Arth Anvesan

विज्ञानं ब्रह्म

ARTH ANVESAN

अर्थ अन्वेषण

From Editor's Pen

The current issue of Arth Anvesan covers various emerging aspects of business and economic embracing variety of issues linked with each other in one or the other way, the journal accentuate on the effective management practices and empirical analysis. Comprised with the contributions from various areas of business management and economics, the issue has tried to put in light the various challenges confronted by organisation within and outside the environment.

The composition by Sandeep Kaur and Paramjeet Nanda has evaluated the relative performance of twelve major districts of Punjab in terms of Human Development and Economic growth and the two way link between the both and emphasised on the reinforcement of Human Development induced growth process which can the lift the districts to various cycle category. Using the widely considered representative of India Inc., i.e. Bombay stock exchange Sensitive Index (SENSEX), Sushil Mehta through his contribution on cost of capital of India Inc. has uphold that common stock forms the highest proportion of the capital structure followed by debt with a wide margin. Underlining the criticality of Quality of work life for retention and attraction of well-qualified personnel, Jeevan Jyoti Gupta and Pooja Gupta has made the contribution on the measurement of quality of work life among the non-teaching employees a University. Davinder Kumar Madaan at the same time has revealed the interrelationship of globalisation and foreign direct investment in India and has suggested looking into the limitations in order to improve the position of India in global FDI. With the factor analytical approach, Sanjeev Gupta has narrated the expectations of Indian farmers in the regime of WTO. The present issue of journal wrap up with the study of impact of organisational citizenship behaviour on organisational effectiveness in case of Food Processing Industry by Luxmi and Sulakshna Dwivedi.

Suparn Sharma

Arth Anvesan

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Arth Anvesan

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EDUCATION, HUMAN DEVELOPMENT AND ECONOMIC GROWTH IN PUNJAB: A CASUAL ANALYSIS

Sandeep Kaur, Lecturer,
ICFAI National College, Amritsar
Prof. Paramjit Nanda,
Punjab School of Economics,
GND University, Amritsar

Abstract

The present paper has evaluated the relative performance of 12 major districts of Punjab in terms of HD and EG and examined the two way link between EG and HD for Punjab state at three points of time i.e. 1981, 1991, 2001 and during whole study period (1981, 1991 and 2001). The study revealed that among other states, Punjab is not rich in literacy rate. Bathinda and Sangrur are poor districts in terms of literacy rate, life expectancy and human development index while Ludhiana is the top most district in terms of these indicators. The inter-district variation of Punjab is highest in literacy rate in 2001. As compared to 1981 and 1991, the inter-district variations of all indicators except life expectancy at birth has decreased in 2001 indicating the reduction of inter-district variations in terms of these indicators. The results of convergence and divergence also show that there is a tendency of divergence in life expectancy and a tendency of convergence in literacy rate and per capita net domestic product. Regarding HD induced EG, literacy rate negatively but non-significantly while expectation of life at birth positively but non-significantly affected inter-district variations in EG during the entire study period (1981-2001). For EG induced HD, per capita NDP negatively and significantly affected inter-district variations in literacy rate and positively and non-significantly affected inter-district variations of life expectancy of Punjab during the entire study period (1981 to 2001). The classification of the districts based on their performance on HD and EG reveals that out of 12 districts of Punjab, only four districts have been in the category of lopsided HD and six districts have been in the category of virtuous cycle as per the indicators of HD (HDI, literacy rate and expectation of life at birth) in 2001. The results suggest that policy should be such that HD induced growth process has to be strengthened for lifting the districts to virtuous cycle category.

Since 1990s, human development which has been defined by UNDP as 'enlarging people's choices in a way which enables them to lead longer, healthier and fuller lives' has been considered as the ultimate objective of human activity in place of economic growth. However there exists strong connection between economic growth (EG) and human development (HD). On the one hand, EG provides the resources to permit sustained improvements in quality of labor force (HD). On the other hand, HD is an important contributor to EG. Economic growth (GNP) contributes to HD mainly through allocation of EG among various institutions (households, government, civil society, community organization and other non-governmental organizations (NGOs). The relationship between GNP to HD is stronger if lower is the proportion of population living below the poverty line, society is egalitarian, more expenditure is made by households on HD, higher is the female literacy, more is female control over income, higher proportion of GNP devoted to priority social expenditure by Government and more effective is contribution of social capital including community organizations and other NGOs, while HD affect the economy through enhancing people's capabilities, creativities and productivities. **Health and education** are among the main determinants of the composition and growth of output, exports and income equalities. Relationship between HD and GNP becomes strong if the investment rate is higher, more is egalitarian society and more is appropriate economic policy setting.

Considering this, paper seeks to examine the two-way link between EG and HD for Punjab state during 1981, 1991 and 2001. Paper has been divided into five sections. Section I deals with data base and methodology. Section II evaluates relative performance of Indian states (15) and of districts (12) of Punjab on human development and economic growth and examines whether regional disparities have increased or decreased over time, section III investigates the two way link between EG and HD (viz growth induced HD and HD inducted growth), section IV explores the possibilities of vicious, virtuous cycle, lopsided – EG and lopsided – HD among districts of Punjab state based on their actual performance of HD and EG and Section V gives conclusions and policy implications.

I

Data Base

To study relative performance of districts of Punjab on HD and EG, data on HDI (which has been considered only for 2001) and other dimensions of human well being (literacy rate, expectation of life and per capita income) for 1981, 1991 and 2001 has been collected from Statistical Abstract of Punjab (various issues, Government of Punjab).

Methodology

Relative performance of districts has been examined by ranking districts based on three indicators of human development viz (i) Human Development Index (HDI), (ii) Literacy Rate (LR) and (iii) Expectation of Life at Birth (ELB) and economic growth (Per Capita Domestic Product (PCI)) at three points of time and studied direction of change in ranks during period.

Measures of Convergence

To see nature of change in degree of regional inequality in HD and EG, two measures of convergence (σ and absolute β- convergence) suggested by Barro and Martin (1992) are being considered.

