horizon - the Regulators are awake; the Top managements of the banks and Corporate Entities are tightening the Risk management frame work.

Wishing the world economy a quick turn around and all Vidwat readers a very ***happy*** New Year.

K. Seethapathi

Prof. K. Seethapathi
Editor

India's Rapid Economic Growth and Industrialization at What Cost?

Krishna Chaitanya Vadlamannati

The paper investigates whether the decline in environmental quality in India is due to high energy consumption level which is a result of rapid economic growth. The paper examines this using environmental and macroeconomic variables based on the data from 1970 to 2005. Through the time series data, OLS regression analysis was employed to estimate the environmental degradation caused by the increase in energy consumption. In the next step, using the same analysis the paper estimates the relationship between energy consumption and economic growth. It also studies the impact of excessive economic growth rates on energy consumption levels by means of threshold ordinary least squares (TOLS) method. The results reveal that higher energy consumption indeed leads to CO_2 emission in India. The author finds that energy consumption is a resultant of rapid economic growth, creating scope for large demand which is caused by increase in investment levels, population, and trade in energy intensive products. The paper shows that rapid economic growth rate further increases the energy consumption levels in India.

Acknowledgements: I would like to thank Mr. V. Venkat Sreedhar, Chief Finance Manager, West African Cements (WACEM), Togo, Africa, Dr. Jie He, Assistant Professor, Department Economics and GREDI, Faculty of Business Administration, University of Sherbrooke, Canada, for their discussion on the topic and valuable comments & suggestions while I was working on this paper. I also extend my heartfelt thanks to Mr. Srivyal Vyyuri, formerly with Ohio State University, US, for providing some valuable information about key databases. However, remaining errors, if any, are mine.

JEL classification: Q40, Q41, Q43, O13 & O14

Keywords: **CO_2 Emission; Energy Consumption; Economic Growth; Industrialization.**

Introduction

It is the mad rush for rapid economic growth led by industrialization in India which is having a negative impact on the ecological management. It is evident that this rapidly growing economy is causing severe pollution problems in the form of emissions of various forms of gases like the carbon di oxide (CO_2 hereafter). The higher emissions are a resultant of higher energy consumption. Higher rate of growth of population, rapid industrialization, industrial trade, increase in number of vehicles as a result of a very high economic growth are acting as major driving forces towards higher energy consumption. The economic growth exhibited in the countries like China and India are exuberant. The higher growth levels have placed these two economies in the different League of Nations altogether. China and India together contribute world's 30% of GDP in US $ constant PPP in 2002-03 (World Bank, 2004). In 2006, China was growing at a rate of 10%, while India was growing at 9% and Brazil at 4%.

The liberal school of thought views economic growth an important ingredient of prosperous human development and is particularly important for a country like India. This is because India has made inadequate progress since 57 years of its independence. Poverty levels though decreased, still hovers over 25% of the

population. The problem with previous years was a low growth of GDP, what many call as '*the Hindu Rate of Growth*' which resulted in a much low percapita income 0.growth. The GDP of India between 1950 and 1980 was around 3% and annual growth of percapita income was just 1.5%. For a country like India which is world's second largest populous nation, this growth rate was found to be inadequate to make any significant impact on overall progress of the nation. Some initiation was taken up during the 1980s by the government of India to set things right. Though they were half hearted, it improved the per capita income growth to 3.0% as poverty levels fell from over 45% to 35% by the end of 1980. Thus, India realized that only strong economic growth rate could increase the percapita income levels of the people which in turn help in bringing down the poverty levels and improve the socioeconomic conditions of the poor. This further encouraged the government to make some serious corrections in its economic policies. Thus, the foundation for a strong economic growth was laid in the form of economic reforms in 1991 which is popularly known as Structural Adjustment Program (SAP hereafter). This program was a result of a "closed economic policy" which India followed over the decades which resulted in a severe macroeconomic crisis by early 1990s. The reforms focused on strengthening the economic growth which should translate into reduction of poverty levels, improving poor socio-economic conditions and better standard of living for the people of India. The reforms started yielding results by mid-1990s as India posted a growth rate of over 7% for three consecutive years followed by a low growth rate which was a result of world wide recession. On the other hand, the governments kept changing, but the reforms program continued. More reforms brought a much higher growth rate and this was evident during the early 2000 as the growth rate for the first seven years of 2000 was over 7.5% per annum. Thus, many argue that the higher growth rate is the only panacea for the poor socio-economic conditions prevailing in the developing countries.

This being so, on the other hand critical school of thought speaks against this rapid rate of growth which emerging economies are exhibiting. They opine that there are environmental costs and damages associated with rapid economic growth that result in expansion of economic activities. This ever increasing consumption demand would have global side effects such as high emissions leading to global warming, greenhouse effects and destruction of forests. Added to this, the environmental degradation can also add to the problems of imposing higher costs on the poor by increasing the expenditure of health related issues. According to UN report, the world's poorest 20% of population take this burden which is a resultant of environment degradation. It is also said to be responsible for 80% of the world's diseases due to pollution in the form of water, air and land due to rapid industrialization (United Nations Report, 1998).

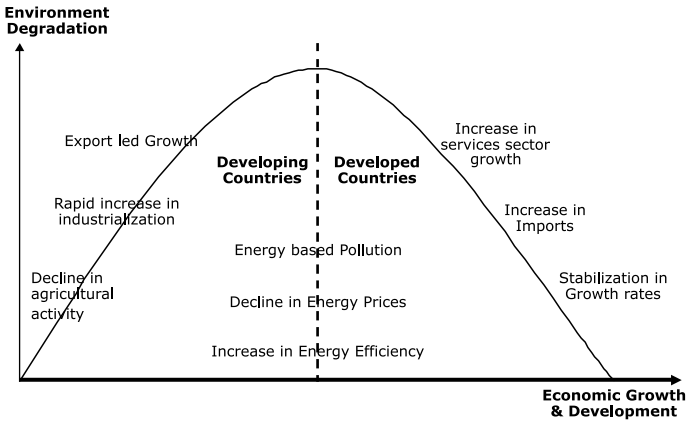


Exhibit – 1: Environmental Kuznets Curve (EKC)

Consider the example of the acquisition spree by cement companies in India. As on 2006, the cement industry was in a boom with over 50 new cement companies being commissioned with a with an installed capacity of over 1000 million tonnes per day. This means for each ton of cement produced in India, one ton of CO_2 is released into the atmosphere. China is not far off in this achievement and it rivals India in this aspect too. One can imagine the state of affairs of this rapid economic growth on sustainable development in both these countries. If the cement industry alone contributes to such a massive pollution imagine the extent of pollution from other industries. Considering that cement industry in India consumes over 20% of coal reserves and over 3 - 4% of total power generated (if the breakup is both domestic and industrial consumption) this may well increase to over 20% of total power consumption, so now the total energy consumption, (coal + power) is a huge consumption by all factors. Similarly the other manufacturing industries show how alarming the situation is in both these countries. The problem associated in the case of India which is in the stage of rapid industrialization. This stage is a resultant of high economic growth led by change in the structure of economic activities, higher industrial exports, lower industrial imports, higher production and industrial activity and high rate of growth in population. This is better explained by the Environmental Kuznet Curve (EKC).

The Environmental Kuznets Curve (EKC) hypothesis states that pollution levels increase as the country develops, but begin to decrease as rising incomes pass beyond a turning point. This is reflected as inverted-U curve, expressing the relationship between pollution levels and income. Exhibit – 1 better explains this scenario. This hypothesis was first proposed by Grossman and Krueger in 1992, and restated by them again in 1995. As seen from exhibit – 1, there are many forces which are driving the relationship between environment degradation and economic growth. The upward movement of the curve captures the developing countries that move from agriculturally based economy to industrialization phase. In the next phase, the economy transforms into developed economy and then starts the downward movement of the curve with a shift towards services growth, increase in imports of industrial goods and stabilization of growth rates.

India is said to be in the first phase where they are experiencing the structural shifts from agriculture to industrial growth. The share of agriculture for India has considerably declined from over 80% in 1950s to around 25% by 2007. During the same period of time the levels of energy consumption and CO_2 emissions have also drastically increased in these economies, exhibiting a relationship between economic growth led by industrialization and environment degradation. Thus, we hypothesize that:

Hypothesis 1: Rapid economic growth rate with structural shift towards industrialization is leading to environment degradation.

India has also witnessed a massive increase in its manufacturing exports and decline in its manufacturing imports. This trend is evident in the Environment Kuznets Curve (EKC) in the first phase of the curve. There was a constant increase in manufacturing exports for India from 1980s onwards. This increase was on surge during the 1990s. Similarly, there was a contrasting trend observed in the manufacturing imports. The imports of this segment declined at a slow pace during the 1980s. But in the 1990s the decline was at faster pace. The increase in manufacturing exports led to extra energy consumption which goes into the production functioning of these goods, while the effects of imports of manufacturing goods is not clearly evident. This is because, if the imports are pure manufacturing goods then it is bound to act as substitute for the locally made manufacturing goods, leading to decline in energy consumption. But if the imports are manufacturing capital goods, then it complements the existing manufacturing and industrial production, leading to increase in energy consumption levels. Thus, it is hypothesize that:

Hypothesis 2: Increase in manufacturing exports and decline in manufacturing imports leads to higher consumption of energy levels causing environment dilapidation.

Previous Research Findings

The above made arguments about the relationship between the environment degradation and rapid economic growth captured in the form on Environment Kuznets Curve (EKC) highlight the number of research studies done on these domain areas in the past. There are a considerable number of studies that examine the link between energy consumption and economic growth. Following Kraft and Kraft (1978), earlier studies examined the Granger causality link between energy and income with diverse results are Akarca and Long, 1980; Yu and Hwang, 1984; Yu and Choi, 1985; Erol and Yu, 1987; Dilip M. Nachane, Ramesh M. Nadkarni and Ajit V. Karnik, 1988; Abosedra and Baghestani, 1989; Hwang and Gum, 1992 and Bentzen & Engsted, 1993. But they all suffer from omitted variables bias. It was Stern, (1993) who was the first to advocate and use a multivariate setting, a powerful time series techniques to understand the relationship. Followed by Stern, many authors have done similar studies on a large scale sample (pooled regression analysis) for a 10 years time period. They have employed following model:

$$ES = a_i + t_y + b_1 GDP_{it} + b^2 CV_{it} + e_{it} \quad \ldots\ldots (1)$$

Where, ES stands for Environmental Stress, GDP stood for Gross Domestic Product and CV for Control Variables. While, a stands for country specific effect, t = 1…..t years, i = i…..N countries and e = error term. While, some other studies have taken into consideration the following form:

$$ES = a_i + t_y + b_1 GDP_{it} + b^2 (GDP)^2_{it} + b^3 CV_{it} + e_{it} \quad \ldots\ldots (2)$$

Everything being similar, a new variable GDP square is taken into account. This variable specifies the acceleration of GDP of the country and includes all the structural changes taking place in the country. Some

of the researchers have also taken into the following model:

$$ES = a_i + t_y + b_1 GDP_{it} + b_2 (GDP)^2_{it} + b_3 (GDP)^3_{it} + b_4 CV_{it} + e_{it} \quad \ldots\ldots (3)$$

Other things being similar, GDP cube is also considered.There is no specific meaning for this variable and that is the reason why this cubed term is not always included in most of the models.To begin with,the studies conducted by Grossman and Krueger (1991),Lucas et al. (1992),Shafik and Bandyopadhyay (1992),were the first to work on the relationship between the environment degradation and economic growth. All these studies have taken into account the models specified above. The credit goes to Grossman and Krueger (1991) who were the first to articulate the concept of Environment degradation and Economic Growth which became popular by the name Environment Kuznets Curve (EKC). They applied a critical test to the hypothesis that greater openness to trade will lead to lower environmental standards in order to retain international competitiveness. This was followed by the other two similar studies specified above. In 1994, Selden and Song in their study have taken into consideration the role of trade in goods between the countries. In 1995, Grossman and Krueger come out with the findings that the pollution generated in the production of industrial goods is related to consumption in another country when it is exported.They adopt the following model:

$$ES = a_i + t_y + b_1 GDP_{it} + b_2 AGDP_{i\,(t-3)} + b_3 (GDP)^2_{it} + b_4 (GDP)^3_{it} + b_5 TV_{it} + b_6 CV_{it} + e_{it} \quad \ldots\ldots (4)$$

Other things being similar as discussed above,the study also includes AGDP, average per capita income growth lagged to the last three years and TV, Trade Variables are also taken into consideration. The role of industries is specified in the study by Low and Yeats, (1992) who show that pollution intensive industries accounts for a large share of exports from some developing countries.They also found a reversal trend for developed economies. Kolstad and Krautkraemer (1993) point out the fact that there is a dynamic link between the environment, resource use and economic activity.They argue that while resource use (especially energy sources) yield immediate economic benefits, its negative impact on the environment may be observed in the long run.

Selecting the period of 1971-1991,Tucker,(1995) looked at changes in CO_2 versus income in yearly cross-sectional analyses. The study found that the changes in CO_2 emissions are clearly related to changes in oil prices, but does not incorporate them into the analysis.The study by Jean Agras & Duane Chapman, (1998), takes into account the price of energy.This study highlights the importance of prices and then includes it in an econometric EKC framework testing energy-income and CO_2-income relationships. These long-run price-income models find that income is no longer the most relevant indicator of environmental quality or energy demand. In an another exemplary study Suri & Chapman, (1998), examined the sources of commercial energy consumption, which is the root cause of serious environmental problems. It was found in the study that while both industrializing and industrialized countries have added to their energy requirements by exporting manufactured goods, the growth has been substantially higher in the former. At the same time, industrialized countries have been able to reduce their energy requirements by importing manufactured goods.The Exports of manufactured goods by industrialized countries has thus been an important factor in generating the upward sloping portion of the EKC and imports by industrialized countries have contributed to downward slope. In a study conducted by Bernardini and Riccardo Galli, (1998) examined three fundamental factors that led to the decline in intensity of use of energy and materials for emerging Asian economies.They found that these three factors were changes in the structure of final demand, increases in the efficiency of materials and energy use and the substitution of more efficient materials and fuels. Joy O Kadnar, (2004) in his research based on the energy consumption patterns, a model to predict the future short-term fossil fuel energy needs, using the relationship between consumption, population growth and real gross domestic product (GDP) for two situations (zero or no growth and a 5% sustained economic growth), was developed for Central Asian economies and obtained mixed results. In a study conducted by Wietze Lise & Kees Van Montfort, (2006), tries to unfold the linkage between energy consumption and GDP by undertaking a cointegration analysis for Turkey with annual data over the period 1970–2003. The analysis shows that energy consumption and GDP are cointegrated. This means that there is a (possibly bi-directional) causality relationship between the two. The study organized Ugur Soytas and Ramazan Sari, (2007) investigates the long run Granger causality relationship between economic growth, CO_2

emissions and energy consumption in Turkey, controlling for gross fixed capital formation and labour. The most interesting result obtained in the study is that carbon emissions seem to Granger cause energy consumption, but the reverse is not true. The lack of a long run causal link between income and emissions may be implying that to reduce carbon emissions, Turkey does not have to forgo economic growth.

When it comes to similar studies on India there is one study worth noting by Antonio Focacci (2005), which proposes an empirical analysis concerning the environmental and energy policies in Brazil, China and India together. The study includes ratio analysis using two key ratios namely, emission intensity ratio and energy-intensity ratio to relate to EKC model. The study results show mixed results with respect to application of Environmental Kuznets Curve model for these three economies. It shows that resulting trends in these three countries are different from the other developing countries. All the research studies suggest that the ever increasing world wide CO_2 emission seems to be intensifying the problem of environment degradation resulting in global warming. This was also highlighted by the Intergovernmental Panel on Climate Change (IPCC) (2007). Since the emissions mainly result from consumption of energy, reduction in energy consumption seems to be the only way of handling this problem. But for an economy to grow, cutting the energy consumption levels seems less likely to be a possibility. This turns the focus on some of the emerging economies like India which is exhibiting a rapid economic growth rate led by industrialization to sacrifice their rapid rate of growth for betterment of environment quality. This in turn puts the spotlight to examine whether the rapid economic growth itself is the real cause of these problems in the economy? This paper is an attempt to answer these questions by investigating the relationship between the CO_2 emission and energy consumption relation on the first place and then studying the relationship between energy consumption and growth variables, especially economic growth, Industrialization and manufacturing trade. The study carries further by specifically testing the relationship between energy consumption and economic rate of growth at higher levels to find whenever these economies grow at a much higher levels of growth, does it really affect energy consumption or not. The rest of the paper is organized as follows: Section – 3 captures the energy and CO_2 emissions scenario in India. Section – 4 outlines the research variables and econometric models. Section – 5 discusses the empirical estimates and results. Finally, section – 6 concludes the paper.