(a) **σ Convergence:** To examine σ convergence, coefficient of variation (CV) of the different indicators has been estimated in the following way:

$$CV_i = \frac{\sigma}{\overline{X}} \times 100$$

CV = Co-efficient of variation of ith variable

σ = Standard deviation of ith variable

$\overline{X}$ = Mean of ith variable

Second Measure: Absolute β convergence has been estimated with the help of following equation.

$$\left[\ln(X_i, t - \ln(X_{i,t-m})\right]/T = \alpha + \beta \ln(X_{i,t-m}) + e_{it}$$

Where $\left[\ln(X_{it}) - \ln(X_{i,t-m})\right]$ is the ith district's annual average growth rate of a variable between the period t and t-m and ln (X_{it}) and ln $(X_{i, t-m})$ at time t and t-m respectively. T is length of time period. If the coefficient on initial level of available bears a statistical significant with negative Sign i.e. $\beta \angle 0$ then there is existence of absolute β convergence. Rejecting the Null Hypothesis of $\beta = 0$ against the alternative of $\beta \angle 0$ implies a negative correlation between the initial level of a variable and its subsequent growth. This signifies that relatively poor performing districts improve most and thus catch up with the rich ones. The convergence equation was estimated by the Ordinary Least Square (OLS) regression method using the data for 12 districts. CROSS – SECTION Data on literacy rate, life expectancy and per capita net domestic product are available for districts with a gap of 10 years (i.e. for 1981, 1991 and 2001). Due to this reason, the convergence equation was estimated with 10 years lag in the explanatory variables. Since the HDI is available for only 2001. Therefore for this indicator, the convergence results have not been estimated.

Regression Analysis: To examine two-way causality between economic growth and education, life expectancy and HDI (for 2001 only) ,simple regression analysis has been used for 12 districts of Punjab for the year 1981, 1991 and 2001 and for a panel of 12 districts of Punjab during the entire study period. (Ghosh, 2006)

Causality running from EG to HD

Ln $(LR)_t = \alpha + \beta$ Ln $(PCI)_{t-2} + E_t$	(1)
Ln $(EL)_t = \alpha + \beta$ Ln $(PCI)_{t-2} + E_t$	(2)
Ln $(HDI)_t = \alpha + \beta$ Ln $(PCI)_{t-2}$	(3)
Ln $(LR)_t = \alpha + \beta$ Ln $(PCI)_{t-2} + \delta_1 D_1 + \delta_2 D_2 + E_t$	(4)

Causality running from HD to EG

Ln $(PCI)_{t+3} = \alpha + \beta$ Ln $(LR)_t + E_t$	(5)
Ln $(PCI)_{t+3} = \alpha + \beta$ Ln $(EL)_t = E_t$	(6)
Ln $(PCI)_{t+3} = \alpha + \beta$ Ln $(HDI)_t + E_t$	(7)
Ln $(PCI)_{t+3} = \alpha + \beta_1$ Ln $(LR_t) + \beta (EL)_t + \delta_1 D_1 + \delta_2 D_2 + E_t$	(8)

D_1 and D_2 are dummy variables

$D_1 = 1$ for 1991

$D_1 = 0$ for 1981 and 2001

$D_2 = 1$ for 2001

$D_2 = 0$ for 1981 and 2001

LR is literacy rate

EL is expectation of life at birth.

HDI is Human development index

PCI_{t-2} is average per capita income over the two years preceding the period t

PCI_{t+3} is average per capita income over the succeeding three years

Ln is natural log.

Equations (1), (2), (5) and (6) have been estimated with the help of simple regression technique for 1981, 1991 and 2001. Since the data of HDI is available only for 2001. Therefore equations (3) and (7) have been estimated only for the year 2001 . Equations (4) and (8) have been estimated with the help of multiple regression technique for a panel (during the entire study period i.e. 1981, 1991 and 2001).

II

Relative Performance of Districts of Punjab on Education, HD and EG

Table 1 shows the data relating to relative performance of districts of Punjab in HDI and other dimension of human well being at different points of times reveals that in terms of HDI, Ludhiana and Roopnagar are the best performing districts in Punjab while Sangrur appears to be worst performing in 2001. Value of HDI ranges from 0.654 to 0.761 in 2001.

In terms of different indicators of HDI, Table shows that in terms of literacy rate (LR), Ludhiana occupied highest position in 1981, Hoshiarpur in 1991 and in 2001; while Bathinda's position is poor in 1981 and Sangrur's in 1991 and in 2001. Literacy rate improved from 40.86 percent in 1981 to 69.66 percent in 2001. Literacy rate varied from 27.72 to 50.6 in 1981, from 45.99 to 72.08 in 1991 and from 60.04 to 81.40 in 2001. In terms of expectations of life at birth (ELB), Ludhiana was the best performing district during the period 1981-2001, while Sangrur was the worst performing district throughout the period 1981-2001. ELB increased marginally from 61.7 years in 1991 to 65.6 years in 2001 in Punjab. ELB ranged from 60.5 to 64.2 years in 1981, from years to 62.8 to 70.5 in 1991 and from 46.8 to 65.2 in 2001.

Performance of districts in terms of per capita Net State Domestic Product (NSDP) shows that highest per capita income was in Ludhiana (Rs. 3524 in 1981, Rs.10910 in 1991 and Rs. 30051 in 2001); in Kapurthala

(Rs. 11179 in 1991) and in Gurdaspur (Rs. 7761 in 1991) was found to be with lowest per capita income district in 1981, 1991 and 2001 (Table 1).

Convergence in HD and EG

(a) α Convergence: α convergence measured in terms of coefficient of variation (CV) of the different indictors across districts given in Table 1 shows that in Punjab, CVs in case of literacy rate has fallen from 20.21 percent in 1981 to 10.72 in 2001 and in case of PCI, it has increased marginally from 10.03 percent in 1981 to 10.21 percent in 2001 indicating inter-district disparities in literacy rate has been falling, while in PCY, disparities have remained at same level. However CV in case of ELB has increased from 1.78 percent in 1981 to 4.64 percent in 2001.