Energy & CO_2 scenario in India

The Global energy consumption levels have predominantly seen the developed nations using more energy resources. The Table – 1 captures the energy usage by major energy consumers in the world. The share of high income countries is 37% followed by United States of America with 29%.

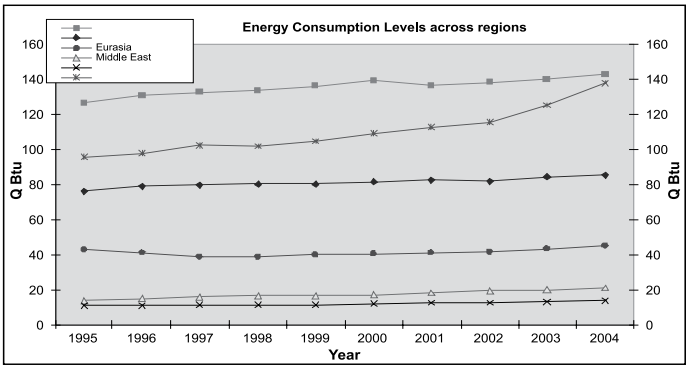
Sl. No.	Countries	Share in total energy use
01	High Income Countries	37%
02	United States of America	29%
03	China	14%
04	Russian Federation	8%
05	Japan	6%
06	India	6%

Source: calculated from the data World Development Indicators 2002 and 2005, Washington D.C.

Table 1: Global Energy Usage in 2003

The share of other major consumers include 14% by China and 8% by the Russian Federation which is world's fourth largest energy supplier followed by Japan and India with 6% share respectively. The region wise breakup of energy consumption levels is captured in the Graph – 1. During 1995 to 2004 the energy consumption levels for most of regions remained stable with marginal increase. However, in the case of Asia which is dominated by China and India there was constant increase in energy use. By the end of 2004, the energy consumption levels in Asia and Oceania region almost reach to the levels of North, Central and South American economies. This apart, Middle East and African regions also saw a small increase in their energy consumption levels for the same period.

In terms of energy consumption levels, after United States, China, Japan, India and Brazil are the next consumers. The growth rate of energy consumption for India, China and Brazil are on raise from 1970 onwards. Table – 2 captures the energy consumption levels for these economies. The growth rate of energy consumption drastically increased from 1980 to 1990 for these three economies.



Graph 1: Energy Consumption in India, China & Brazil

(Total Thousands of Metric Tonnes of Oil Equivalent)

Countries	1980	1990	2001	2003	1980 - 2003	CGR	World Ranking
China	598,498	870,441	1,139,369	1,409,377	1,004,421	3.27	02
India	241,016	363,156	531,453	553,401	422,256	4.03	04
Brazil	111,471	132,985	185,083	193,245	155,696	2.57	07

Table 2: Energy Consumption in India, China and Brazil

Source: World Development Indicators 2002 and 2005, Washington D.C.

The raise was even higher during the decade of 1990s and early 2000. The compounded growth rate during this period of time for these three economies was exuberant. For China it was 3.27% followed by Brazil with 2.57%. But the highest compounded growth rate was registered by India with 4.03%. The energy resources in India are mainly used for the purpose of generation of electricity, transportation, industrial and domestic uses. The complete energy situation in India can be gauged from the information presented in Table – 3.

Items	1960	1970	1980	1990	2000[4]	2001[4]	2002[5]	1960 to 1980	1980 to 2000
Energy consumption									
- Total(1)	1.43	4.15	6.62	11.25	16.05	16.58	16.59	7.96	4.53
- Solids(2)	1.07	3.1	4.78	7.74	9.45	9.70	9.53	7.77	3.46
- Liquids	0.29	0.77	1.31	2.37	4.43	4.59	4.83	7.83	6.28
- Gases	N.A	0.02	0.05	0.39	1.07	1.14	1.18	-	16.55
- Primary electricity(3)	0.026	0.092	0.17	0.23	0.33	0.34	0.31	9.84	3.37
Energy production									
- Total	1.2	3.74	5.61	10.09	12.57	12.74	12.66	8.02	4.11
- Solids	1.1	3.17	4.69	7.53	8.96	9.09	9.03	7.52	3.29
- Liquids	0.02	0.29	0.39	1.43	1.38	1.37	1.41	16.01	6.52
- Gases	N.A	0.02	0.05	0.39	1.13	1.14	1.18	-	16.87
- Primary electricity (3)	0.026	0.092	0.17	0.23	0.33	0.34	0.31	9.84	3.37
Net import (Import - Export)									
- Total	0.26	0.5	0.97	1.22	3.57	3.78	3.93	6.8	6.73
- Solids	-0.03	-0.01	0.01	0.15	0.41	0.55	0.51	6.57	20.4
- Liquids	0.29	0.51	0.96	1.07	3.16	3.23	3.42	6.17	6.13
- Gases	N.A	N.A	N.A	N.A	N.A	N.A	N.A	-	-

Table 3: Energy Scenario in India: Average Annual Growth Rate

Source: IAEA Energy and Economic Database

Years represent financial years from 1st April of the year to 31st March of the next year.
(1) Energy consumption = Primary energy consumption + Net import (Import - Export) of secondary energy.
(2) Solid fuels include coal, lignite and estimated commercial wood. The consumption of the wood is assumed to remain constant at 3.134 EJ (Ref.: S.K. Varma, "Coal- A Predominant Option" Proc. Power in the New Millennium Plans & Strategies, Indian Nuclear society, Aug 31- Sept 2, 1999)
(3) Primary electricity = Hydro + Nuclear + Wind
(4) Annual Reports 2001-2002 and 2002-03 of Ministries of Power, Coal, Petroleum & natural Gas, Non-conventional Energy Sources, Central Electricity Authority and Department of Atomic Energy of Government of India.
(5) Estimated from the latest results given in the Annual Reports of the year 2002-03 of various Ministries of Government of India. Electricity Figures are actual.

From 1960 to 1980 the energy consumption in India grew at 7.96%. This stood at 4.53% for 1980 to 2000 period. Similar such trend can be observed in the energy production. The energy production grew at 8.02% during 1960 to 1980, while it grew at 4.11% from 1980 to 2000. But the interesting point is the net energy imports which grew at 6.8% for 1960 to 1980 and the growth rate almost remained constant for 1980 to 2000 period. This shows that one of the important objectives of energy policy of India viz., self sustainability is not achieved.

It can also be noticed from the information provided that India consumes most of its energy in the form of solids, which include coal, lignite and commercial wood. The rate of growth of energy consumption for solids kept increasing from 1960 to 2002. However, the growth rate of liquids, which includes petroleum products like oil surged from 1990s onwards. Because of its scarce oil resources the production of liquids couldn't grow at that faster rate. The net imports show that India is a heavily dependent on liquids from rest of the world. The rate of growth of liquid imports for India peaked in 1990s.

(in Mtoe)

	1971	2002	2010	2030
Coal	44	200	218	356
Oil	36	160	181	249
Gas	0	31	39	64
Nuclear	2	8	17	26
Hydro	22	24	32	48
Biomass & Waste	110	182	126	121
Total	214	605	623	846

Source: World Energy Outlook Report - 2004, IAE (Note: Appox. Values)

Table 4: Total Primary Energy Consumption in India (1971 – 2030)

In the years to come the growth rates of coal and biomass are expected to come down while there would be an increase in dependence on usage of oil, natural gas and hydro power as a move towards lower emission targets set by the government. However, the industries in India are still largely energy intensity based and the problems of higher emission are bound to continue in the future. At the moment India is facing the problem of higher emission due to their higher energy use. In the process of meeting the higher energy demand, the energy production leads to release of toxic gases like CO_2 which leads increase in pollution levels. The Table – 5 gives the picture of levels of CO_2 emission in three emerging economies.

(in Mtoe)

Countries	1970	1980	1990	2000	2004
China	767.54	1,476.80	2,401.7	2,790.5	4,769.0
India	193.7	347.3	675.3	1070.9	1102.81
Brazil	86.26	183.41	202.61	307.52	323.32

Table – 5: CO_2 Emissions in India, China & Brazil

Economies like China, India and Brazil produce large quantities of emissions in absolute quantity of CO_2. The CO_2 emission for China rose from 767 million metric tonnes in 1970 to 4,769 million metric tonnes by 2004. Not too far behind is India which saw an increase of over 900 million metric million tonnes during the same period. Though the levels of emission for Brazil is less compared to that of India and China, it has also witnessed a rapid increase in its CO_2 from 86 million metric tonnes in 1970 to over 323 million metric tonnes by 2004. According to World Bank's data, the growth rate of CO_2 emission in China stood at 3.25% for 1980 to 2001. During the same period, India registered a growth rate of 5.80%. The emission in Brazil is slightly at a lower side. This is because of their high dependence on hydro power unlike in India and China which depend largely on coal and other forms which are harmful for the environment.

Sl. No.	Sectors	China	India	Brazil
01	Industry	75%	67%	49%
02	Transportation	9%	16%	42%
03	Residential	5%	14%	7%
04	Commercial	11%	3%	2%
05	Total	100%	100%	100%

Source: Energy Information Administration, U.S. Department of Energy, 2002.

Table – 6: Energy Related CO_2 Emissions: Major Contributors in 2003

It is estimated that the industry sector is leading to larger emissions levels in all these three countries. This is followed by transportation sector and this is quite large in the case of Brazil. This clearly shows that the increase in the industrialization is bringing in more harm to the environmental degradation at least in these three countries.

Research Variables & Econometric Models

In this section, first an attempt is made to identify the dependent variables to be adopted in the models. Then explore the possible exploratory variables that affect the dependent variables for India. Going by the objectives of the study, the paper tries to develop two different models to explain the relationship between pollution which is driven by energy consumption and energy consumption being driven by different growth variables. Based on these variables, the paper then provides empirical evidence through an econometric estimate of a model applied to India. The economic reasoning that justifies the presence of each of the explanatory variables which would be included in the equation is explained:

I. a. Dependent Variable: Environment Disturbances - Emissions

It is presumed that that the ecological problems is largely driven the by emission of some of the toxic gasses like the CO_2. Higher levels of CO_2 emissions drastically affect the environment. Thus, paper takes into account the CO_2 emission in kilo tons as the dependent variable which is contributing to the pollution and disturbing the environmental balance.

Environment Disturbances = CO_2 Emission in Kilo Tons tonnes oil equivalent

b. Independent Variables: Energy Consumption

The CO_2 emission in rapidly developing economies like India and China are largely because of the growing needs in the form of high energy consumption. Whenever there is an abnormal increase in energy consumption levels, it leads to a greater CO_2 emission. Thus, the paper takes into account energy consumption in kilo tons oil equivalent per country.

Energy Consumption = Energy Use in Kilo tonnes oil equivalent per country

The direct relationship is presumed between the energy use and CO_2 emission in developing economies. Environmental damage always hits the hardest those living in poverty. (United Nations, Human Development Report 1998 & Human Development Report, 1998).

II. a. Dependent Variables: Energy Consumption

There are severe environmental threats in most of the developing economies like India and China because of the growing needs in the form of high energy consumption. It is hypothesized in the earlier argument that as energy consumption increases it leads to more emission of some dangerous toxic gases. Thus, the paper takes into account energy consumption in kilo tons oil equivalent per country.

Energy Consumption = Energy Use in Kilo tonnes oil equivalent per country

b. Independent Variables

i. Growth of Market Size

The energy uses in the countries like India are largely due to the rapid growth rate of their economies. These higher growth rates are putting increasing pressure on energy consumption in the form of increasing needs. As emerging markets develop and expand, they release increasing quantities of toxic gasses into the atmosphere because of higher energy consumption. Increase in those emissions may eventually be raged by rising GDP, increasing the attractiveness of environmental protection as a consumable. Thus, the GDP growth rates are positively associated with the energy use especially in the emerging countries like India. Thus, growth of GDP, i.e. annual percentage change in GDP in the current year to previous year is taken into consideration.

Growth of market size = GDP/GDP per country

ii. Industrialization

It is a known fact that the production and industrial activities involve energy as an essential input. It is one of the key sources of industrialization. As emerging economies keep growing at higher rates leading to rise in income and progression of economy into the industrial stage, the energy need increases significantly due to the emergence of transportation networks, introduction of various factories and other infrastructure requirements that needs sustained sources of energy. This economic transition stage results in much higher energy consumption and subsequently the energy needs increase drastically for these economies. We consider the share of industrial output in the total GDP.

Industrialization = Share of Industrial Output in GDP per country

iii. Population

Population growth is another key indicator that is taken into consideration because of the size of population in India. As the population grows the needs also increase. The size of population coupled with rise in GDP growth and higher per capita income creates demand for various products and this leads to increase in energy consumption. Both India and China have large number of population residing in rural areas depending more on agriculture. This set of population though are not concerned with the industry, consumes energy in the form of fuel. Thus, in these rural communities though the energy consumption is low as it is usually met in the form of fuel and biomass. In order to find the impact of population on energy consumption in India, the paper considers the rate of growth of population.

Popula*tion = Rate of Growth of Population per country*

iv. Registered Vehicles

Transportation is a major contributor to energy use. This becomes even more important variable when it is about these three economies which are geographically the largest countries in the world. Locations with high levels of travel, long-distance travel, level of public transportation and the number of total vehicles in the country typically tend to have a very high-energy consumption. India is highly populated with raising incomes creating the demand for motor vehicles. Added to this, the vast public transport systems of both nations also play a key role. In the case of India, the data for number of registered vehicles was not available. But the Ministry of Roads and Highways and Government of India provides the time series data on registered vehicles per 1000 people and this variable was taken as proxy for total number of registered vehicle in each year.

Registered Vehicles = Registered vehicles per 1000 inhabitants for India

v. Manufacturing Exports

The paper also takes into account the country's advancement in international trade as an advent of its rapid economic growth and its impact on energy consumption levels. The participation in international trade was further broken into various categories only to find that the exports of manufacturing products were on rise for India. This means that the manufacturing products produced are also exported to different parts of the world, leading to much higher energy consumption in both the economies. It was found in Suri and Chapman, (1998) that the manufacturing exports are on raise for all the developing economies in

the world. It was also evident in their research that the rate of growth in this segment was even higher for the developing economies. The other interesting aspect to this argument is that the demand for these products from these economies is increasing at a faster rate and the clients being the developed economies. This is because of the availability of these products at a much cheaper rate because of the low cost resources in developing economies like India. The paper takes into account the effect of manufacturing exports as the share in total exports for India because of the lack of data availability on pure manufacturing exports as function of GDP.

Manufacturing Exports = Share of manufacturing exports in total exports for India

vi. Manufacturing Imports

The role of imports of manufactured goods has a double edge impact on energy consumption. Thus, it is important to know whether the imports of manufacturing goods are on increase or otherwise. The increase in imports of manufacturing goods lead to decline in energy consumption if those goods are used to replace the manufactured goods which are produced domestically which consume high energy levels. Thus, imports of these manufacturing goods, by replacing domestic production, would reduce the energy requirements of the country. However, there is also a contrasting argument which states that if the increase in manufacturing imports likes the capital intensive goods or machinery can lead to increase in energy consumption levels. This is because imported capital intensive goods would be used for the production, adding to the existing production levels in the country. Thus, the net effect of increase in manufacturing imports can be either positive or negative for the developing economies. In a research study by Chapman, (1998) it was found that for almost all the developing economies, the manufacturing imports are in declining trend and even for economies where there is a rise in this segment of imports, the rate of growth is very negligible. In the case of India also, the share of manufacturing imports in its total exports have been declining since from 1970s (World Development Indicators, 2006). Again the data on manufacturing imports were not available and hence the share of manufacturing imports in total imports was taken into consideration.

Manufacturing Imports = Share of manufacturing Imports in total Imports for India

III. Empirical Models

In order to assess the variables affecting CO_2 and energy consumption, two different relationships were examined using time series variables from 1970 to 2005. Firstly,

$$\mathbf{Q_t} = \alpha + \beta_1 \mathbf{Q_{(t-1)}} + \beta_2 \mathbf{Z_t} + \beta_3 \mathbf{Z_{(t-1)}} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

Qt is the dependent variable, which is CO_2 in the country and t is the current year. We log the value of CO_2 emissions making Z_t as the vector of control variables and $Z_{(t-1)}$ as the vector of control variable to one lagged. We also lag the dependent variable for one year. Thus, we set-up an autoregressive-distributed lag formulation (AD (1, 1)).

In the second equation we deal with the determinants of energy consumption, specified as follows:

$$\mathbf{Y_t} = \alpha + \beta_1 \mathbf{g_t} + \beta_2 \mathbf{X_t} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

Where, Y_t is Energy Consumption; g_t = GDP growth rate variable; X_t is vector of ontrol variables; ε_t is error term

IV. Threshold Regression Analysis

In the third step, we introduce threshold regression analysis by including three different levels of GDP growth rates to see their impact on the energy consumption levels. This would show whether the higher GDP growth rate of India has a positive relationship or otherwise with the energy consumption levels in their respective countries. The three different levels of GDP growth rates are identified as for India: above 6.5%; above 7% and above 7.5%. This is presented in the interactive form, where the dummy takes the value 1 with the GDP growth rate of the respective country crosses the three specified levels and takes 0 otherwise.