Table 1: Performance of Districts on Education, Human Development and Growth in Punjab

State	Human Development Index	Literary rate (percent)			Expectation of life at Birth (years)			Per capita NDP (PCI) (Rs.)		
	2001	1981	1991	2001	1981	1991	2001	1981-82	1991-92	2001-02
Gurdaspur	0.723 (3)	43.49 (6)	61.83 (6)	74.19 (5)	61.4 (7.5)	67.8 (2)	74.2 (2)	2483 (12)	7761 (12)	21455 (12)
Amritsar	0.700 (7)	41.05 (7)	58.08 (7)	67.85 (8)	62.4 (3)	67.2 (3)	72.0 (3)	2984 (9)	9647 (8)	23475 (9)
Kapurthala	0.707 (6)	44.85 (5)	63.31 (5)	73.56 (6)	60.4 (11.5)	64.5 (9.5)	68.7 (8)	3460 (2)	11179 (1)	27521 (6)
Jalandhar	0.708 (5)	49.18 (3)	68.91 (2)	77.91 (3)	62.3 (4)	64.2 (11)	66.1 (11)	3030 (8)	9376 (10)	25626 (6)
Hoshiarpur	0.718 (4)	50.19 (2)	72.08 (1)	81.40 (1)	60.9 (10)	64.5 (9.5)	68.1 (10)	2731 (11)	8112 (11)	21858 (11)
Roopnagar	0.751 (2)	48.08 (4)	68.15 (3)	78.49 (2)	62.9(2)	66.8 (4)	70.7 (5)	2944 (10)	9552 (4)	24891 (8)
Ludhiana	0.761 (1)	50.60 (1)	67.34 (4)	76.54 (4)	64.2 (1)	70.5 (1)	76.8 (1)	3524 (1)	10910 (2)	30051 (1)
Ferozpur	0.689 (10)	32.29 (10)	48.99 (10)	61.42 (11)	62.1 (5)	66.6 (5)	71.0 (4)	3405 (3)	10395 (5)	24984 (7)
Faridkot	0.698 (8)	33.58 (9)	49.88 (9)	63.34 (9)	61.6 (6)	65.8 (6)	70.1 (6)	3331 (5)	10079 (7)	26238 (5)
Bathinda	0.674 (11)	27.72 (12)	46.41 (11)	61.51 (10)	61.1 (9)	64.7 (8)	68.3 (9)	3055 (7)	10323 (6)	23065 (10)
Sangrur	0.654 (12)	29.60 (11)	45.99 (12)	60.04 (12)	60.4 (11.5)	62.8 (12)	65.2 (12)	3223 (6)	10648 (3)	27375 (4)
Patiala	0.697 (9)	40.45 (5)	57.51 (8)	69.96 (7)	61.4 (7.5)	65.4 (7)	69.5 (7)	3335 (4)	10579 (4)	27665 (2)
Punjab	0.667	40.86	58.51	69.66	61.7			3119	9872	25625
Coefficient of Variation	4.19	20.21	15.85	10.72	1.78	3.10	4.64	10.03	10.72	10.21

Source: Statistical Abstract of Punjab, Govt. of Punjab, various issues (1981, 1991 and 2001). Figures in parenthesis are ranks

(b) β-Convergence:

Table 2 shows that coefficients on initial level of literacy rate (LR) and per capita net state domestic product PCI are negative and statistically significant in all the cases suggesting that there has been a strong tendency of convergence of these indicators. The estimated rate of convergence in literacy rate varies from (-) 2.5 per cent to (-) 3.4 percent per annum and in PCI varies from (-) 1.9 percent to (-) 2.8 percent. On the other hand the co-efficient on the initial level of life expectancy at birth is found to be positive but non-significant during 1981-91 and 1981-2001 and positive but significant during 1991-2001 indicating a tendency of divergence in ELB across the districts. As compared to pre-reform period, rate of convergence in literacy rate has increased from 2.5 percent in 1981-91 to 3.4 percent in 1991-2001 indicating that convergence in literacy rate has improved significantly, while in PCI, convergence has been slow during post-reform period. For ELB, rate of divergence improved from 4.1 percent during 1981-91 to 4.6 percent during 1991-2001 indicating increase in divergence across districts. This indicates gap between rich and poor districts in terms of ELB has increased further.

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Table 2: Evidence on Absolute β convergence

Variable	Period	Constant	Coefficient on initial level	R^2	F
Growth in literacy rate	1981-1991	0.056* (9.171)	- 0.025* (6.536)	0.81	42.73
Growth in literacy rate	1991-2001	0.068* (13.75)	- 0.034* (12.14)	0.94	147.38
Growth in literacy rate	1981-2001	0.053* (16.04)	-0.026* (12.39)	0.94	153.34
Growth in life expectancy	1981-1991	- 0.070 (1.217)	0.041 (1.266)	0.14	1.602
Growth in life expectancy	1991-2001	- 0.082* (4.605)	0.046* (4.753)	0.70	22.59
Growth in life expectancy	1981-2001	-0.064 (1.176)	0.037 (1.228)	0.13	1.51
Growth in per capita net domestic product	1981-1991	0.0411* (1.017)	0.002531* (0.219)	0.005	0.048
Growth in per capita net domestic product	1991-2001	0.142 (2.214)	- 0.0254 (1.577)	0.20	2.486
Growth in per capita net domestic product	1981-2001	0.0701* (2.645)	- 0.00714* (0.937)	0.08	0.878

Source: Based on data given in Table 1

Note: (1) Figures in parenthesis are t values and * denote significant at 5 percent level N= 12.

III

HD Induced EG

Regarding causality running from HD to EG, there is common belief that as people becomes mere healthy, well nourished and educated, they contribute more to economic growth. Increase in earnings is associated with additional years of education with the rate of return varying with the level of education (Schultz, 1988; King and Hill, 1993; Psacharopolous, 1994; Behrman, 1995 and Strauss and Thomas, 1995). In agriculture, evidence also suggests that positive effects of education on productivity among farmers using modern technologies, but less impact as might be expected among those using traditional methods (Welch ,1970; Schultz ,1975 and Rosenzweig, 1995). Trivedi (2002) found that stock of educational capital, represented by secondary school enrolment rate, has a significant positive impact on the steady level of per capita income of India.