Scenario – 1:

Interactive form =	If GDP growth rate exceed:
GDP Growth rate X	16.5%, 7% & 7.5% for India

Scenario – 2:

Interactive form =	If GDP growth rate do not exceed:
GDP Growth rate X 0	6.5%, 7% & 7.5% for India

In order to ensure that the model specified is correct and is free from any other defects, the paper employs Durbin Watson test. The paper uses alternative method called Breusch-Godfrey LM test. The paper also reports correlation matrix in annexures for all models. Thus, the above models are estimated by using the Ordinary Least Squares (OLS) method. The regression is run using the statistical package – E-views, version 5.1.

Empirical Results and Estimates

The paper now turns towards the empirical results and estimates for both the equations on CO_2 emission and energy consumption for India and China. In the first phase, the paper discusses the results from CO_2 emission and energy consumption relationship for India and China. In the next phase, the paper examines the results of energy consumption and growth relationship for both the countries. Also discussed are the results from threshold regression analysis.

i. CO_2 and Energy Consumption Relationship: Panel Data Results

The results of CO_2 emission by energy consumption for India during the period 1970 to 2005 are presented in Table – 7.

Dependent Variable: Log (CO2)
Method: Pooled Least Squares
Sample (adjusted): 1971 2005
Included observations: 35 after adjusting endpoints

Variables	Coefficient	Std. Error	t-Statistic	Probability
C	0.028997	0.009875	2.936475	0.0041*
Log (Energy Consumption)	1.262905	0.129346	9.763775	0.0000*
Log (Energy Consumption(-1))	-1.166560	0.131158	-8.894308	0.0000*
Log (CO2(-1))	0.924468	0.024221	38.16776	0.0000*
R-squared	0.980081	Mean dependent var		1.827981
Adjusted R-squared	0.980053	S.D. dependent var		1.067789
S.E. of regression	0.032854	Sum squared resid		0.109017
Log likelihood	211.6974	F-statistic		36585.56
Durbin-Watson stat	1.975172	Prob (F-statistic)		0.000000

Note: * Significant at 1% confidence level

Table 7: Results of CO_2 emission by Energy Consumption

It is evident from the result that on an average one unit of energy consumption is leading to an increase in CO_2 emission by 126% for the said time period. The coefficient of energy consumption gives the CO_2 emission elasticity. The energy consumption is statistically significant at 1% confidence level. The R square value of 0.99 means 99% of variation in the logs of CO_2 emission which is explained by the logs of energy consumption during 1970 to 2005 period and the adjusted R square value also stand at 99%. The presence of serial correlation problem is nullified by the Durbin Watson test value which is 1.97. Overall goodness of the fit is highly significant.

ii. Energy Consumption and Growth Relationship

This section presents the results of regression estimates in measuring the influence of growth variables on energy consumption for India. The Table – 8 is the standard model which captures the regression estimates for energy consumption and growth equation for India. The descriptive statistics are mentioned in Annexure – 1 at the end of the paper. In the next step, for the equation on energy consumption and growth, there are three different models capturing the impact of higher GDP growth on energy consumption at three different growth rate levels for India. These models are captured in Tables – 9A, 9B, and 9C. The Table – 9A presents the inclusion of GDP growth rate at above 6.5% level and also includes all other variables in the model. The Table – 9B captures the second model with has GDP growth rate variable which is above 7% level to see the influence on energy consumption, while the Table 9C includes the model in which GDP growth rate of above 7.5% is taken into consideration. This apart, the study also tests for presence of serial correlation problem by employing in the first phase the Durbin Watson test and then Breusch-Godfrey's LM test in the standard models. Also the paper makes an attempt to detect the presence of multi collinearity problem for both the standard models of the equations by computing Variance Inflation Factor (VIF) values and Tolerance limit values.

Energy Consumption and Growth Equation for India: Standard Model

The results show standard model of the relationship between Energy consumption and growth. As expected all the growth variables exert a positive correlation with energy consumption.

Dependent Variable: Energy Consumption Method: Least Squares Sample: 1970 - 2005 Included observations: 36				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Variables	Coefficient	Std. Error	t-Statistic	Probability
Constant	-1.060612	0.373091	-2.842767	0.0081*
GDP Growth	0.011958	0.008228	1.453250	0.1569+
Industrial Growth	0.083715	0.013985	5.986116	0.0000*
Registered Vehicles	0.054047	0.002815	19.19851	0.0000*
Population	0.200504	0.110945	1.807236	0.0811***
Manufacturing Exports	0.013611	0.005046	2.697244	0.0115**
Manufacturing Imports	-0.002964	0.003696	-0.801814	0.4292
R-squared	0.991594	Mean dependent var		3.488056
Adjusted R-squared	0.989854	S.D. dependent var		1.289936
S.E. of regression	0.129930	Akaike info criterion		-1.070982
Sum squared resid	0.489569	Schwarz criterion		-0.763076
Log likelihood	26.27768	F-statistic		570.1260
Durbin-Watson stat	1.645117	Prob(F-statistic)		0.000000
Testing for presence: of Serial Correlation	**Breusch-Godfrey Serial Correlation LM Test**			
F-statistic	0.648520	Probability		0.427429
Obs*R-squared	0.814936	Probability		0.366665

Note: * Significant at 1% confidence level; ** Significant at 5% confidence level
*** Significant at 10% confidence level; + Significant at 15% confidence level

Table – 8: Standard Model for Energy Consumption & Growth for India

The interesting point to be noted is the significance of Manufacturing exports, industrial growth and registered vehicles variables on energy consumption, which is stronger than that of the GDP growth. The 1% increase in manufacturing exports lead to corresponding increase in energy consumption levels by 1.36% and is statistically significant at 5% confidence level. This proves the point that the manufacturing exports are indeed contributing to a great level of pollution by consuming more energy. This is well explained by the fact that manufacturing exports for India have been growing since the early 1980s. A similar contrasting trend can be observed in the case of manufacturing imports. The manufacturing imports exhibit a downward trend since 1980s as a result the manufacturing imports have negative correlation with the energy consumption and are not statistically significant either. The share of industry sector in GDP exerts a positive relationship with energy consumption. Infact, the increase in 1% growth in share of industry of GDP is leading to a growth of 8.37% for energy consumption and is statistically significant at 1% confidence level. Ever since India attained independence in 1947, its dependence was more on agriculture sector. But over the years the dependence of agriculture sector has reduced and the share of industry has been on raise along with the service sector. The share of industry in GDP was under 10% during the 1950s has increased rapidly to around 30% by 2007. The number of registered vehicles proxied by the number of vehicles available per 1000 inhabitants in the country is making a positive impact on energy consumption levels and is statistically significant at 1% confidence level. The impact of this variable per 1% increase on energy consumption is 5.40%, which is next to industry share variable. During the 1970, according to the government of India data, the number of vehicles available per 1000 inhabitants was only 3 and this gradually increased to 66 by 2006. The increase in the number was rapid from the 1980s onwards. The highest impact on energy consumption variable is made by the rate of growth of population in India. The population in India is considered to be world's second largest and is expected to take over China by 2020. Though efforts are made by the government agencies, volunteer organization and other funding groups to ensure the reduction in growth rate of population; its growth rate is still amongst the highest in the world by any standards. The population in India is growing at a rate of over 1.25% per annum. A 1% increase in population in India is leading to a 20% growth in energy consumption levels. This is statistically significant at 10% confidence level. When it comes to the general rate of growth of GDP, an increase of 1% in this variable is leading to an increase in 1.12% growth in energy consumption levels. This is statistically significant at 15% confidence level. One reason which can be attributed for this can be the fluctuating trend which the GDP growth rate has exhibited during the decade of 1970 to 1980. The period of 1980 to 1990 saw a very low rate of growth in GDP for India. The rate of growth though increased slightly during the 1990 to 2000 period, the increase was marginal compared to the previous decade. But the real change was about to come in the early 2000s where the GDP surged by over 7.5% mark consistently for the next seven years. High GDP growth rate which is a result of rapid

industrialization, increasing demand for goods and vehicles, coupled with a very high rate of growth in manufacturing exports and population are having a drastic impact on the energy consumption levels in the country. The R square value of 0.99 means 99% of variation in energy consumption for India which is explained by growth variables during 1970 to 2005 period and the adjusted R square value stand at 98%, which indicates that the overall goodness of the fit is highly significant. The Breusch-Godfrey Serial Correlation LM Test stated below the equation results show that the model does not suffer with serial correlation problem. The correlation matrix is presented in Annexure – 2.

Energy Consumption & Growth Equation for India: Threshold Regression:

The Table – 9A, 9B, and 9C presents the estimation of the three equations in which the dummy variable GDPD is introduced in the interactive form (Dummy multiplied by GDP) to check that at which higher GDP growth rate levels the effect on energy consumption is recognized even stronger.

Dependent Variable: Energy Consumption Method: Least Squares Sample: 1970 - 2005 Included observations: 36				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Constant	-1.153812	0.373161	-3.091997	0.0044*
GDP Growth > 6.5% (GDPD)	0.011104	0.006482	1.712981	0.0974***
Industrial Growth	0.084196	0.013686	6.152087	0.0000*
Registered Vehicles	0.054201	0.002781	19.48839	0.0000*
Population	0.239157	0.115534	2.070012	0.0475**
Manufacturing Exports	0.014117	0.004979	2.835280	0.0083*
Manufacturing Imports	-0.002946	0.003648	-0.807704	0.4258
R-squared	0.991810	Mean dependent var		3.488056
Adjusted R-squared	0.990116	S.D. dependent var		1.289936
S.E. of regression	0.128246	Akaike info criterion		-1.097071
Sum squared resid	0.476962	Schwarz criterion		-0.789165
Log likelihood	26.74728	F-statistic		585.3237
Durbin-Watson stat	1.660455	Prob(F-statistic)		0.000000
Testing for the presence of Serial Correlation:	**Breusch-Godfrey Serial Correlation LM Test**			
F-statistic	0.644936	Probability		0.428694
Obs*R-squared	0.810534	Probability		0.367962

Note: * Significant at 1% confidence level; ** Significant at 5% confidence level; *** Significant at 10% confidence level

Table – 9: Threshold Regression Analysis for India at GDP growth > 6.5%

This model shown above has GDP dummy variable identified as 1 whenever the GDP growth rate for India from 1970 to 2005 exceeds 6.5% level and 0 otherwise. It is to be noted that whenever the GDP growth rate of India has crossed 6.5% level, it has exerted a positive relationship with energy consumption. If the GDP growth rate above 6.5% is increased by 1% it leads to an increase in energy consumption level by 1.11%. This is statistically significant at 10% confidence level. This only suggests that the positive effects on energy consumption whenever the GDP growth rate for India crosses above 6.5%. Among the other variables, viz., industry share in GDP and registered vehicles associate a positive relationship with energy consumption level and both are statistically significant at 1% confidence level. The population growth variable is also having a positive association with energy consumption and is statistically significant at 5% confidence level. The manufacturing trade variables, manufacturing exports and imports have a contrasting relationship with energy consumption. The former has a positive statistically significant relationship at 1% confidence level while the later exert a negative relationship and has no statistical significance.

Dependent Variable: Energy Consumption Method: Least Squares Sample: 1970 - 2005 Included observations: 36				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Constant	-1.201002	0.369856	-3.247217	0.0029*
GDP Growth > 7% (GDPD)	0.013129	0.006548	2.004945	0.0544**
Industrial Growth	0.083467	0.013473	6.194975	0.0000*
Registered Vehicles	0.054512	0.002745	19.85975	0.0000*
Population	0.266538	0.116904	2.279975	0.0301**
Manufacturing Exports	0.014082	0.004896	2.876399	0.0075*
Manufacturing Imports	-0.002843	0.003587	-0.792652	0.4344
R-squared	0.992079	Mean dependent var		3.488056
Adjusted R-squared	0.990441	S.D. dependent var		1.289936
S.E. of regression	0.126120	Akaike info criterion		-1.130498
Sum squared resid	0.461282	Schwarz criterion		-0.822592
Log likelihood	27.34896	F-statistic		605.3841
Durbin-Watson stat	1.603362	Prob(F-statistic)		0.000000
Testing for presence of Serial Correlation	**Breusch-Godfrey Serial Correlation LM Test**			
F-statistic	0.938341	Probability		0.340998
Obs*R-squared	1.167319	Probability		0.279953

Note: * Significant at 1% confidence level; ** Significant at 5% confidence level

Table – 9B: Threshold Regression Analysis for India at GDP growth > 7%

This model shown above has GDP dummy variable identified as 1 whenever the GDP growth rate for India from 1970 to 2005 exceeds 7% level and 0 otherwise. It is to be noted that whenever the GDP growth rate of India has crossed 7% level, it has exerted a positive relationship with energy consumption. If the GDP growth rate above 7% is increased by 1%, it leads to an increase in energy consumption level by 1.13%. This is statistically significant at 10% confidence level. This only suggests that the positive effects on energy consumption whenever the GDP growth rate for India crosses above 7%. One interesting point which is worth noting here is that the when GDP growth rate is increased above 7% level compared to previous 6.5%, the increase in energy consumption levels has gone up by 0.02%. This suggests that whenever the growth rate of GDP is increasing, the energy consumption levels are also exerting a marginal increase. Among the other variables, viz., industry share in GDP and registered vehicles associate a positive relationship with energy consumption level and both are statistically significant at 1% confidence level. The population growth variable is also having a positive association with energy consumption and is statistically significant at 5% confidence level. The manufacturing trade variables, manufacturing exports and imports have a contrasting relationship with energy consumption. The former has a positive statistically significant relationship at 1% confidence level while the later exert a negative relationship and has no statistical significance.

Dependent Variable: Energy Consumption Method: Least Squares Sample: 1970 - 2005 Included observations: 36				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Constant	-1.112079	0.353169	-3.148860	0.0038*
GDP Growth > 7.5% (GDPD)	0.017395	0.007167	2.427264	0.0217**
Industrial Growth	0.080005	0.013329	6.002140	0.0000*
Registered Vehicles	0.054073	0.002658	20.34127	0.0000*
Population	0.283406	0.113389	2.499419	0.0183**
Manufacturing Exports	0.015104	0.004788	3.154470	0.0037*
Manufacturing Imports	-0.004662	0.003567	-1.306995	0.2015
R-squared	0.992504	Mean dependent var		3.488056
Adjusted R-squared	0.990953	S.D. dependent var		1.289936
S.E. of regression	0.122691	Akaike info criterion		-1.185637
Sum squared resid	0.436536	Schwarz criterion		-0.877730
Log likelihood	28.34146	F-statistic		639.9757
Durbin-Watson stat	1.663070	Prob(F-statistic)		0.000000
Testing for presence of Serial Correlation:	**Breusch-Godfrey Serial Correlation LM Test**			
F-statistic	0.580004	Probability		0.452678
Obs*R-squared	0.730586	Probability		0.392693

Note: * Significant at 1% confidence level; ** Significant at 5% confidence level

Table – 9C: Threshold Regression Analysis for India at GDP growth > 7.5%

In this model the GDP dummy variable is identified as 1 whenever the GDP growth rate for India from 1970 to 2005 exceeds 7.5% level and 0 otherwise. When the GDP growth rate of India has crossed 7.5% level, it has also exerted a positive relationship with energy consumption. If the GDP growth rate above 7.5% is increased by 1%, it leads to an increase in energy consumption level by 1.17%. This time it is statistically significant at 5% confidence level. This once again proves that there is a strong positive effect on energy consumption whenever the GDP growth rate for India crosses above 7.5%. The two interesting point are highlighted here are that the when GDP growth rate is increased above 7.5% level compared to previous 7% and 6.5%, the increase in energy consumption levels has gone up by 0.06%. This suggests that more the increase in GDP growth rate, higher the energy consumption levels. The other point which attracts the attention is that the statistical significance of this variable. As GDP growth rate kept increasing its statistical significant improved from 10% to 1% confidence level suggesting that the findings are robust. The other variables in the model exert a similar relationship with energy consumption as analyzed in the previous models. The R square and the adjusted R square values for all the models specified discussed above are high. The Breusch-Godfrey Serial Correlation LM Test results show that no models suffer with serial correlation problem.

Common Trends

There are some common findings which emerge from this study on India with respect to the relationship between growth variables and energy consumption, which has a direct association with CO2 emissions. The GDP growth rates and higher levels of GDP growth rates are having direct positive relationship with energy consumption level.

GDP Growth rates	Coefficient	Change	Cumulative Change	T-stat	Probability
GDP Growth rate (1970-2005)	1.11%	-	-	1.45	Sig. @ 15%
GDP Growth > 6.5%	1.11%	0.00%	0.00%	1.72	Sig. @ 10%
GDP Growth > 7%	1.13%	+0.02%	0.02%	2.00	Sig. @ 10%
GDP Growth > 7.5%	1.17%	+0.04%	0.06%	2.43	Sig. @ 5%

Table – 10: Effects of higher GDP Growth Rates on Energy Consumption for India

As the growth rates of GDP for India are graduating to higher levels, it is leading to a marginal increase

in energy consumption levels. Of late this growth is largely driven by industrialization process and services sector. The slow growth of industrialization in India is also leading to large scale industrial products exports which again exert a positive relation with levels of energy consumption. India, due to their massive size and economic activities and population, the number of registered vehicles is at increase. This undoubtedly needs massive energy consumption.

Concluding Remarks

While the existing empirical works till date have focused on the effects of economic growth and trade on environmental degradation. This work contributed a new approach to the study of environment quality and growth by examining for India to show that the higher levels of growth led by industrialization process is leading to imbalances in environment. This paper examines the effects of energy consumption on CO_2 emission leading to environment degradation in India. Also examined is the role played by the rapid economic growth led by industrialization on the levels of energy consumption. The study then extends in a different approach to see at what higher levels of economic growth do the energy consumption is getting affected. The results suggest that indeed growth of energy consumption is having an impact on the CO_2 emissions in India. The high levels of energy consumption are driven by rapid economic growth, industrialization, international trade in industrial goods, along with rate of growth of registered vehicles. This suggests that too much of economic growth is too bad for environmental quality. However, the cut in energy consumption levels is not possible because of its negative effect on growth. But surely, the fast emerging economies like India which are very highly dependent in energy usage and are the largest energy consumers can look forward to cut down the rate at which they are growing, which can lead to restoration in environment imbalances in the years to come. There is scope to carry forward this research further by looking at the aspects of long run relationship and direction of causality between energy consumption, economic growth and industrialization in India. This would ensure more robust results and much more meaningful analysis which could be helpful for the policy makers in both these countries to frame an inclusive environment quality led growth policies in the years to come.

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Annexures

Variables	Mean	Median	Maximum value	Minimum value	Standard Deviation	Total observations
Energy Consumption	3.48	3.29	5.80	1.78	1.29	36
GDP growth rate	5.00	5.50	10.00	-5.00	3.02	36
Industry Share in GDP	25.36	26.00	28.00	20.00	2.26	36
Registered Motar Vehicles per 1000 inhabitants	23.14	17.23	64.66	2.80	19.51	36
Population	1.92	2.00	2.00	1.00	0.28	36
Manufacturing Imports	64.81	68.00	79.00	45.00	10.46	36
Manufacturing Exports	51.06	51.00	67.00	38.00	6.36	36
GDP growth rate > 6.5%	2.65	0.00	10.00	0.00	3.85	36
GDP growth rate > 7%	2.47	0.00	10.00	0.00	3.82	36
GDP growth rate > 7.5%	2.06	0.00	10.00	0.00	3.65	36

Annexure – 1: Descriptive Statistics for India

Items	Energy Consumption	GDP growth rate	Industry Share in GDP	Registered Motar Vehicles	Population	Manufacturing Exports	Manufacturing Imports
Energy Consumption	1.00						
GDP growth rate	0.40	1.00					
Industry Share in GDP	0.71	0.36	1.00				
Registered Motar Vehicles	0.69	0.37	0.60	1.00			
Population	-0.52	-0.37	-0.22	-0.59	1.00		
Manufacturing Exports	0.70	0.34	0.70	0.66	-0.34	1.00	
Manufacturing Imports	0.26	0.14	0.18	0.27	-0.21	0.32	1.00

Annexure – 2: Correlation Matrix for India

Variables	Exact Data Base Sources
CO2 Emission	http://ddp-ext.worldbank.org/WDI
GDP Growth Rates	http://ddp-ext.worldbank.org/WDI
Share of Industry in GDP	http://ddp-ext.worldbank.org/WDI
Manufacturing Exports	http://ddp-ext.worldbank.org/WDI
Manufacturing Imports	http://ddp-ext.worldbank.org/WDI
Registered Vehicles	http://mospi.nic.in/mospi_cso_rept_pubn.htm (India)
Population	http://ddp-ext.worldbank.org/WDI

Annexure – 3: Data sources of the variables

> Put Some Sacrifice in a bowl of kindness, add a little of sympathy and mix it with empathy. Please remember to remove all the envy from it, sprinkle a dash of your sweetness as per taste and little of sentiment, then cook it over the warmth of heart, Garnish it with your love and smile. And serve it to the one who needs it.
>
> **Recipe for happiness**

Life Insurance Sector in the Liberalised Environment – The Paradigm Shift and Player Performance

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The insurance industry in India has witnessed a number of changes as a result of the opening up of the sector to private players. This paper explores the changing dimensions in the sector since liberalization as *first part* of the study. The industry has observed a paradigm shift from traditional products to market linked products, agent selling to e-marketing , rural and social orientation etc. The *second part* of the study focus on evaluating the financial performance of the players with the financial ratios and operating parameters and simple statistical tools. Life Insurance Corporation managed to withstand the competition and proved its domination over the private players in the form of operational and financial efficiencies.

Keywords: **Insurance Business, Prima Product Innovation, Acturial Efficiency**

Introduction

Insurance today has moved to the center stage of world economy. The growth of insurance world wide and its influence on the Government action provides a clear indication of the relevance and importance of this sector in the Indian economy.

Insurance plays an important role in the development of the economy of any country. It has the dual role of influencing the economy and stimulating growth. It inculcates the habit of saving among the public and private funds for investing in various schemes as per the provisions of the Insurance Act. 1938 (Amended to date) and

Facilitates the Government to utilize the investment for the development of the economy. (Rajesham Ch and Rajender K, 2006)

The reforms initiated in the year 1999 in the insurance sector, have brought major changes in the innovation of product development, services, new channels of distribution, greater use of I.T as a facilitator. Shift in the consumer preferences towards the product mix is a noticeable phenomenon. (Chandra Sekhar K.S and Reshmi Augustine, 2006)

Since the opening up of the insurance sector, it has completed seven years of providing products and services to the insured fraternity with 21 life (20 private and 1 public) and 20 (14 private and 6 public) and 1 reinsurance companies.

With huge population in the world after china with increasing life expectancy around 63.2 per cent (Economic Survey, 2007-08), Indian insurance industry accounted for 4.1(Retrieved per cent of GDP in 2006- 07.

Reports from Associated Chambers of Commerce and Industry of India (ASSOCHAM) projects 500% increase in the size of the current insurance business from US $ 10 billion to US $ 60 billion by 2010 (ASSOCHAM) has also revealed that rural and Semi Urban India shall contribute US $ 35 billion to the Indian Insurance Industry by 2010; that includes US $ 20 billion from life insurance segment and the rest of US $ 15 billion from non-life segment. This is an opportunity and also a challenge for insurer to cover the huge market with vivid marketing strategies, technology - enabled practices, rigorous advertisement campaigns for customer awareness and education.

Statement of the Problem

Since seven years of liberalization of insurance sector,

it is worthwhile to note that the industry has observed notable changes in the form of competition, products, services and supply chain etc. An attempt has been made to analyze the impact of reforms on the insurers in financial perspectives. One important aspect that we need to keep in mind is that industry is characterized by high gestation periods, slow growth and also greater human resource intensity.

Objectives of the Study

The main objectives of the study are:

- to review the changing scenario and analyze the trends and dimensions of life insurance sector in India.
- to present the financial appraisal of life insurance companies in post- liberalization scenario.

Period of Study

The study covers a period of five years from 2002-03 to 2006-07. Depending upon the data availability and the purpose of the study, the period is extended to cover more number of years.

Database and Methodology

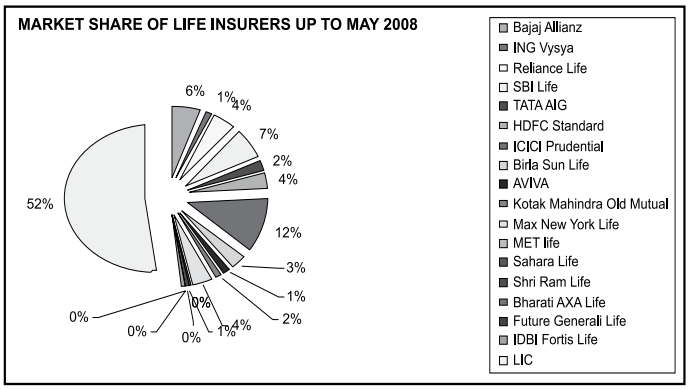
The sources of data for the study include basically secondary data. The secondary data sources include the Journals, reports, web sites, magazines, newspapers, etc.

For the purpose of the analysis and to facilitate interpretation, simple statistical tools like percentages, averages are used.

Paradigm Shift in Life Insurance Sector in the Liberalised Era

- **Growth in penetration and Premia**: The contours of insurance business have been changing across the globe and the rippling effects of the same can be observed in the Indian markets as well. At the same time, the concomitant increase in per capita income, followed by strengthening of growth of Indian economy lead to recording a premium income of Rs 156041.59 crore during 2006-07 as against Rs 34, 898.48 Crore registering a simple growth rate of 347.13% (Rao, C.S., IRDA Annual Report, 2006-07a). Despite opening up at approximately at the same time in the late nineties, Indian markets respond to the changes quickly which resulted in 4 percent penetration when compared to 2.7 percent penetration in China as can be visualized from Table – 1.

- **Intensified Competition**: Entry of corporate giants in association with foreign players in the Indian Insurance life Industry posed a challenge to LIC, the public sector giant, in the task of retaining its monopoly. To survive in the buoyant industry, each player should analyze the emerging requirements of the policy holders and should be in the forefront in providing essential services and introduce innovative products, with competitive advantages. It is envisaged from the Table – 2 that the competition in the market diluted down the market share of LIC from 99.46 per cent (2001-02) to 81.92 per cent (2006-07) (Rao, C.S., IRDA Annual Report, 2006-07b) whereas private insurers have improved their market share from 0.54 per cent (2001-02) to 18.8 per cent (2006-07). Despite this the LIC stands dominant.



Graph 1 Source: Table -2

- **CRM - The new paradigm:** According to Anil Tikkoo, Head, ICICI Prudential Life, Life insurance companies with huge customer database, servicing their customers through numerous branches and call centers will invest between 15-20 percent of their total IT budget on CRM applications (Aktar Pasha, 2004). This paved the way for growing opportunities for the software service providers like CMC, Infosys technologies, etc.

- **Product Innovation:** Undoubtedly the biggest beneficiary of the competition amongst life insurance players is the customer. A wide range of products, customer focused service and professional advices have become the main focus of the industry. Life insurance companies have developed a wide range of customized products with differentiated and innovative features along with an inclusive bag of micro insurance products for the benefit of the segment below poverty line. Recent advancements in the product development could be cited with an example as Reliance Life offer for the insurance

cover with SIP scheme for Rs 2000 per month. The number of products offered has drastically increased in the recent past to over 560 as compared to 55 (Jean Pierre Lepaud, April 2008), in 2000.

- **Changing Logistics:** While the traditional channel of tied-up advisors or individual agents are the chief distributional channel, corporate agents (Banks & other NBFCs), brokers, bancassurance, e-insurance, cooperative societies, panchayats, direct sales through call centers, MFIs, NGOs for micro insurance, insurance coverage through CAT Card holders of APSRTC in Andhra Pradesh are the new distribution networks of reaching the insured. Individual agents (88.27 %), Corporate agents(8.42%), Brokers(0.54%), referrals (2.04%), and direct selling(0.38%) contributed for the total business during the year 2006-07(Rao, C.S., IRDA Annual Report, 2006-07c).
- **Explosion of Employment Opportunities:** Opening of the insurance sector for FDIs has led to renaissance in the Indian economy. The insurers have been recruiting agency force on a continuous basis. By the end of March, 2007, there were 19, 93, 199 individual agents consisting of 44. 65 percent in private sector and the rest in public sector, and over 4700 corporate agents. In view of the greater potentiality in the industry, there is a large scope for expansion of existing players and the entry for new players. Clearly, the scope for growing job opportunities is enormous.
- **Diversified investments of players:** Since the investments pertaining to Unit Linked business started from 2003-04, the share of investments in Unit Linked business had raised steeply from 0.49 per cent in 2003-04 to 11.09 percent (Rao, C.S., IRDA Annual Report, 2006-07d) in 2006-07. Investment pattern by Life insurance companies has broadened since the formulation of a new set of IRDA guidelines (years 2000 and 2004). Apart from Government Securities and other approved securities, infrastructure, equity, bank deposits, investments subject to exposure norms, the insurer could also invest in financial derivatives, mutual funds, international investment subject to certain conditions (D. Ravishankar, 2004). Insurers such as ICICI Prudential, Max New York Life, HDFC Life, and Reliance Life could invest their surplus monies in Venture capital firms.
- **Insurance Education and Research:** Post-liberalization scenario has brought a paradigm shift in the areas of insurance education and research. In addition to traditional courses like risk management, insurance regulations, particularly, in life and non-life segments, institutes and Biz schools are offering insurance courses in tune with the demand and expectations of an evolving horizons in the areas of health insurance, Unit linked insurance, micro insurance, cyber insurance, terrorism insurance, etc. The challenges like terrorism, environmental catastrophes provide opportunities for the researchers in developing the new models. Prior to liberalization, Insurance remains a neglected area and there is a need for a concrete and concerned effort to develop and define areas of focus for research in tune with the requirement of the industry (Shri T.K. Banerjee,2004).
- **Customer Centricity:** As regards of customer services, the competition amongst the different companies has shown healthy trends. Steps are implemented to be in constant touch and receive the feed back from the customers during the life cycle of the policy. It includes instruments such as SMS, tele-calling, mailing reminders letters on his policy lapse as well as e-mail communication. Information technology has been resorted to as a powerful instrument to improve quality of customer service. The payment of premium has also been streamlined giving the option to the customer for direct debit from the bank account, credit card payment, payment through drop boxes and on-line payment using the bill junction payment service.
- **Rural and Social Orientation:** To safeguard the interest of rural and social sector (unorganized), IRDA issued obligations to the insurers to be fulfilled, during the first five financial years. Every life insurer must commence at least 5 per cent in first year, 7 per cent in second year, 10 per cent in third year, 12 per cent in fourth year, 15 per cent in fifth respectively in the rural sector. In the case of Social sector, life insurers must cover 5000 lives in first year, 7500 lives in second year, 10000 lives in third year, 15000 lives in fourth year, and 20000 lives in fifth year respectively. As per the reports of IRDA a very few life insurers only could not meet the obligations since the commencement of their business only in the recent past.
- **Insurance and SHGs:** Nearly 30 lakhs Women Self Help Groups have been operating with credit linkage

to banks in the country. So far, 35,000 SHGs have been covered under LIC's Jana Shree Bima Yojana that offers life and permanent disability cover. The initiative of Government of India to contribute Rs 500 Crore to the corpus fund of this scheme to scale up the business is heartening situation. Rashtriya Swasthya Bima Yojana is another initiative to provide life and health cover (Union Budget 2008-09).

- **Institution of Ombudsman:** The institution of Insurance Ombudsman has great importance and relevance of interest of policy holders and also to build up confidence in the system. The role and importance of ombudsman is judged on the basis of the number of grievances resolved. During the year 2006-07, 5418(89.99%) grievances were resolved out of 6021. The disposal rates of complaints against LIC and private life insurers were 90.98 percent and 85.20 per cent respectively. (Rao, C.S., IRDA Annual Report, 2006-07e)

Performance Scenario

The performance scenario of the sector in terms of the financial parameters, efficiency indicators is analysed through select ratios. The comparative operational efficiency, Return on Investment and marketing efficiency of the players have been presented.

Operating Expenses Ratio

Table – 3 indicates the operating expenses ratio of the select life insurers during 2001-02 to 2006-07. In 2001-02, the mean value of the operating expenses ratio was 6.944 which come down to 1.5709. It was nearly a four-fold decrease over the period of study. It implies that the operating expenses spent by the insurers were declining. The declining operating expenses of insurers influence the profitability of insurer. The higher level of the operating expenses ratio envisages the lower efficiency of the insurer.

In the year 2001-2002, out of the seven life insurance players' only one i.e. LIC (0.0855) have recorded a very low ratio followed by ICICI Life (0.729) and SBI Life (0.767). Reliance life (40.107) recorded a higher operating expenses ratio. A significant difference in the operating expenses ratio between LIC, ICICI Life, SBI Life and other life insurers can be attributed to the reason that, LIC, ICICI, SBI Life have already been operating for more than two decades with their established infrastructure in banking arena with economies of scale.