Table 3 depicts that literacy rate negatively but non-significantly affected inter district variations in per capita net domestic product in 1981, 1991 and 2001 while life expectancy positively but non-significantly affected inter-district variation in pre capita net domestic product in 1981 and 2001 but negatively in 1991. In 2001, HDI also negatively but non-significantly affected inter district variations in per capita NDP. With the pooled-data, the results show that literacy rate negatively and non-significantly while expectation of life positively affected inter-district variations in economic growth. The coefficient of the dummy variables are found to be positive and significant for economic growth indicating that trends in the literacy rate and life expectancy has not been stable over time.

Table 3: Effect of Human Development on Economic Growth

Year	Constant	Literacy rate	Life expectancy	HDI	D_1	D_2	R^2	F
1981	3.675* (16.44)	- 0.0658 (0.473)					0.02	0.224
	1.243 (0.418)	-	1.299 (0.782)				0.06	0.612
1991	4.569* (12.20)	-0.267 (1.258)					0.14	1.58
	4.152** (1.888)		-0.0295 (0.024)				0.02	0.224
2001	4.673* (9.631)	-0.100 (0.382)					0.2	0.146
	4.775* (4.151)		-0.156 (0.249)				0.006	0.062
	4.490* (15.105)			-0.003 (0.008)			0.06	0.636
1981-2001	3.784* (22.45)	-0.134 (1.276)			0.551* (22.278)	0.951* (30.56)	0.98	885.748
1981-2001	3.543* (3.677)		0.0146 (0.027)		0.529* (22.252)	0.918* 26.567	0.99	842.356
1981-2001	3.440* (3.598)	-0.144 (1.310)	0.201 (0.365)		0.547* (20.028)	0.943* (24.123)	0.98	646.356

Source: Based on data given in Table 2

Note: (1) figures in parenthesis are t values, * and ** respectively denote significant at 5 and 10 percent level.

EG Induced HD

There are empirical studies which provide evidence in favor of the causality running from EG to HD. Morris and Mcalpin (1982) observe a very high degree of correlation between per capita income and components of physical quality of life index across nations. Geeta Rani (1995) found that economic development is an important factor for attaining high human development in India.

Table 4 reports the results of economic growth on HD. Per capita NDP of Punjab negatively but non-significantly affected inter-district variation in literacy rate, life expectancy (except 1981) and HDI. For a pooled data, per capita NDP negatively and significantly affected inter district variations in literacy rate and at the same time per capita NDP positively and non-significantly affected inter-district variations of life expectancy of Punjab. The coefficients of dummies variables are positive and significantly indicating that structure of these variables has under gone significant change.

Thus the results indicate that literacy rate has not contributed towards the economic growth of Punjab, as with increase in education level, unemployment is also increasing. It will have positive impact on the economic growth only when the employment is given to the educated people which will enhance the economic growth of the state. Economic growth has also failed to improve human development.

Table 4: Effect of Economic Growth on Human Development

Year	Dependent variable	Constant	Per Capita Domestic Product	D_1	D_2	R^2	F
1981	Literacy rate	3.409 (1.564)	- 0.522 (0.829)			0.06	0.687
1991	Literacy rate	4.543* (2.609)	-0.712 (1.595)			0.20	2.545
2001	Literacy	3.412** (2.015)	- 0.354 (0.925)			0.08	0.856
1981	Life expectancy	1.712* (9.318)	0.022 (0.427)			0.02	0.18
1991	Life expectancy	1.842* (5.009)	- 0.006 (0.062)			0.01	0.12
2001	Life expectancy	2.246* (3.053)	-0.090 (0.545)			0.03	0.30
2001	HDI	1.283 (1.171)	-0.130 (0.52)			0.03	0.28
1981-2001 (panel)	Literacy rate	3.501* (3.537)	-0.549** (1.918)	0.406* (3.125)	0.771* (2.789)	0.72	26.22
1981-2001	Life expectancy	1.849* (8.867)	-0.017 (0.280)	0.036 (1.300)	0.071 (1.211)	0.70	27.27

Source: Based on data given in Table 1

Note: (1) figures in parenthesis are 't' values, * and ** respectively denote significant at 5 and 10 percent level.

Virtuous/Vicious/Lop Sided Development

The empirical results of two -way causality between economic growth and human development gives rise to the possibility of virtuous or vicious cycles of development with good or bad performance on human development and economic growth reinforcing each other over time. There are also possibilities of lopsided development, with good performance in one dimension but not the other. The districts may be on a mutually reinforcing upward spiral, with high level of human development leading to high economic growth and high economic growth in turn further promoting HD (virtuous cycle). On the other hand, weak HD may result in low EG and consequently poor progress towards HD improvement (vicious cycle). It may be possible that high performance on HD may be achieved without good performance on EG (lopsided HD) and good performance on EG may not be translated into good performance on HD (lopsided – EG). Thus on the basis of actual performance on EG and HD, the districts may be classified into four categories viz, vicious and virtuous cycles, lopsided EG and lopsided HD.

This classification of districts has been represented into 7 figures (1A, 1B, 1C, 2A, 2B, 2C and 3A) for the year 1981, 1991 and 2001. The districts wise literacy rate and life expectancy for 1981, 1991 and 2001 and Human Development index data for 2001 are plotted on y-axis against the average per capita net domestic product plotted on X-axis. The vertical and horizontal lines dividing the figures into four quadrants represent the average performance of the state Punjab as a whole. North-east quadrant represents the virtuous cycle and the south west the vicious one, the south east and the north-west, respectively represents the lopsided EG and lopsided HD categories. The movements of the districts across categories can be learned by observing their movements across quadrants over time.