In the year 2006-07, LIC (0.055) recorded low operating expenses ratio followed by SBI Life (0.108), ICICI Life (0.192), Bajaj Allianz Life (0.202),, MNYL (0.342), Reliance Life (0.47). LIC, HDFC Life, SBI Life have recorded their operating expenses ratios, below the sectoral average. The remaining life insurers recorded above the sectoral average of the ratio which envisages the lower efficiency in attaining the economies of scale.

The average operating expenses ratio was 1.5709 during the period under study. Out of the seven life insurers, operating expenses ratio is maximum for Reliance Life (8.1242) which is above the sectoral ratio (1.5709). The other life insurers recorded below the sectoral ratio in the descending order of Bajaj Allianz (0.947), MNYL (0.7492), HDFC Life (0.4695), ICICI Life (0.3299), SBI Life (0.3055), and LIC (0.0763). The coefficient of variance of Reliance Life (194.15) is high which shows the inconsistent performance in the selected period.

Commission Expenses Ratio

Table – 4 reveals the commission expenses ratio of the select players during the period 2001-02 to 2006-07. In the year 2001-02, the commission expenses ratio was 0.1867 and it dropped down to 0.1013 registering nearly 45.7% decline over the period under review. It implies that the commission expenses ratio during the period was declining. The declining trend of the commission expenses ratio shows a positive impact over the profitability of the insurers. The lower commission expenses ratio indicates the higher efficiency of the insurer in conducting business.

In the year 2001-02, Bajaj Allianz (0.329) and MNYL (0.304) recorded high commission expenses followed by Reliance Life (0.25), HDFC Life (0.197), ICICI Life (0.124), SBI Life (0.0129) and LIC (0.0906). The commission expenses ratio of public sector insurer (LIC) is low when compared with the other private insurers. The strong market base for over five decades, the customer loyalty and confidence and also the conservatism in operations and marketing strategies are the probable reasons.

In the year 2006-07, ICICI Life (0.066) recorded low commission expenses ratio followed by SBI Life

(0.0692), LIC (0.0717), HDFC Life (0.0735), Reliance Life (0.0983), MNYL (0.1523) and Bajaj Allianz (0.178). LIC, ICICI life, HDFC Life, Reliance Life, SBI Life have recorded their low commission expenses ratio below the average sectoral ratio. This is a trend positive in the direction of improving operational efficiency.

The average commission expenses ratio of the sector was 0.1469. Out of the seven selected insurers, the highest ratio was witnessed by Reliance Life (0.1533) preceded by Bajaj Allianz (0.1948) and MNYL (0.3549). The other four life insurers have recorded commission expenses ratio below the average ratio of the sector. The coefficient of variance of the MNYL life (111.98) is very high which indicates the inconsistent performance of the insurers.

Return on Assets Ratio

Table -5 presents the details of the Return On Assets ratio (ROA) of the select life insurers during 2001-02 to 2006-07. In the initial period, the Return on Assets Ratio was (-0.06612) and came down to -0.0902. Out of the seven insurers, all excepting LIC have recorded a negative ROA during the period of the study. The dwindling ROA of all the private players is due to losses incurred during the period under reference.

In the year 2001-02, out of seven insurers, Reliance Life (0.0175), MNYL (0.0593) and LIC (0.00344) record a positive ROA. Among the other three, ICICI Life (-0.312) noticed the highest negative value followed by HDFC Life (-0.127), Bajaj Allianz (-0.102) and SBI Life (-0.00208). The industry ROA also noticed negative value of -0.06612. Only four life insurers LIC (0.00344), MNYL (0.0593), Reliance Life (0.0175), SBI life (-0.00208) have recorded above the sectoral average ROA. The poor performance of ICICI Life, HDFC Life and Bajaj Allianz is reflected in below the industry' ROA.

In the year 2006-07, only two life insurers, LIC (0.0012), SBI Life (0.0008) recorded positive Return on Assets. Bajaj Allianz (-0.011) recorded high negative ROA followed by its counterparts such as MNYL (-0.02), HDFC Life (-0.023), ICICI Life (-0.004) and Reliance Life (-0.183). The sectoral average ROA ratio is negative value at -0.04. Except Reliance Life (-0.183), all the life insurance players recorded a high ROA above the mean value of the industry which indicates the better performance.

The average ROA of the sector was -0.0902. Only two insurers, Bajaj Allianz (-0.0605) and SBI Life (-0.0304) indicate more average ROA than the average ROA ratio of the sector. Even though, LIC recorded a positive Average ROA, it was very low, implying that the net profit from total assets is very low. MNYL's average ROA of 0.096 is nearly equal but high Coefficient of Variance (-195.408) indicates the inconsistent performance of the insurer.

Return on Equity

Return On Equity (ROE) of the life insurance companies can be seen from the Table - 6. The average ROE of life insurers at the beginning of the period of study was 0.9343 which declined to 0.22 by 2006-07.

It could be observed from the table that the average ROE in the year 2001-02 was 0.9343. Only LIC (7.28021) witnessed more than the average ROE. Among the players only MNYL (0.045), Reliance Life (0.062) obtained positive ROE which helps to surmise the poor performance of insurers with the equity available.

In 2006-07, the average ROE was 0.2164. Only LIC (2.642) witnessed the ROE above the sector average. SBI Life (0.0078) show a positive ROE but it still stands below the average ROE whereas other insurers also show negative ROE. Reliance Life (-0.474) shows a more negative ROE followed by ICICI Life (-0.328), HDFC Life (-0.15), Bajaj Allianz (-0.102) and MNYL (-0.081).

Sectoral mean values of ROE of life insurers were 0.4903. Comparatively a highest ROE was recorded by LIC (4.3285) followed by SBI Life (-0.0093), HDFC Life (-0.109), Bajaj Allianz (-0.1485), MNYL (-0.1677), ICICI Life (-0.2205) and Reliance Life (-0.2412). Only the LIC (4.328) had witnessed the highest ROE above the sectoral average ROE. SBI Life (-0.0093) has the least negative ROE, its highest coefficient of variance (-544.958) shows the inconsistent performance in this regard.

Actuarial Efficiency

The actuarial efficiency of the life insurer can be analysed from the Table -7. The average actual efficiency of the sector in the year 2001-02 was 0.05338 which has 0.0954 in the year 2006-07. 78.7% simple growth rate is observed during the period of the study.

The benefits paid to the insured was very low in the year 2001-02 and hence all the life insurance players

show low actuarial efficiency than the average actuarial efficiency.(0.05338).

The mean value of actuarial efficiency of the sector was 0.0954 during the period of the study. Among the players only LIC (0.3821) managed to pay benefits to the insured above sector's mean value. Even though the other life insurers could not meet the sectoral average, benefits are paid in the order with Bajaj Allianz at the lead with 0.0691 followed by HDFC Life (0.0553), Reliance Life (0.533), SBI Life (0.0415), MNYL (0.0392) and ICICI Life (0.0276). The highest Coefficient of Variance of HDFC Life (158.859) reveals the inconsistent performance.

Marketing Efficiency

The marketing efficiency i.e. the premium earned per agent is observed from the Table - 8. The average marketing efficiency of the insurers increased from 2.4412 to 5.4501 during the period of the study.

In the year 2001-02, LIC managed to earn 11.25 premiums per agent followed by SBI Life (2.0417), MNYL (1.486), ICICI Life (1.063), HDFC Life (1.0290), Bajaj Allianz (0.162) and Reliance (0.057). Of the seven Life insurers, only LIC (11.25) and SBI Life (2.042) could cope up to earn premium per agent more than the sectoral mean (2.441).

As the period progressed, the marketing efficiency of the insurers increased to 5.659 in the year 2006-07. With more emphasis on new product development, continuous training for employees, LIC collected maximum premium per agent(11.588), followed by SBI Life (11.549), MNYL (5.99), HDFC Life (3.61), ICICI Life (3.374), Bajaj Allianz (2.456) and Reliance Life(1.05). Among the seven life insurance players only LIC, SBI Life and MNYL managed to collect premium per agent above sectoral average.

The sectoral average managerial efficiency is 5.4501 which is more than the average premium earned per agent of ICICI Life (4.428), HDFC life (3.922), MNYL (3.904), Bajaj Allianz (1.7814), Reliance Life (0.9476). The coefficient of variance of Reliance Life (729.0687) is very high signifying the inconsistent performance of the insurer.

Conclusions

Since the seven years of liberalization, insurance sector in India has witnessed tremendous changes in the penetration, improved risk coverage umbrella to various sections of the society with innovative products and at competitive packages, contributing capital to the stock markets more than mutual funds in recent times, increased marketing scale of economies through wide distribution channels etc. As regards with the technology, private insurance companies are on the edge over LIC. Much emphasis is on CRM in managing their customer database.

The widening up of the industry opened the gates for enormous job opportunities in various domains. Major thrust areas such as health insurance, Unit linked policies, micro insurance, cyber insurance; terrorism insurance, etc have provided an impetus in the field of education and research.

The study on operational scenario of insurance players reveals that the operating expenses and commission expenses have become major areas of concern as they are increasing in the recent years. Except LIC, remaining all the insurance players ROA, ROE are negative which indicates that the industry is characterized by low growth rates, high gestation periods. Moreover, the benefits paid by the LIC to the insured are more than the private players in the industry. Among the private players Bajaj Allianz heads the top list.

Insurance industry is characterized knowledge intensive. All the players have been marketing their products and services with innovative practices to increase their economies of scale.

Competition in the insurance industry has brought an opportunity to the players to see the customer as the king in the market. The foremost beneficiary of the liberalization should be the customer and it throws many challenges to the players to meet the customer expectations. As some of the private players started the business in the recent past, there is a challenge and also an opportunity to utilize the technology, advanced practices in management, changes in the global environment etc. The global financial melt down may have its shade on the insurance sector. But the widening horizons of FDI in insurance sector and the vast untapped rural potential of the country will certainly stand as a strong hope for the emergence and multidimensional growth of Life insurance sector as dominant.

Annexures

Factors	Unit Measurement	India	China
Population	Million	1,318	1,312
Per Capita Income	$ per annum/person	1,498	658
Life Expectancy	Years	74	64
Investment	% of GDP	44	29
Penetration of Insurance	% of GDP	2.7	4
GDP (PPP)	$ bn	10,120	4,164

Table 1: Potential and Penetration – India VS China

S. No	INSURANCE PLAYER (Rs in Crore)	GROSS PREMIUM	%	S. No	INSURANCE PLAYER (Rs in Crore)	GROSS PREMIUM	%
PRIVATE INSURERS							
1	Bajaj Allianz	485.81	6.078	10	Kotak Mahindra Old Mutual	135.06	1.69
2	ING Vysya	84.34	1.055	11	Max New York Life	311.65	3.899
3	Reliance Life	354.32	4.433	12	MET life	124. 73	1.561
4	SBI Life	546.34	6.836	13	Sahara Life	13.35	0.167
5	TATA AIG	188.81	2.362	14	Shri Ram Life	55.22	0.691
6	HDFC Standard	287.09	3.592	15	Bharati AXA Life	25.05	0.313
7	ICICI Prudential	951.76	11.91	16	Future Generali Life	1.68	0.021
8	Birla Sun Life	260.21	3.256	17	IDBI Fortis Life	14.78	0.185
9	AVIVA	106.09	1.327				
PUBLIC SECTOR							
1 LIC	4170.87	52.19					

Source: Compiled from IRDA Journal June 2008.

Table 2: Market Share of Insurance Players Upto May 2008

S.No.	Name of the Insurer	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Mean	S.D	COV	Rank
1	LIC	0.0855	0.084	0.079	0.088	0.0665	0.055	0.0763	0.0129	16.958	I
2	ICICI Life	0.729	0.416	0.2903	0.195	0.1566	0.192	0.3299	0.217	65.774	III
3	HDFC Life	1.23	0.468	0.329	0.336	0.253	0.201	0.4695	0.3834	81.656	IV
4	MNYL	2.179	0.1914	0.756	0.596	0.4305	0.342	0.7492	0.7275	97.097	V
5	Reliance Life	40.107	5.251	1.68	0.72	0.517	0.47	8.1242	15.773	194.15	VII
6	Bajaj Allianz Life	3.516	0.964	0.599	0.214	0.155	0.202	0.9417	1.2993	137.98	VI
7	SBI Life	0.767	0.321	0.2541	0.207	0.176	0.108	0.3055	0.2373	77.671	II
	Mean Operating Efficiency	**6.94479**	**1.09934**	**0.5696**	**0.3366**	**0.2507**	**0.224**	**1.5709**	**2.663**	**169.61**	

Source: Compiled from IRDA Annual reports 2001-02 to 2006-07

Table 3 : Operating Expenses Ratio

S.No.	Name of the Insurer	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Mean	S.D	COV	Rank
1	LIC	0.0906	0.0915	0.0907	0.087	0.0781	0.072	0.0849	0.0082	9.6312	V
2	ICICI Life	0.124	0.0904	0.0966	0.033	0.0613	0.066	0.0786	0.0318	40.506	VI
3	HDFC Life	0.197	0.1328	0.13	0.106	0.0766	0.074	0.1193	0.0457	38.282	IV
4	MNYL	0.304	1.158	0.1871	0.157	0.1706	0.152	0.3549	0.3974	111.98	I
5	Reliance Life	0.25	0.258	0.176	0.074	0.0639	0.098	0.1533	0.0874	56.968	III
6	Bajaj Allianz Life	0.329	0.179	0.228	0.146	0.109	0.178	0.1948	0.0767	39.348	II
7	SBI Life	0.0129	0.0258	0.0418	0.039	0.0648	0.069	0.0423	0.0218	51.613	VII
		0.18679	**0.2765**	**0.1357**	**0.0918**	**0.0892**	**0.101**	**0.1469**	**0.0956**	**65.062**	

Source: Compiled from IRDA Annual reports 2001-02 to 2006-07

Table 4: Commission Expenses Ratio

S.No.	Name of the Insurer	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Mean	S.D	COV	Rank
1	LIC	0.00344	0.00179	0.0016	0.002	0.0012	0.001	0.0019	0.0008	44.396	I
2	ICICI Life	-0.312	-0.154	-0.105	-0.048	-0.021	-0.04	-0.113	0.1089	-96.111	V
3	HDFC Life	-0.127	-0.1339	-0.038	-0.77	-0.043	-0.02	-0.189	0.2884	-152.44	VII
4	MNYL	0.0593	0.0147	-0.459	-0.120	-0.046	-0.03	-0.096	0.1877	-195.41	IV
5	Reliance Life	0.0175	0.0638	-0.434	-0.172	-0.155	-0.18	-0.144	0.1765	-122.77	VI
6	Bajaj Allianz Life	-0.102	-0.1137	-0.073	-0.035	-0.028	-0.01	-0.061	0.0423	-69.898	III
7	SBI Life	-0.0020	-0.0357	-0.037	-0.11	0.0019	0.0008	-0.03	0.043	-141.44	II
	Return on assets mean	**-0.0661**	**-0.051**	**-0.163**	**-0.178**	**-0.041**	**-0.04**	**-0.09**	**0.1211**	**-134.25**	

Source: Compiled from IRDA Annual reports 2001-02 to 2006-07

Table 5: Return On Assets Ratio

S.No.	Name of the Insurer	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Mean	S.D	COV	Rank
1	LIC	7.28021	4.0818	4.399	4	3.568	2.642	4.3285	1.569	36.248	I
2	ICICI Life	-0.543	0.347	-0.331	-0.299	-0.168	-0.328	-0.22	0.3029	-137.4	VI
3	HDFC Life	-0.1508	0.2232	-0.092	-0.281	-0.203	-0.15	-0.109	0.1747	-160.2	III
4	MNYL	0.045	0.0189	-0.672	-0.211	-0.106	-0.0812	-0.168	0.2636	-157.2	V
5	Reliance Life	0.0162	0.0465	-0.492	-0.249	-0.296	-0.474	-0.241	0.232	-96.17	VII
6	Bajaj Allianz Life	-0.105	-0.1338	-0.108	-0.245	-0.197	-0.102	-0.148	0.0593	-39.93	IV
7	SBI Life	-0.0023	0.0599	-0.093	-0.033	0.0047	0.00782	-0.009	0.0508	-544.9	II
	Return on Equity Mean	**0.93433**	**0.66336**	**0.3729**	**0.3832**	**0.3718**	**0.21637**	**0.4903**	**0.3789**	**77.274**	

Source: Compiled from IRDA Annual reports 2001-02 to 2006-07

Table 6: Return on Equity

S.No.	Name of the Insurer	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Mean	S.D	COV	Rank
1	LIC	0.35	0.375	0.378	0.4	0.3736	0.416	0.3821	0.023	6.0131	I
2	ICICI Life	0.0055	0.00756	0.0082	0.007	0.0455	0.0919	0.0276	0.035	126.88	VII
3	HDFC Life	0.00089	0.0037	0.009	0.2289	0.0285	0.0611	0.0553	0.0879	158.86	III
4	MNYL	0.0172	0.025	0.054	0.030	0.0539	0.055	0.0392	0.0171	43.516	VI
5	Reliance Life	0	0.0139	0.0161	0.065	0.1462	0.0785	0.0533	0.0551	103.36	IV
6	Bajaj Allianz Life	0	0.0052	0.0125	0.056	0.2085	0.1315	0.069	0.0843	122.31	II
7	SBI Life	0	0.0378	0.0095	0.0771	0.0766	0.0478	0.0415	0.0326	78.508	V
	Mean	**0.05338**	**0.06688**	**0.0696**	**0.1235**	**0.1333**	**0.12597**	**0.0954**	**0.0479**	**50.15**	

Source: Compiled from IRDA Annual reports 2001-02 to 2006-07

Table 7: Actuariual Efficiency

S.No.	Name of the Insurer	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Mean	S.D	COV	Rank
1	LIC	11.25	5.7651	4.706	20.04	19.23	11.588	12.097	5.911	48.87	I
2	ICICI Life	1.063	1.742	2.113	7.9	10.38	3.374	4.4287	3.476	78.49	III
3	HDFC Life	1.029	1.315	1.558	6.63	9.39	3.61	3.922	3.111	79.33	IV
4	MNYL	1.486	1.6719	2.088	5.908	6.280	5.99	3.904	2.166	55.47	V
5	Reliance Life	0.057	0.402	0.483	2.125	1.568	1.05	0.9476	0.718	75.73	VII
6	Bajaj Allianz Life	0.162	0.487	0.607	3.07	3.906	2.4566	1.7814	1.432	80.4	VI
7	SBI Life	2.042	3.254	0.907	27.64	21.03	11.549	11.07	10.16	91.82	II
	Mean	**2.441**	**2.091**	**1.7803**	**10.47**	**10.255**	**5.6597**	**5.4501**	**3.854**	**70.72**	

Source: Compiled from IRDA Annual reports 2001-02 to 2006-07

Table 8: Marketing Efficiency

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> "A sound mind in a sound body is a short but full description of a happy state in this world"
>
> **John Locke**

Post Office Savings and its Relevance in Rural Areas - A Study on the Impetus for Rural Investment with Reference to Kumbalangi in Cochin

Hari Sundar G.
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Mobilisation of domestic financial resources has remained a major concern in many developing countries. Despite the variety of vehicles that are intended to mobilize and allocate financial resources, only very few offer strategies for meeting the needs of poor and lower income people. Savings are increasingly being acknowledged as a powerful tool for poverty reduction. Postal savings funds play a significant role in financing public debt and in a number of countries, the funds are intermediated through a variety of policy based financial institutions with developmental objectives, returning the funds to the direct benefit of the community of savers. Savings is the excess of income over consumption expenditure. Savings are meant to meet contingencies and raise standard of living of individual savers. Domestic savings play an important role in bringing about economic development of backward countries.

In India, domestic savings originate from three principal sectors namely the house hold sector (individual, non-corporate business, private), the private corporate sector (Joint stock companies, cooperative institutions the Public sector (central and state government, local authorities).

The Indian economy is growing significant and has various investment options but the Government of India has provided the oldest investment option. However, it is a fact that the Postal saving scheme has not gained much importance. The changing postal environment presents an enormous challenge for traditional postal businesses, but it also creates a vast array of new business options and opportunities, as the interest rate compared to other schemes provided by the Postal schemes are higher. The study was carried out to analyze whether the Postal savings schemes have gained importance among the people or not. Against this backdrop, the researcher tries to find out the investment pattern of the respondents of Kumbalangi a rural area in the outskirts of Cochin district.

Keywords: **Small Savings, Social Security Funds, Kisan Vikas Patra**

Post Office Savings Banks in India (POSBs)

POSBs in India were established in 1882 by the British colonizers to mobilize savings and operate as an agency for the ministry of finance. As of 2007, there are 1, 54,000 POSBs in India of which 89% were located in rural areas.

Social Security Funds

Small savings provide a variety of schemes to suit an individuals' convenience in availing tax rebate besides helping to multiply money rapidly, backed by the security of the government. The scheme provides free gift coupons besides specific benefits offered by each scheme (Refer Table 1.1 and 1.2 here)

Need for the Study

The Indian economy is growing significant and has various investment options but the Government of India has provided the oldest investment option. Still, the Postal saving scheme had not gained much importance. The changing postal environment presents an enormous challenge for traditional postal businesses, but it also creates a vast array of new business options and opportunities, as the interest rate compared to other

schemes provided by the Postal schemes are higher. The study had been undertaken to analyze whether the Postal savings schemes have gained importance among the people or not. Against this backdrop, an attempt has been made to find out the investment pattern of the respondents of Kumbalangi a rural area in the outskirts of Cochin district.

Objectives of the Study

The main objectives of the current study are

- to assess the saving habit of individuals
- to understand the awareness of people towards Post office saving scheme
- to bring out the investors perception towards Post office for their investment

Today, in our country many investment avenues are available for the investors to invest their money. Only rural people find Post office schemes offered by the Government of India attractive, because of risk free option with the guarantee of their Principal amount. In order to understand the investors investment pattern and their perception towards Post office saving scheme this study may be opted in future for an in-depth analysis. But, a caution should be mentioned here as the survey was limited to Kumbalangi area in the outskirts of Kochi, the results may not be generalized to other places, and since it was a semi rural area the people were reluctant to tell where they invest their money and about their income as they thought it may lead to problems.

Review of recent literature

Salam (2004) in their study had observed the savings behaviour in India. The objective of the study was to find the determinants of savings by analyzing saving behaviour in India over a period of nineteen years i.e., from 1980-81 to 1998-99. The methodology adopted was simple and multiple regression models were used. From the analysis it was found that a favourable macro – economic environment supported by strong structural reforms including liberalization of financial markets should help domestic saving to increase substantially.

Palacios (2001) in his study had observed the challenges of old age income security in India. It was found that one eighth of the world's elderly population lives in India. By 2020, about 15 percent of the population will be over age 60 in Tamil Nadu and Kerala – roughly the same proportion as Australia today. The study concluded that reforms would provide current and future contributors with a viable alternative to a traditional family support system that will come under increasing strain in the course of the demographic transition.

Suresh (2004) in an analysis of popular perceptions said that retail investors swarmed back to the stock markets in the year 2003-04. The investments of households in shares and debentures rose by a paltry 8.6 per cent of Rs. 5,847 crore in 2003-04. Households had deposited Rs. 1,69,000 crore in bank deposits while investments in small savings rose 19 percent. The data suggests that in 2003-04 the household investor had turned extremely conservative.

A World Bank study (2002) released to the Public at the India Post 2010 conference New Delhi, suggested that India Post is particularly well positioned to address the pressures of a changing environment by expanding services into non-traditional areas such as e-banking, e-government and e-commerce, reinventing the services and products it offers. India post is already a major player in the banking sector through the Post office savings Bank, which handles over 110 million money orders a year, and holds approximately US$44 billion in savings account.

Richa (2004) in their study argued that the Post office continues to be a major attraction for savers going by the 32.45 per cent higher collections during the first quarter of the current fiscal relative to that mobilized over the same period of 2003 – 04. Finance Ministry officials say that the attraction for the Post office deposit schemes stems from the higher interest rate they offer vis-à-vis what banks give. Between 1999 – 2000 and 2003 – 04, gross collections under the savings deposits shot up from Rs. 34,650 crore to Rs. 91,3000 crore.

Scher (2001) in their study had observed that in many countries Postal Savings and Giro remittances have long enabled provision of financial services to all segments of the population. Questionnaires were sent to the Ministers and Postal administrations of approximately 80 countries in July 1999. The review of experiences of Asian developing countries suggests many ways by which developing countries can help themselves to mobilize domestic savings and provide domestic financial services through postal savings and remittances and thereby provide financial services to those most likely to be excluded.

Methodology

In this study, the investment pattern and the respondents perception towards Post Office saving Scheme have been studied and the method of data collection was only by way of questionnaire distributed to the respondents. The sample size was selected from Kumbalangi in Kochi district, which was considered to be a semi-rural area. The data was collected purely on random basis. First, the sample size was selected as 300. In the due course when the collected data was reviewed, it was found to have some misspecification of data. So dropping the irrelevant sample, it was narrowed down to 291. The data collected were tabulated in two formats, viz., and simple table and cross table. The data was then analysed by applying simple percentage and Chi - square test.

Data Analysis and Interpretation

As per the responses received, 155 were found to be in the male category and 16 comes under the female category. Thus, it was clear that the maximum respondents of 53.3 percent were from the male category and the remaining 46.7 percent were from the female category. (Refer Table 2.1 here)

It was found that out of 291 respondents the maximum of 101 respondents were of Business class. 79 respondents were salaried people, 73 constituted Housewives, students and retired persons accounted for 28 and 10 respondents respectively. Thus, it was clear that maximum numbers of respondents (34.7 per cent) had their independent business, 27.1 percent constituted salaried people and 25.1 percent constituted housewives respectively. Only 3.4 per cent constituted Students and 9.6 consisted of Retired persons. (Refer Table 2.2 here)

As per the details in Table 2.3 (refer Table 4.3 here), there exists no significant relationship between Age and Percentage of income saved by the respondents. Since, the analysis revealed that the asymptotic significance level was far away from zero. Hence, we reject the H_1 and accept H_0.

There exists no significant relationship between Status and Percentage of income saved by the respondents. Since, the analysis revealed that the asymptotic significance level was far away from zero. Hence, we reject the H_0 and accept H_1. (Refer Table 2.4 here) and many of them are aiming at saving for their child's education, which is given prime importance (Refer Table 2.5 here)

Out of the 12 factors that were considered, only 3 factors were influencing the Investment pattern and Status. Therefore, we accept the null hypothesis and reject alternate hypothesis. In other words, Investment does not have any relationship with the status of the respondents. (Refer Table 2.6 here)

As per the data (Refer Table 2.7) the majority (51.2 percent) of the respondents recommended that the interest rate should increase. 26.8 percent felt that the prevailing interest rate was good, 14.8 percent felt that there was too much reduction as their prime motive was savings. Only 7.2 percent felt that the interest rate should be reduced further.

It was observed that out of 180 respondents who invested their money, 55 percent of the respondents preferred postal savings for the security available in the scheme. 16.7 percent had preferred postal savings, as they had to save little of their income for savings. 15.6 percent had invested in postal saving for the interest rate and friendly transaction was a reason for investment in post office saving scheme by 12.8 percent of the respondents. (Refer Table 2.8 here)

Generally, the postal department is considered as a monotonous department. Out of 111 respondents, the maximum (38.7 percent) of respondents reported that they were not aware of the schemes. 24.3 percent of respondents felt that the schemes were less attractive. 13.5 percent found that insurance scheme was better, 12.6 percent of respondents were found to be in less income group. 1.8 percent felt that because of late service, there was no easy deposit and withdrawal as provided by the bank. Only 0.9 percent of the respondents did not invest in post office because of less advertisement and no guarantee for return of money. (Refer Table 2.9)

The majority (28.3 percent) of the respondents felt that Kisan Vikas Patra was providing high return with interest rate of 8.41 percent, Irrespective of its long period of maturity of 8 years and 7 months. Next preference was Monthly income scheme by 23.3 percent of the respondents. MIS with its handsome 8 percent returns proved to be a major draw. (Refer Table 2.10). 15 percent of the respondents felt that Recurring deposit was giving more return on investment. 11.1 percent of respondents preferred Postal life insurance scheme, 8.9 percent felt that Time deposit was giving high return. 5 percent felt

that Public provident fund was providing high return on investment. Only 2.9 percent felt that Post office savings A/c and 4.4 percent felt National savings certificate provides high return on their investment respectively.

The majority of 53 respondents (77.9%) felt that there was 100% safety for their investment. 10.3% had invested in Post office as a small saving as they do consider the interest rate. 2.9% were availing tax benefits, as it was provided by the Government saving instruments and the highest guarantee was provided. 5.9% felt safe to invest in Government Postal Savings. (Refer Table 2.11)

Recommendations

The humble Post office is fighting a valiant battle against the swanky technology – driven new age Banks. The Savings bank and Postal deposits have considered to be surging well into the present decade and it has seen a steady and consistent growth in post office deposits, fit to rival the best performers in the banking industry. The data had been analyzed be using simple percentage analysis and the results showing the following :

- The sample size was collected from Kumbalangi which was considered to be a semi-rural area. The sample size was taken as 291. The analysis depicts that the majority of 34.7% of respondents were of Business class, 27.1% were salaried people and 25.1% comprised of housewife, 9.6% were found to be students and 3.4% comprised of retired persons. It was also evident from the analysis that irrespective of high or low income, 46% of respondents were found to save only 5% of their income. The households were found to save the major part of their income. It was interesting to note that Business people were found to save 10% of their income.
- `The major purpose of the individuals' saving was found to be for their children's education and the next main purpose was for their safety after retirement. The analysis revealed that majority were investing in Post office saving scheme, which they preferred for its safety features and attractive interest provided by the Government. The next preference was give to Insurance as most of respondents found it to more beneficial than Postal savings.
- `Bank savings were mostly preferred by Business persons as they found it to be the best mode for their transactions. The analysis discloses that most of the respondents (38.7%) were not aware of the Postal saving schemes. They preferred post office only for the payment of Telephone bill and other postal transactions. From the analysis it was found that majority of the respondents were expecting increase in the bank interest rate.

From the analysis it was found that the reasons for not investing in Postal schemes were due to the following reasons.

- Respondents were not satisfied with the service provided.
- Agents were not considered reliable. Respondents found it difficult to believe the agents. The factors that influenced to invest in postal schemes were that the proportionate of investment is less and it provides high interest rate than banks. The analysis brings out that Kisan Vikas Patra stood first in the preference of respondents as the investment doubles and gives high return. Monthly Income Scheme was considered to be the best scheme as it provided monthly interest and 10 percent bonus for the initial investment made and income tax rebate. The study reveals the fact that majority of the respondents were interested in investing in Post Office, irrespective of reduction in interest rate because of its highest guarantee and safety features.

From the Chi-square test it was found that there exists a significant relationship between Income and Purpose of savings by the respondents and there exists a significant relationship between Age and Purpose of savings by the respondents.

Out of 12 factors considered only 3 factors were influencing the Investment pattern and Status. In other words, Investment does not have any relationship with the status of the respondents. Out of 12 factors considered only 3 factors were influencing the Investment pattern and Income. IN other words, Investment does not have any relationship with the income pattern of the respondents.

We find that there exists a significant relationship between Gender and Percentage of income saved by the respondents. Since, the analysis revealed that the asymptotic significance level was nearer to zero. We find

that there exist no significant relationship between Age and Percentage of income saved by the respondents. Since, the analysis revealed that the asymptotic significance level was far away from zero. We find that there exists a significant relationship between Status and Percentage of income saved by the respondents. Since, the analysis revealed that the asymptotic significance level was zero. We also find that there exists a significant relationship between Income level and Percentage of income saved by the respondents.

Conclusion

The study found that for India Post, there is no alternative than to leverage its infrastructure, trust, and related services into a much larger role e-commerce and e-government. To be successful in competition with other (Private competitors, it must be ready to offer high-quality IT-related services. More awareness must be created among the people about the schemes introduced and the reach of the schemes must be checked. This will also represent a significant growth opportunity for India Post beyond its current business base. Technology will continue to remain a key driver of its business practices across the country. Its postal value proposition will be stronger with appropriate institutional structure and partnerships with technology companies. The possible actions that can be taken by the India Post can be summarized as:

Government must create more awareness among the rural and urban people about the saving Schemes and the benefits availed through it as it has not reached the People properly. Good reliable, Government authorized agents should be appointed so that people find it easy to hand over the money so that mobilization of savings could be increased. The Post Offices should be computerized and more staff members are to be appointed as majority feel that the service provided by the post offices are not good. The interest rates have to be increased as for many deposit schemes there was a gradual reduction from high percentage of interest to low percentage. There must be a change in the infrastructure facilities of Post Office and the staff should be more hospitable.