The classification of the districts based on their actual achievement in HD and EG is reported in Table 5. As per the achievements in literacy rate and economic growth, it can be seen that Kapurthala, Jalandhar, Ludhiana and Patiala were in the category of virtuous through out the study period. Gurdaspur and Hoshiarpur remained in the category of lopsided HD; Bathinda was in the vicious cycle in 1981, but moved to the lopsided EG in 1991 and to the virtuous cycle in 2001. Ferozpur and Faridkot were on the category of lopsided economic growth in 1981 and 1991 but moved to the virtuous cycle in 2001. Roopnagar could not maintain the virtuous cycle in 2001 and moved to lopsided HD in 2001.

Regarding achievement in terms of expectation of life, Gurdaspur was in the category of lopsided HD and Ludhiana, Faridkot and Patiala were in the category of virtuous cycle through out the study period. Sangrur was in the category of lopsided EG through out the study period and Kapurthala moved to the virtuous cycle in 1991 and 2001 from the lopsided EG (1981). Hoshiarpur was in the category of vicious cycle in 1981 but moved to lopsided HD in 1991 and 2001. Bathinda also moved to the virtuous cycle in 1991 and 2001 from lopsided HD (1981). Amritsar moved to lopsided HD in 2001 from virtuous cycle (1981 and 1991) and Jalandhar moved to lopsided EG (2001) from virtuous cycle (1981 and 1991). As per the achievement in HDI, Kapurthala, Jalandhar, Ludhiana, Ferozpur, Faridkot and Patiala were in category of virtuous cycle in 2001. Gurdaspur, Amritsar Hoshiarpur and Roopnagar were in the category of lopsided HD. Bathinda was in the border line between virtuous and lopsided EG and Sangrur was in the category of lopsided EG.

Thus from the above categorical analysis as per the all indicators of HD, it is clear that Kapurthala, Ludhiana, Ferozpur, Faridkot and Patiala were in the category of virtuous cycle in 2001. Gurdaspur, Amritsar, Hoshiarpur and Roopnagar were on the category of lopsided HD in 2001. The district namely Sangrur was in the category of lopsided EG in 2001. As per the life expectancy, Jalandhar also came in the category of lopsided EG in 2001. Bathinda was in the border line between virtuous and lopsided EG.

The districts namely Bathinda and Sangrur have achieved the economic growth without human development. For lifting the districts from lopsided economic growth to virtuous cycles, HD-induced growth process has to be strengthened by allocating more resources to social sector, especially education and health. This will result in economic growth of the state as well as decrease in inter-district variations of the income and in human development indicators.

Figure1: Virtuous, Vicious and Lopsided Performance of Districts as per Literacy Rate
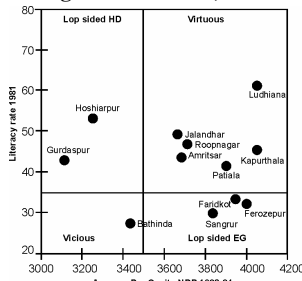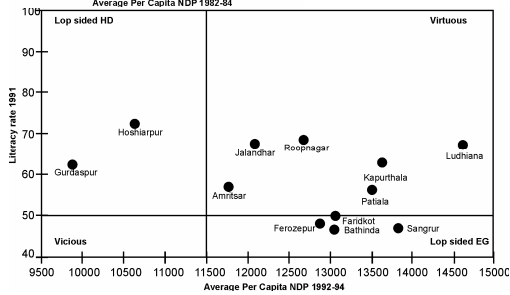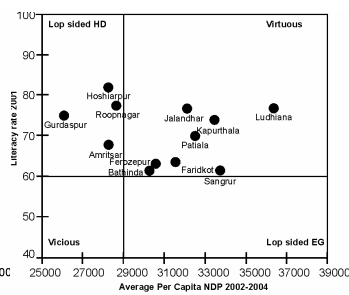

Fig. 1A

Fig. 1B

Fig. 1C

Figure 2: Virtuous, Vicious and Lopsided Performance of Districts as per Expectancy of Life at Birth
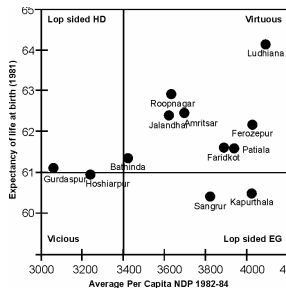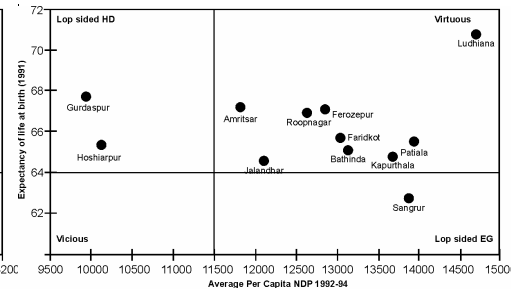

Fig. 2A

Fig. 2B

Fig. 2C

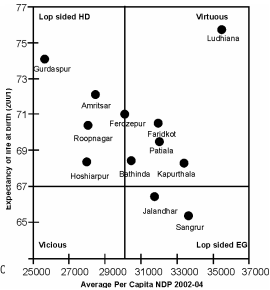**Figure 3A: Virtuous, Vicious and Lopsided Performance of Districts as per Human Development Index**