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Appendices

Sl. No.	Name of the Scheme	Rate of Interest	Limit of investment		Maturity Period	Special Features
			Minimum	Maximum		
1.	Post Office Monthly Income Scheme (POMIS)	8% + 10% Bonus (Rs. 33/- will be monthly interest for the deposit of Rs. 5999/-)	Rs. 1000/-	Single Account Rs. 3.00 Lakhs Joint Account Rs. 6.00 Lakhs	6 Years (10% bonus (i.e.) Rs. 500/- for the investment of Rs. 5000/-)	1. 10% Bonus 2. Individual/Joint Account can be opened 3. Income Tax Rebate under sec 80L 4. Encashment can be made with 50% discount after 1 year and without discount after 3 years 5. Can be opened in Post Office
2.	Kisan Vikas Patra (KVP)	Doubles in 8 years 7 months	Rs. 100/-	No Limit	7 Years 7 Months	1. Individual/Trust can deposit. 2. can be pre-maturely encashed after 2½ years onwards. 3. Amount can be deposited in Post Office
3.	National Savings Certificates VIII Issue (NSC)	8% Compound int.	Rs. 100/-	No Limit	6 Years (Rs. 100/- grows to Rs. 160.10 on maturity)	1. Individual / Trust can deposit 2. Amount can be deposited in Post Office 3. Income Tax Rebate u/s. 80 L and u/s 88
4.	15 Years Public Provident Fund (PPF)	8% Compound int.	(1st yr. 8.16) 2nd Yr – 8.83 3rd Yr – 9.55 4th Yr – 10.33 5th Yr – 11.17 6th Yr – 12.08)	Rs. 70,000 per annum	15 years	1. Income Tax rebate u/s 88 and sec 10 2. Free from out attachment 3. Loan facility from 3rd to 5th year 4. Withdrawal allowed from 7th year Interest is Tax free 5. Account can be opened in Head Post Office / State Bank of India / Autho-Rised branches of Nationalised Banks
5.	Post Office Recurring Deposit (PORD)	(Rs. 10 deposit per month the maturity value will be Rs. 728.90)	Rs. 500/-	No Limit	5 years Account can be continued upto 10 years	1. Insurance coverage upto Rs. 50/- 2. After 1 year 50% of the deposit amount can be availed as loan once 3. Can be opened in all Post Offices.
6.	Post Office Time Deposit (POTD) 1 Year 2 Years 3 Years 4 Years	6.25% 6.50% 7.25% 7.50%	Rs. 10/- Rs. 50/-	No Limit	1 Year 2 Years 3 years 5 years	1. Individual / Trust can deposit 2. Income Tax Rebate u/s 80 L 3. Interest can be withdrawn annually after 1 year 4. Can be opened in all Post Offices
7.	Deposit Scheme for Retired/ Retiring Govt. Employees/ Public	7% Interest	Rs. 1000/-	Entire retirement benefits to be deposited within 3 months.		1. Entire interest earned is Tax free 2. To be opened in SBI and selected Nationalised Banks in District Head Quarters
8.	Sector (DSRGE/DSRPSU) Post Office Savings Account (POSA)	3.5% interest Single / Joint A/c 3% Public Accounts 2% Other Accounts	Rs.50/-	Single Account Rs. 1.00 Lakh Joint Account Rs. 2.00 Lakhs	--------	1. Account can be opened in any Post Office 2. Amount can be withdrawn as and when necessary 3. Cheque facility is available 4. Interest is exempted from Income Tax under income Tax Section 10(1)

Table 1.1: Postal Small Savings Schemes

	Gross Mobilisation	Net Mobilisation	Small Savings Loans #	Percentage Share of Four Major States in Aggregate Small Savings Loans*
1991 – 92	18920	9104	7026	53.5
1992 – 93	18587	6640	5481	55.1
1993 – 94	19374	5717	4264	50.1
1994 – 95	27292	9091	5000	51.1
1995 – 96	37491	16576	9675	45.4
1996 – 97	36679	12749	9990	50.0
1997 – 98	38111	15246	10671	51.6
1998 – 99	51889	24403	15732	53.9
1999 – 2000	62157	33044	23788	56.1
2000 – 01	75542	36653	26937	52.5
2001 – 02	88739	45601	33265	50.8
2002 – 03	90990	44406	35018	53.8
2003 – 04	118586	60739	52261	49.6
2004 – 05	145550	71380	64500	Not Available
2006 – 07	165600	78720	70000	Not Available

Table 1.2: Aggregate Mobilisations Under Small Savings

* The amount pertains to small savings scheme mobilized through NSSF, which goes to States and does not cover the subscription amount under Gold Savings bonds.

\# Amount due for calendar year released during the financial year : The share of net Small savings collections during a calendar year are released in the financial year.

Gender	No. of respondents	Percentage
Male	155	53.3
Female	136	46.7
Total	**291**	**100**

Table 2.1: Gender Composition of Respondents

Status	No. of respondents	Percentage
Business	101	34.7
Salaried People	79	27.1
House wife	73	25.1
Students	28	9.6
Retired Persons	10	3.4
Total	**291**	**100**

Table 2.2: Status Composition of Respondents

		% saved					
Age		5%	10%	20%	30%	Above 30%	Total
15 - 25	NOR %	43 55.1	14 17.9	12 15.4	3 3.8	6 7.7	78
25 - 35	NOR %	40 43.0	31 33.3	13 14.0	5 5.4	4 4.3	93
35 - 45	NOR %	23 34.8	21 31.8	18 27.3	4 6.1		66
45 - 55	NOR %	15 48.4	7 22.6	7 3.2	1 3.2	1 31	31
Above 55	NOR %	13 36.5	6 26.1	3 13.0	1 4.3		23
Total	**NOR**	**134**	**79**	**53**	**14**	**11**	**291**

Table 2.3: Percentage of Income Saved by the Respondents by Age

Null Hypothesis (H_0) : No significant relationship between Age and Percentage of income saved by the respondents.

Alternative Hypothesis (H_1) : Significant relationship between Age and Percentage of income Saved by the respondents.

Chi-Square Test did not reveal any significant association

		% U save					
Age		5%	10%	20%	30%	Above 30%	Total
Business	NOR %	31 30.7	37 36.6	22 21.8	7 6.9	4 4.0	101
Salaried people	NOR %	33 41.8	22 27.8	18 22.8	3 3.8	3 3.8	79
House wife	NOR %	46 63.0	14 19.2	9 12.3	3 4.1	1 1.4	73
Students	NOR %	22 78.6	1 3.6	2 7.1		3 10.7	28
Retired persons	NOR %	2 20.0	5 50.0	2 20.0	1 10.0		10
Total	**NOR**	**134**	**79**	**53**	**14**	**11**	**291**

Table 2.4: Percentage of Income Saved by the Respondents by Status

Null Hypothesis (H_0) : No significant relationship between Status and Percentage of income saved by the respondents.

Alternative Hypothesis (H_1) : Significant relationship between Status and Percentage of income Saved by the respondents.

Chi-Square Test revealed a significant association

Purpose	No. of respondents	Percentage
Children - Education	74	25.4
Children – Marriage	25	8.6
To Buy Gold	14	4.8
To Construct a House	36	12.4
Retirement Safety	39	13.4
To Reduce Income tax burden	12	4.1
To Buy House hold Articles	50	17.2
To Help the spouse	1	.3
For Future Safety	16	5.5
Higher Studies	7	2.4
For Savings	5	1.7
For Emergency use	3	1.0
For Grand Children	6	2.1
Development of Business	3	1.0
Total	**291**	**100**

Table 2.5 : Purpose or Motive of Savings by the Respondents

		STATUS					
Invest		**Business**	**Salaried**	**House wife**	**Student**	**Retired**	**Total**
Insurance	Yes %	66 46.8	37 26.2	27 19.1	9 6.4	2 1.4	141
	NO %	35 23.3	42 28	46 30.7	19 12.7	8 5.3	150
Bank savings	Yes %	43 31.9	39 28.9	35 25.9	9 6.7	9 6.7	135
	NO %	58 37.2	40 25.5	38 24.4	19 12.2	1 0.6	156
B. Fixed	Yes %	19 27.5	15 21.7	18 26.1	13 18.8	4 5.8	69
	NO %	82 36.9	64 28.8	55 24.8	15 6.8	6 2.7	222
B. Recurring Deposit	Yes %	12 33.3	14 38.9	3 8.3	3 8.3	4 11.1	36
	NO %	89 34.9	65 25.5	70 27.5	25 9.8	6 2.4	255
Company Deposits	Yes %	2 40	2 40	1 20	-	-	5
	NO %	99 34.6	77 26.9	72 25.2	28 9.8	0 3.5	286
Chit funds	Yes %	25 43.9	19 33.3	11 19.3	-	2 3.5	286
	NO %	76 32.5	60 25.6	62 26.5	28 12	8 3.4	234
Post Office Savings	Yes %	49 27.2	57 31.7	43 23.9	21 11.7	10 5.6	180
	NO %	52 46.8	22 19.8	30 27	7 6.3	-	111
Equity	Yes %	3 50	2 33.3	1 16.7	-	-	6
	NO %	98 34.4	77 27	72 25.3	28 9.8	10 3.5	285
Company Debentures	Yes %	1 33.3	1 33.3	1 33.3	-	-	3
	NO %	100 34.7	78 27.1	72 25	28 9.7	10 3.5	288
Bonds	Yes %	5 45.5	3 27.3	3 27.3	-	-	11
	NO %	96 34.3	76 27.1	70 25	28 10	10 3.6	280
Mutual Funds	Yes %	1 50	-	1 50	-	-	2
	NO %	100 34.6	79 27.3	72 24.9	28 9.7	10 3.5	289
Other Land		1 50	1 50				2
Business		13 76.5	2 11.8	2 11.8			17

Table 2.6: Investment Pattern of Respondents by Status

Null Hypothesis (H_0) : The Investment pattern and Status of the respondents is Independent.

Alternative Hypothesis (H_1) : The Investment pattern and Status of the respondents are not independent.

Chi-Square Test

	C^2 Value	Degrees of freedom	Asymptotic significance (2 sided)
Insurance	21.690*	4	0.000
Bank Savings A/c	10.876	4	0.028
Bank Fixed Deposit	11.806	4	0.019
Bank Recurring Deposit	13.817*	4	0.008
Company Deposits	1.061	4	0.899
Chit Funds	0.4787	4	0.033
Post – Office Savings	19.655*	4	0.001
Equity Shares	1.472	4	0.832
Company Debentures	0.522	4	0.971
Bonds	1.895	4	0.755
Mutual Funds	1.444	4	0.837
Others	2.062	4	0.357

Reduction in Bank int. rate	No. of respondents	Percentage
Good	**78**	**26.8**
Should be reduced further	21	7.2
Too much reduction	43	14.8
Should increase	149	51.2
Total	**291**	**100**

Table 2.7: Respondents View about Reduction in Bank Interest Rate

Prefer POSS	No. of respondents	Percentage
Security	**99**	**55.0**
High Interest rate	28	15.6
Proportionate of investment is less	30	16.7
Friendly comfortable transaction & easy way of depositing money		12.8
Total	**180**	**100**

Table 2.8: Respondents Preference for Post Office Saving Scheme

Why not prefer POSS	No. of respondents	Percentage
I am not aware of it	43	38.7
Less attractive	27	24.3
Not beneficial like insurance	15	13.5
Vigorous payment nature	6	5.4
Less income	14	12.6
No easy deposit & withdrawal like bank	2	1.8
No guarantee in return of money	1	.9
Late service	2	1.8
Less advertisement	1	.9
Total	**111**	**100**

Table 2.9: Reasons for not Choosing Post Office Saving Scheme

Scheme	No. of respondents	Percentage
Kisan Vikas Patra	51	28.3
National Savings Certificate	8	4.4
Recurring deposit	27	15.0
Monthly income scheme	42	23.3
Public Provident fund	9	5.0
Post office time deposit	16	8.9
Post office savings A/c	7	3.9
Post office insurance	20	11.1
Total	**180**	**100**

Table 2.10: Post Office Saving Scheme Giving High Return

Reasons	No. of respondents	Percentage
Safety	53	77.9
Confidence	4	5.9
As a small saving	7	10.3
Tax benefits	2	2.9
Highest guarantee	2	2.9
Total	**68**	**100**

Table 2.11: Reasons for Investment in Post Office after their Reduction in Interest Rate

> “Understand that happiness is not based on possessions, power or prestige, but on relationships with people you love and respect.”
>
> **H Jack Brown Jr**

CASE STUDY

Lamb to the slaughterhouse?

Dr Matthukutty M Monippally

Keywords: **Mentor, Training Function, Organization Chart**

Hemant Rai, Zonal Sales Manager (ZSM) of Mumbai, Alpha Pharma, had spent over an hour arguing vehemently with the no-nonsense, vivacious, and talented Sushma Patel, one of the company's seven District Sales Managers (DSM) in Mumbai. He was trying to persuade her to accept the promotion to Regional Sales Manager (RSM), which the company had just offered her. When he promised any help she might need to do well in the new position, in which she would manage half of Mumbai and report directly to him, all she said was, "Still…" In spite of all her counter arguments and hesitations, her body language appeared to Hemant to want the promotion. So impetuously he dialled the Vice President - Sales & Marketing, and announced, "Yes, Sir, she has accepted the promotion offer." Sushma was taken aback, but did not try to correct him.

A couple of hours later, on his way back home, Hemant's mind went over the sequence of events that led to the Vice President's decision to promote Sushma to RSM (see Exhibit 1 for a partial organizational chart). Although Alpha Pharma (annual turnover: Rs 2500 million) had a few women Medical Representatives in different parts of India, it had no women managers. Sushma was the first woman ever to become a DSM, and now an RSM, at Alpha.

Sushma – A rough diamond

Hemant recalled his first encounter with Sushma, the previous year. He had just taken over as Zonal Sales Manager of Mumbai. He called the two RSMs, all the seven DSMs, and half the Medical Representatives in his zone to a meeting the day after he took over. Whenever he got a new posting he would call all his subordinates at the earliest possible for a face-to-face meeting and exchange of mutual expectations because he believed that it would establish strong bonds and ensure cooperation. It was also usual for him to tell the introductory meeting, "Without a leader a team can achieve a lot; but without a team, a leader can achieve nothing. I am a zero without you." He said it at this meeting too. No one said anything in response. But a woman called out enthusiastically, "You can count on our support, Sir." That was Sushma. He was a little surprised that a woman should take the initiative when all the men – managers as well as Medical Representatives – sat silently. He had never had a woman subordinate to draw any comparisons. He didn't think anymore about it then.

The following week, however, Hemant was reminded of her. He got a call from Sawant, one of his wholesalers and President of Pharmaceutical Wholesaler's Association, Mumbai. After the initial pleasantries he said quite abruptly, "I don't want to see Sushma Patel anywhere near my shop." Startled, Hemant asked why. "She is rude. Arrogant. She doesn't know how to talk to people. I don't want to have anything to do with her." Hemant felt that it would be better to meet the wholesaler and sort things out rather than settle things one way or another on the phone. So he said, "I've just taken over. I'd like to meet you. Give me a few days. Until I meet you, you can be sure that Sushma will not come to you." He instructed Sushma not to visit the wholesaler for a few days. He said he would like to be with her when she visited Sawant next.

The following Saturday, Hemant went to Sawant's shop. He didn't ask Sushma to join, but took along the RSM she was reporting to. On the way Hemant tried to find out more about her. The RSM readily agreed with the wholesaler's view that Sushma was arrogant. As they neared the wholesaler's office, Hemant told him: "Thank you for giving me your views on Sushma. But we have to protect our subordinate in front of our customers. If you can't support her, please keep quiet when I speak to Sawant."

In response to Hemant's question, Sawant narrated a recent event that had irked him. Sushma had come with a new Medical Representative and demanded that the Medical Representative's retailers be given bonus medicine as part of a promotional scheme. When

Sawant refused on the ground that the scheme had already expired, she blurted out in front of everyone: "Why can't you give? I know you have plenty of the scheme stocks." Sawant didn't like it; no Alpha managers had ever spoken to him like that. Moreover, he knew very well that the company could not ask him to give out bonus medicine once the promotional scheme expired.

Hemant readily admitted that Sushma was wrong to demand bonus medicine for the Medical Representative's retailers after the expiry of the promotional scheme irrespective of how much promotional stock the wholesaler had. He apologized on her behalf. He, however, did not agree to move her out of that district. Instead he promised to accompany her when she visited Sawant's office.

Hemant as boss, mentor, and critic

The following day Hemant called Sushma to his office and asked her for an explanation. Her version was roughly the same as Sawant's. When asked why she demanded bonus medicines after the expiry of the scheme, her reply was characteristically simple and straightforward: "I knew he was hoarding promotional stock. Why couldn't he give?" Hemant explained to her the way such promotional schemes worked. A wholesaler was not obliged to give any bonus to retailers after the expiry of the scheme although he might, and often did, consider requests for it. That he still had promotional stock was irrelevant. That most wholesalers would give promotional bonus for a few days beyond the expiry of such schemes was irrelevant too. He also convinced her that now she was a manager in charge of a district and that she should learn to speak with greater calm and maturity. She promised to try to control her language in future.

Sushma's visit to the wholesaler was on Saturdays. During the next nine Saturdays Hemant accompanied her every time she visited Sawant. During the first three weeks Hemant did all the talking; in two months, Sushma did all the talking. In fact, Sawant not only accepted her but also started feeling respect for her because the sales were steadily going up in the district. Obviously she had a way of motivating the Medical Representatives and getting them to make more visits to doctors and retailers.

Hemant started to notice that Sushma had toned down her speech. She was speaking more like a manager now. Several doctors in her district spoke very highly of her. Her Medical Representatives were very happy with her and admired her. But her RSM kept complaining that she was rude and uncooperative. One day Hemant himself noticed that there was a cold war going on between the two. He called her into his office and asked her why she was rude towards her RSM. She said that she was not rude to anyone, but she spoke her mind. This is something that she learned from a somewhat difficult childhood. He also learned from her that before leaving home for work she had to cook for her family, which included a pre-school child. In the evenings her husband expected her to be home early enough to cook dinner and serve. Things weren't helped by the RSM telephoning in the evenings and asking for a report on the day's activities. Annoyed by these phone calls the husband occasionally asked her to give up the job.

Sushma was very weak in writing. She hated writing reports. The RSM had to pressure her to write reports. Her straight talk, never mincing words, didn't help matters either.

A few months later her RSM was transferred as part of routine job rotation. The other RSM in Mumbai was now asked to look after both the regions coming under Mumbai Zone; but Hemant encouraged DSMs in Sushma's region to report to him directly in most aspects of the business. He gave her more and more responsibilities especially in areas that needed written communication. He learned that it was difficult to persuade her; but once she was convinced and agreed to do something, she would do an excellent job.

Sushma's internal barriers

The RSM's post had lain vacant for three months when the Head Office decided to fill it. They asked Hemant to suggest the names of DSMs who could be considered for promotion to RSM. He sent in five names with Sushma ranked third. The RSM for Mumbai (B) also was asked to send in names. On his list Sushma was ranked fifth.

The first two DSMs on Hemant's list were considered and rejected. So Sushma was invited to attend an interview at Head Office. To Hemant's surprise, she said she didn't want to go. As he questioned her closely, her fears emerged. She was doing very well as a DSM. She could combine work with running her home because her travels were restricted to her district, never far from home. If she became an RSM, the pressure would be too much. There might be late night meetings and even overnight trips away from Mumbai. She might find it impossible to balance work and home. After all there was no other woman RSM in the whole company. Perhaps the RSM's position was not suitable for women.

Hemant felt it would a pity if such a capable woman

chose to freeze at the DSM level. He asked her what her ambition was. She said she had no specific aim, no ambitions. She was happy with what she had. If she became an RSM and failed to look after the region well, she would have to quit Alpha. That is something she didn't want. Why should she venture into risky areas when things were going so well for her?

He assured her that there was no question of her failing. He would make sure that there were no late night meetings that would interfere with her home life. She would not be asked to go on overnight tours. An RSM's day would be no longer than that of a DSM which she was managing excellently. She still refused to consider becoming and RSM.

Exasperated, he asked her: "Do you trust me?" When she said "yes," he added: "Then blindly follow my advice. Go ahead and attend the interview. If they don't select you, you don't lose anything. If they do, you will know how highly the company regards you." He also gave her tips on how to answer questions at the interview. Finally she agreed to attend the interview.

After the interview Sushma came straight to Hemant's office. She was dejected. By then he had already heard from the Head Office that she had been selected and given 24 hours to formally respond to the offer. He congratulated her and sent her home to think about it, discuss with the family, and decide by the morning. He was sure that she would now accept the offer.

Late in the evening Hemant received a call from Sushma's mother. She was apologetic about calling so late but was wondering if he could go over to her place. They had difficulty taking a decision on the new job offer. He readily agreed and reached their place soon. He was shocked to find that the mother also was opposed to the idea of her becoming an RSM. All he could do was to reassure her that Sushma would do well and that he would do all he could to make sure she succeeded. That seemed to convince her.

The following day Sushma did not contact the Head Office to respond to the offer. She let the deadline pass. It is as though she wanted the offer to lapse; then she could continue to be DSM. She knew she had matured, that she could now act and talk like a manager. She knew she had been very successful as a DSM. Her district was one of the best. Wouldn't she lose all that if she became an RSM and failed to deliver?

It is well past the 24 hour deadline that she went to Hemant. She told him that she didn't contact the Head Office because she didn't want the RSM's job. He gave her yet another pep talk. He offered her any help that she needed any time. When she still responded with a vacillating "Still…" he felt he had to prod harder. He knew she trusted him and found him, in her own words, "a friend, mentor, and critic." He also felt that she wanted to take up the job but fear of failure was holding her back. That is why he picked up phone and called the Head Office to confirm that she had accepted the offer. That she didn't correct him signalled to him that she accepted it. Was there a better way of persuading her, he wondered.

Sushma's story

As a DSM I was pretty successful. But I had many difficulties with the RSM I was reporting to. He never liked my open and straightforward talk. Perhaps he resented it in a woman. Perhaps he could not stomach my success. So, he turned the wholesaler in my district against me. That is why as soon as Mr Hemant Rai took over as ZSM, the wholesaler called him and asked him to move me out. Mr Rai didn't jump to any conclusions. He approached the problem with an open mind. I think he was genuinely interested in seeing his subordinates perform well and so he created conditions for it.

About three years ago the RSM I was reporting to was promoted and moved to training function. Several DSMs were interviewed for the post he vacated. I didn't even want to try because I didn't think I was ready. Most of the other DSMs were older and more experienced. I had spent just 18 months as a DSM. Besides, I had a very young daughter to look after. Mr Rai suggested that I go for the interview. Apparently he had recommended my name also to the Head Quarters. He said, "You are young. If you don't get selected, you lose nothing. You will at least know where you stand and how the company sees you." He also told me what kind of questions would generally be asked. This was my very first interview for the RSM's post. I went to it with considerable hesitation but I was not at all tense about the outcome.

I think the interview went very well. I was my usual self because I had nothing to lose. I guess my superiors at the Head Office knew about my performance. Towards the end of the interview the VP - Sales & Marketing offered me the RSM's position. When I didn't readily accept the offer or even show any enthusiasm, he appeared surprised; he gave me 24 hours to consider the offer and respond.

Of course I was thrilled at the news of my being selected ahead of the more experienced DSMs. But I was equally sure I should not take up the job although the boost to my career and the additional income were welcome. I felt that until I worked as a DSM for 3 to 5

years, I would not able to do a good job and command respect as an RSM. Several of my DSMs had 8 to 12 years of experience compared to my measly 18 months. I had reported to one of them when I started out my career as a Medical Representative. Another DSM had taught me how to do a Medical Representative's job well. If I became the RSM, they would have to report to me. My being a woman in a male-only set up didn't help either. No woman had ever risen to the RSM level at Alpha. I knew of no woman at high managerial levels in sales and marketing in other pharma companies either.

Initially my mother was also unsure because my daughter was just 4 years old then. Would I be able to reconcile the increased work demands with family responsibilities?

Mr Rai tried to convince my mother and me that I should take up the RSM's job. My mother had in the meanwhile said that she would take care of my daughter. She also said that I was capable and I should not let go a chance like this, which might not come again. I was still unable to take a firm decision because I was still full of self doubt. I was doing an excellent job as a DSM; why spoil my track record by taking on something bigger too soon and fail at it? In fact if I didn't do well as an RSM, I would have to resign and leave. I would then need to look for a new job.

Because I was unable to decide, I let the 24-hour deadline pass. Later, when I met Mr Rai in his office, he again gave me various reasons why I should accept the RSM's job. He reassured me that he would give me whatever help I needed to succeed in the new position. When I continued to dither, he just picked up the phone, called the VP and said I had accepted the job. He also announced to the DSMs that I had accepted the RSM's job. I wanted to stop him, but I didn't. I guess, somewhere in my heart I really wanted to be an RSM and move up the ladder. I also knew I was capable. But self-doubt had overruled such desires.

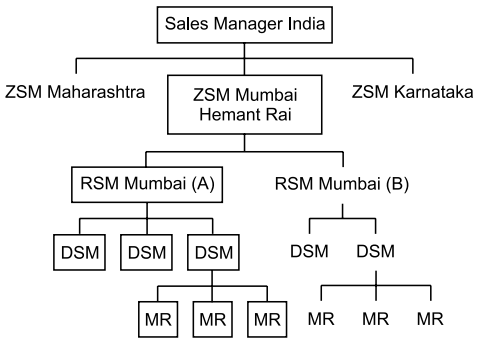
Mr Rai was my best friend and severest critic. He had been very kind to me right from day one, but had also made me cry several times. He expected very high levels of performance from me. When other DSMs failed, he would accept it. No mercy when I failed. He had also supported me and expressed his strong faith in my abilities several times. So when he, sort of, took the decision for me, I didn't contradict him.

This was the start of the toughest period in my life. The Mumbai region had not at all being doing well. Soon after I took over as RSM, a couple of senior DSMs resigned and left. But I went ahead and, I guess, did pretty well because in a little over two and a half years I was promoted to Zonal Sales Manager in charge of Mumbai Zone. This is the position held by Mr Rai. Several RSMs from different parts of the country had competed for it when Mr Rai vacated it on promotion. Currently I am the only woman ZSM at Alpha.

Post Script

Sushma took up the RSM's job, and did very well. In a little over two-and-a-half years she was promoted as ZSM, the position vacated by Hemant on promotion. Here again Hemant had to persuade her to take up the new challenge, reporting to a new boss. She took up the challenge, and in less than a year, became one of the most successful ZSMs in the company, breaking the records set up by Hemant for Mumbai.

Exhibit 1: Partial Organizational Chart at Alpha Pharma



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BOOK REVIEW

A NEW BEGINNING

THE TURNAROUND STORY OF INDIAN BANK - Ranjana Kumar

Reviewer: Prashob Jacob*

Keywords: **Turn Around, NPA, Customer Relation Management, Holiday Marketing, Risk Management**

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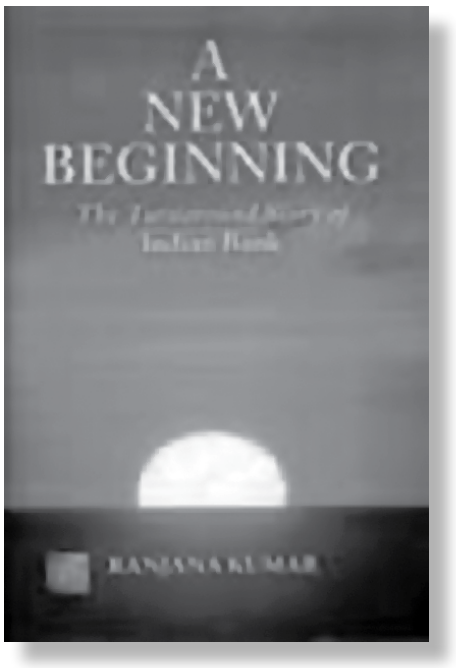
ISBN: 978-0-07-024883-0
Publisher: Tata Mc Graw Hill Publishing Company Limited, New Delhi.
Price: Rs: 690/-



Not the same old story of sticking on to management ideas or the words of management gurus - it's all about the real life experiences that a lady executive officer had to face when she took over the mantle as the Chairman and Managing Director of Indian Bank during its difficult time of crisis. The experiences of being a family together in the bank, never having a feeling of being in the sinking ship and all the more the teamwork which enabled for the turnaround of the Indian Bank- all these are elaborated in an elegant style in this book written by Ms. Ranjana Kumar, which was one among the hot sellers over the past few months.

The author who goes on to say that she was given advice and inspiration by Dr. A. P. J. Abdul Kalam for writing the experiences of the turnaround in the form of a book for being used by the future generation feels that motivation and leadership is what is lacking in many such organizations wherein things could change if proper training coupled with motivation is provided for the workers.

The story of the Indian Bank which had accumulated a loss of Rs. 4,000 crore which had wiped out its own equity due to various sorts of mismanagement over a period of 8 years along with very high NPA much higher than the industry average has been explained in the book clearly giving feelers of how financial mismanagement can lead to serious problems in a financial institution. The sense of lost identity among the employees in the bank clubbed with rumours of its merger, liquidation of the bank recommended by the industry association and accusatory comments- all these have been substantially described here by showing how such things can affect the morale of the workers.

The turnaround strategy adopted included efforts such as sending workers for orientation programmes, trainings, Ms. Kumar's personal visit to most of the branches with the view of shoring the morale of the workers, and instill the sense of confidence to resurrect the bank have found a place in the book.

The issues such as delayering of the office from a four tier system to a three tier system by doing away with 12 zonal offices and also to adopt to a two pronged

approach- increasing the income and reducing the expenditure, which she had adopted to in a skillful way in the bank has been described in a beautiful way here.

The simple way to regain the lost trust was to show that the bank was getting back to normal, she says while adding that she had taken steps to restart the issuing of personal loans, vehicle loans and consumer loans which the bank had advertised in the dailies. A sum of Rs. 41 crore was disbursed as loan during 2001 and Indian Bank was able to be on par with the State Bank of India in terms of aggressive marketing of housing loans. The story of the vigour with which the bank started functioning finds place in this part.

The book also explains there are stages wherein one could go on for holiday marketing too ie marketing on Sundays and other holidays too for the resurrection of the bank. Better Customer relation Management, providing excellent service to the clients as well as improving the image – all these were the areas that were in the minds of the workers including me, she says.

From a place of real doomed level, the bank was able to rise up like a phoenix just because of the importance given for continuous monitoring of credit, risk management as well as management of standard assets, which have been described here.

And finally, the author feels that empowerment and accountability have to go together with sharing of credit, which the managers first were reluctant but later became used to.

This well written book laden with real life examples by Ms. Ranjana Kumar, who is popularly called as "Turnaround queen" is worth reading not once but for several times especially by all management students to have a feel of how leadership, motivation and sheer willpower can turn things from a totally negative perspective to the opposite side just with the help of the employees as well as by encouraging the assertiveness in the workers.

The book also offers a kitty of the rich experiences that Ms. Ranjana Kumar was able to gain during her tenure as the Chairperson and Managing Director of the Indian Bank. She also feels that a person has to be positive in their outlook no matter whatever negativities come against them. She also goes on to say that one should be grateful to people in life as life had taught that gratitude is very important.

Ms. Kumar concludes the writing by stating these words of wisdom "If the force in our public sector banks is channeled properly, each worker to his or her abilities, the private sector would be left way behind."

The book has been aptly forwarded by the great son of India, Dr. A.P.J. Abdul Kalam, the former President of India - an apt foreward by a team builder to another person of the same fold. Dr. Kalam has aptly mentioned the empowerment skills of the author for defeating the problems she had faced and states that it is the best sign of a good and effective leader. Dr. Kalam has also recommended this book to be used as a reference book in all libraries in the management schools in the country and also to discuss the facts in this book as case study analysis.

An excellent book written in a simple and lucid format just like a story - one cant miss at least a single reading of this book as it is sure to create vibrations in your thoughts as it provides all the effective lessons from real life for not only practicing managers but also to students and budding executives as well.

And it's worth paying for it too- as the royalties from the book is being used for Cancer Institute run by the Womens Indian Association, Chennai. You too can be a part of the team with social commitment.

***

Ms. Ranjana Kumar is the first woman officer in the Public sector banks in the country and has been the brain behind the robust recovery of the Indian Bank where she served as Chairman and managing Director during the crucial crisis period. A person who believes that speed and efficiency in execution is better than paper work, she is presently serving as Vigilance Commissioner, Central Vigilance Commission in the Government of India.

* **Prashob Jacob**, is a research scholar at SCMS - Cochin.

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GlobalEDGE™
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A portal created by the International Business Center at Michigan State University, Global Edge provides links to international business resources across the globe across a wide variety of subject topics.

The Library of Congress Portals to the World
http://www.loc.gov/rr/international/portals.html

The Library of Congress is the oldest library in the United States and also the largest library in the world. Visit the site to find resources organized by country. Sometimes links may not be up-to-date. Even so, it is worth taking the time to explore resources on this site. The Internet Public Library

http://www.ipl.org/div/subject/browse/bus45.00.00/

The Internet Public Library is a non-profit organization committed to providing free reference services to the general public. Founded at the University of Michigan - School of Information, the IPL provides a useful list of international business information sources.

UNData
http://data.un.org/

The United Nations Statistics Division (UNSD) has integrated all United Nations statistics database into a single point of entry. Currently, it combines data from 14 statistical databases offering free access to over 55 million data points. Sources include the International Labor Organization, UNESCO, FAO, UN Trade database and many other sources.

University of Pennsylvania – Guide to Multinational Business Websites
http://gethelp.library.upenn.edu/guides/business/multinationalbusweb.html

The Lippincott library at University of Pennsylvania has prepared a guide to free websites.

VIBES
http://library.uncc.edu/display/?dept=reference&format=open&page=68

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