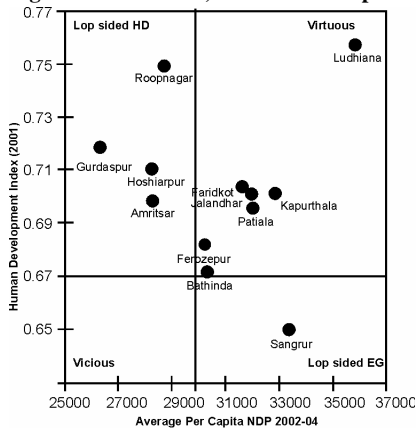| District	Literacy Rate			Life Expectancy Index			Human Development Index
	1981	1991	2001	1981	1991	2001	2001
Gurdaspur	Lopsided HD	Lopsided HD	Lopsided HD	Vicious / Lopsided HD	Lopsided HD	Lopsided HD	Lopsided HD
Amritsar	Virtuous	Virtuous	Lopsided HD	Virtuous	Virtuous	Lopsided HD	Lopsided HD
Kapurthala	Virtuous	Virtuous	Virtuous	Lopsided EG	Virtuous	Virtuous	Virtuous
Jalandhar	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Lopsided EG	Lopsided HD
Hoshiarpur	Lopsided HD	Lopsided HD	Lopsided HD	Vicious	Lopsided HD	Lopsided HD	Lopsided HD
Roopnagar	Virtuous	Virtuous	Lopsided HD	Virtuous	Virtuous	Lopsided HD	Lopsided HD
Ludhiana	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous
Ferozepur	Lopsided EG	Lopsided EG	Virtuous	Virtuous	Virtuous	Lopsided HD / Virtuous	Virtuous
Faridkot	Lopsided EG	Lopsided EG	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous
Bathinda	Vicious	Lopsided EG	Virtuous	Lopsided HD Virtuous /	Virtuous	Virtuous	Virtuous/lopsided EG
Sangrur	Lopsided EG	Lopsided EG	Virtuous	Lopsided EG	Lopsided EG	Lopsided EG	Lopsided EG
Patiala	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous	Virtuous

Source: Based on the figures (1a, 1b, 1c, 2a, 2b, 2c and 3a)

V

Thus the study reveals that among other states, Punjab is not rich in literacy rate. In Punjab, Bathinda and Sangrur are the poor districts in terms of literacy rate, life expectancy and human development index while Ludhiana is the top most district in terms of these indicators. Inter-district variation of Punjab is highest in literacy rate in 2001. As compared to 1981, the inter-district variation of all indicators except life expectancy at birth has decreased indicating the reduction of inter-district variations. The results of convergence and divergence also show that there is a tendency of divergence in life expectancy and a tendency of convergence in literacy rate and per capita net domestic product. There is a need to examine the movement from vicious to HD-lopsided, from HD-lopsided to virtuous or of taking the direct route from vicious to virtuous. No district in Punjab has used the direct path (vicious to virtuous). To move from vicious to HD lopsided, one needs to strengthen the links from EG to HD, which may be achieved by adopting some of the following policies:

i. Providing extensive opportunities for the unemployed.
ii. Applying more employment intensive pattern of output.
iii. Leading to a shift in resource allocation towards education and health services.

Movement from HD lopsided to promote EG requires strengthening the link in HD to EG by adopting some of the following policies:

i. Improving the distribution of income.
ii. Taking advantage of an improved HD to promote economic growth through policy reforms.
iii. Increasing the investment rate.

As per the literacy rate, Amritsar and Roopnagar came in the category of lopsided HD in 2001 from virtuous cycle in 1981 and 1991. These districts slipped back into HD lopsidedness, leading to unstable growth. EG along with HD must be strengthened before a virtuous cycle can be attained. Policy reforms which focus only on economic growth are unlikely to succeed. Therefore, for sustaining economic growth, HD must be emphasized with economic reforms.

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COST OF CAPITAL OF INDIA INC.

Sushil Kumar Mehta
Asstt. Professor,
College of Management,
Shri Mata Vaishno Devi University, Katra (J& K)

Abstract

The concept of cost of capital, though very important in financial decision making, is not much used by companies in India as it is perceived to be too academic and impractical. Moreover there is no consensus on the method of calculating cost of capital. The present study is an attempt to make the concept more practical so that it can be used by India Inc. As Bombay Stock Exchange's Sensitive Index (SENSEX) is widely considered as representative of India Inc., its thirty constituent companies, excluding the three banks, as on 28/07/2008 have been considered as sample. The secondary data has been used for analysis. The reference period for the study is five years ranging from 2003-04 through 2007-08. The study reveals that common stock forms the highest proportion of the capital structure followed by debt with a wide margin. Consistent decreasing trend has been observed in case of cost of equity capital and so also the cost of debt has been more or less decreasing. Similar to cost of equity, weighted average cost of capital is also showing consistent decreasing trend. No company could maintain the position of lowest cost of capital throughout the period of study except for Ranbaxy Laboratories Ltd. for two years of study. Similarly Tata steel has been the company with the highest weighted average cost of capital during the initial four years of study and Oil and Natural Gas Corporation Ltd. during the last year of study.

Introduction:

The cost of capital is a central concept in financial management linking the investment and financing decisions. It provides a benchmark to measure the value of investment proposal and thus carries out the function of accept-reject criterion. As an operational criterion, the cost of capital is linked to the firm's objective of value maximization. The accept – reject rule demands that a firm should invest in only such opportunities that assure a rate of return greater than the cost of capital. In this sense, it is defined as the minimum rate of return that a firm must earn on its investment for the market value of the firm to remain unchanged.

Despite the considerable importance of cost of capital in terms of its utility as accept – reject criterion, it is perhaps the most contentious topic in financial management. There are changeable opinions as to how this can be measured. The weighted average cost of capital is a technique that measures the required return in terms of the individual components of the firm's capital structure. The cost of debt component and the return on each equity component are separately identified with a weighted value. By adding together each weighted component, the overall required return can be computed. Cost of Debt and Preference share capital can be computed fairly accurately, but the cost of equity capital is the most difficult and controversial cost to measure.

In a survey conducted by Prasanna Chandra of the Chief finance executives of twenty large sized business undertakings, representing a wide cross-section of industries, as to how they compute the cost of capital, it was revealed that several errors characterize the practical application of this important concept. The concept of cost of capital is considered too academic or impractical. The cost of capital is often considered equal to the dividend rate or return on equity. Keeping in view these facts, the main focus of this research paper is to give a practical orientation to this academic concept.

Review of Literature:

In one of the studies related to the cost of capital McGowan, Tessema, and Collier (2004) determined the extent to which cost of capital differs across companies in different countries. The cost of capital for five companies in the soft drink industry and seven companies in the automobile industry were compared and contrasted. It was found that the weighted average cost of capital for the four largest companies in the soft drink industry are more similar and the weighted cost of capital for the seven companies in the automobile industry are less similar.

A good number of studies have been carried out relating to the determinants of the cost of capital. In one of such studies Goldberg, Godwin and Duchac (2001) listed three types of factors affecting the cost of capital- firm specific factors, liquidity factors and market segmentation factors. Firm specific factors are factors such as the risk characteristics of the domestic stock market, the firm's industry, and the firm's capital structure. Liquidity factors relate to the liquidity of both the domestic stock market and the international market for the stock. Market segmentation relates to barriers that separate the domestic stock market from the global stock market.

Another study by Doppegieter, Mazhar Ul Islam and Zoller (2004) demonstrated possible linkages between intangible assets and a firm's cost of capital. The study highlighted the fact that accounting-driven information distorts the market perception of the true impact of intangible assets. Market values of equity may not fully incorporate intangible assets. As the cost of capital is a weighted average, the market-driven weight of equity may be incorrect due to inadequate assessment of a firm's intangible assets.

Few studies also show the effect of taxes, leverage and capital structure on the cost of capital. Modigliani and Miller (1958) established that in the nonexistence of taxes and transactions costs, firm value and the weighted average cost of capital are unrelated to capital structure. Keeping the average cost of capital invariable, they illustrate that the cost of equity includes a financial risk premium that is positively linked to the firm's debt-to-equity ratio. With corporate taxes, Modigliani and Miller (1963) found that the value of the tax benefit provided by the interest expense subtraction improves firm value and explain that this tax benefit decreases the leverage-linked premium in the cost of equity capital. Miller (1977) incorporates the result of personal level taxes into the analysis. He suggests that individual investors will require a greater pretax return on debt to balance the higher personal tax

on interest income. In equilibrium, the investor level tax shortcoming of debt may completely make up for the corporate tax benefit, making capital structure inappropriate. Another study by Fama and French (1998) examine whether the tax advantage of leverage improves firm value, but find the contrary effect and conclude that leverage brings down the firm value.

There are also studies on the relation between information quality and the cost of equity capital. Botosan (1997) shows that more disclosure is linked to a lower cost of equity capital for firms with low analyst liking. She took a sample of 122 manufacturing firms, and measured disclosure as the quantity of voluntary disclosure provided in the firms' 1990 annual reports. Leuz and Verrecchia (2000) report that German firms that shift from German Generally Accepted Accounting Principles (GAAP) to International Accounting Standards (IAS) or U.S. GAAP have a lower information asymmetry element of their equity cost-of-capital. Baber and Gore (2005) find that municipal bond yields are 15 basis points lower in states that have mandated the implementation of GAAP disclosure for municipal bond issuers and that the level of the yield reduction is increasing in proxies for information asymmetry.

One thing is quite clear from the before mentioned studies that despite a lot of studies being carried out in the foreign countries, such studies are conspicuous by their absence in India. Keeping in view this important fact the present study has been carried out to achieve the following objectives:

1) To determine the specific cost and the weighted average cost of capital of India Inc.
2) To determine the capital structure of India Inc.

Research Methodology:

It is a descriptive study discussing the cost of capital and capital structure of representative companies of India Inc. As Bombay Stock Exchange's Sensitive Index (SENSEX) is widely considered as representative of India Inc., its thirty constituent companies, excluding the three banks, as on 28/07/2008 have been considered as sample. The secondary data has been used for analysis. The reference period for the study is five years ranging from 2003-04 through 2007-08.

The weighted average cost of capital (WACC) can be expressed as the following equation:

$$WACC = (\%D_{mkt})(K_D)(1\text{-}T) + (\%PS_{mkt})(K_{PS}) + (\%CS_{mkt})(K_E)$$

where　　K_D = before tax cost of debt

　　　　K_{PS} = Cost of preference stock

　　　　K_E = Required return on common stock

　　　　1-T = one minus corporate tax rate

　　　　$\%D_{mkt}$, $\%PS_{mkt}$, and $\%CS_{mkt}$ = percentages in the capital structure of Debt, preferred stock, and common stock, respectively.

In order to get the percentages of debt, preferred stock and equity, the total value of the firm in the market place must be known. This can be determined by adding the each component as follows:

$$V_{mkt} = D_{mkt} + PS_{mkt} + CS_{mkt}$$

As the secondary market for Debt and preference stock is not much developed, the book values have been considered for calculating market values. The market value of common stock is calculated as follows:

CS_{mkt} = Market price of one share of common stock X no. of outstanding shares

K_D = Interest paid / D_{mkt}

In some writings, short term debt is omitted in the discussion of capital structure. If, however, short term debt is used as a source of permanent financing over a period of time, it should be used in capital structure analyses. Since such debt is commonly rolled over and is, therefore, source of permanent financing, the present study also considers sundry creditors in addition to long term debt as part of value of debt.

K_{PS} = Preference dividend / PS_{mkt}

According to Earnings approach, the required return on common stock is calculated as follows:

K_E = Earnings per share / Market price per share

The data related to various variables as per the before mentioned equations have been taken from the very reliable PROWESS Database of Centre for Monitoring Indian Economy, New Delhi. Microsoft Excel has been used for all the calculations.

Results and Discussions:

Table 1 depicts specific and weighted average cost of capital (WACC) of selected companies during the year 2003-04. The average tax adjusted cost of debt is 2.92%. Only one of the selected companies, i.e. Sterlite Industries (India) Ltd., had issued preference shares. Cost of preference share capital in the case is observed to be 0.32%. The average cost of equity capital is found to be 7.33%. Equity capital forms the highest proportion of the capital structure. The average proportion of equity capital in the capital structure is 81.80%. This is followed by debt which forms 18.20% of the capital structure. Preference shares form the lowest proportion (0.05%) of the capital structure. On an average the WACC is 7.18%. The WACC varies from 3.15% in case of Wipro Ltd. to 15.75% in case of Tata Steel Ltd.

Table 1: Cost of Capital of Selected Companies in 2003-04

Sr. No.	Company	Tax adjusted cost of Debt	Proportion of Debt	Cost of preference shares	Proportion of preference share capital	Cost of Equity	Proportion of Equity Capital	Weighted Average Cost of Capital
1	ACC	5.79%	4.12%			5.48%	95.88%	5.49%
2	Bharati Airtel Ltd.	3.11%	0.43%					
3	Bharat Heavy Electricals Ltd.	1.58%	2.30%			9.17%	97.70%	9.00%
4	DLF Ltd.	1.04%	100.00%				0.00%	
5	Grasim Industries Ltd.	4.30%	3.73%			11.66%	96.27%	11.39%
6	Hindalco Industries Ltd.	3.77%	3.49%			9.09%	96.51%	8.91%
7	Hindustan Unilever Ltd.	1.48%	0.91%			4.57%	99.09%	4.54%
8	HDFC Ltd.	5.31%	18.84%			6.89%	81.16%	6.60%
9	Infosys Technologies Ltd.		0.15%			4.39%	99.85%	4.39%
10	ITC Ltd.	0.65%	1.35%			7.48%	98.65%	7.38%
11	Jaiprakash Associates Ltd.	5.33%	100.00%				0.00%	
12	Larsen & Toubro Limited	1.80%	3.57%			5.89%	96.43%	5.74%
13	Mahindra & Mahindra Ltd.	3.97%	4.63%			10.07%	95.37%	9.79%
14	Maruti Suzuki India Ltd	3.56%	0.86%			5.63%	99.14%	5.61%
15	NTPC Ltd.	6.63%	100.00%				0.00%	
16	ONGC Ltd.	0.22%	1.50%			10.51%	98.50%	10.35%
17	Ranbaxy Laboratories Ltd.	1.43%	0.28%			4.59%	99.72%	4.58%
18	Reliance Communications Ltd.							
19	Reliance Industries Ltd.	3.81%	4.88%			8.83%	95.12%	8.59%
20	Reliance Infrastructure Ltd.	1.80%	3.44%			5.11%	96.56%	5.00%
21	Satyam Computer Services Ltd.	0.00%	0.19%			6.84%	99.81%	6.82%
22	Sterlite Industries (India) Ltd.	4.01%	5.66%	0.32%	0.05%	4.32%	94.29%	4.30%
23	Tata Consultancy Services Limited	0.05%	100.00%				0.00%	
24	Tata Motors Ltd.	1.69%	2.96%			7.86%	97.04%	7.68%
25	Tata Power Company Ltd.	7.71%	5.03%			13.25%	94.97%	12.97%
26	Tata Steel Ltd.	3.02%	4.75%			16.38%	95.25%	15.75%
27	Wipro Ltd.	0.86%	0.12%			3.15%	99.88%	3.15%
	Average	**2.92%**	**18.20%**	**0.32%**	**0.05%**	**7.33%**	**81.80%**	**7.18%**

Table 2 presents specific and weighted average cost of capital of selected companies during the year 2004-05. The average tax adjusted cost of debt is 2.52%. Cost of preference share capital in the case is found to be 1.01%. The average cost of equity capital is found to be 7.15%. Equity capital forms the highest proportion (79.21%) of the capital structure. This is followed by debt which forms 20.78% of the capital structure. Preference shares form the lowest proportion (0.25%) of the capital structure. On an average the WACC is 6.14%. The WACC varies from 2.60% in case of Infosys Technologies Ltd. to 15.19% in case of Tata Steel Ltd. So Tata Steel Ltd. happens to be the company with highest cost of capital in 2004-05 too.

Table 2: Cost of Capital of Selected Companies in 2004-05

Sr. No.	Company	Tax adjusted cost of Debt	Proportion of Debt	Cost of preference shares	Proportion of preference share capital	Cost of Equity	Proportion of Equity Capital	Weighted Average Cost of Capital
1	ACC	5.22%	24.13%			6.73%	75.87%	6.37%
2	Bharati Airtel Ltd.	2.48%	19.92%			3.81%	80.08%	3.55%
3	Bharat Heavy	1.88%	14.60%			6.31%	85.40%	5.66%
4	DLF Ltd.	3.12%	14.88%				85.12%	
5	Grasim Industries	3.62%	19.70%			8.88%	80.30%	7.84%
6	Hindalco Industries	2.56%	31.74%			11.90	68.26%	8.94%
7	Hindustan Unilever	2.93%	10.56%			4.00%	89.44%	3.88%
8	HDFC Ltd.	4.33%	69.01%			6.30%	30.99%	4.94%
9	Infosys		0.61%			2.61%	99.39%	2.60%
10	ITC Ltd.	1.58%	7.08%			5.34%	92.92%	5.07%
11	Jaiprakash	3.78%	56.65%			7.59%	43.35%	5.43%
12	Larsen & Toubro	1.32%	31.93%			9.05%	68.07%	6.59%
13	Mahindra &	1.01%	28.09%			9.05%	71.91%	6.79%
14	Maruti Suzuki India	2.72%	6.58%			6.95%	93.42%	6.67%
15	NTPC Ltd.	4.24%	21.89%			8.54%	78.11%	7.60%
16	ONGC Ltd.	0.52%	4.10%			11.74	95.90%	11.28%
17	Ranbaxy	1.30%	3.53%			2.72%	96.47%	2.67%
18	Reliance							
19	Reliance Industries	3.83%	31.09%			10.68	68.91%	8.55%
20	Reliance	1.69%	31.37%			4.69%	68.63%	3.75%
21	Satyam Computer	0.33%	1.68%			6.48%	98.32%	6.38%
22	Sterlite Industries	4.08%	30.75%	1.01%	0.25%	4.14%	69.00%	4.12%
23	Tata Consultancy	1.36%	1.12%			3.62%	98.88%	3.60%
24	Tata Motors Ltd.	1.27%	22.72%			7.79%	77.28%	6.31%
25	Tata Power	3.97%	34.38%			7.91%	65.62%	6.56%
26	Tata Steel Ltd.	2.57%	21.34%			18.61	78.66%	15.19%
27	Wipro Ltd.	1.23%	0.84%			3.30%	99.16%	3.28%
	Average	**2.52%**	**20.78%**	**1.01%**	**0.25%**	**7.15%**	**79.21%**	**6.14%**

Table 3 portrays specific and weighted average cost of capital of selected companies during the year 2005-06. The average tax adjusted cost of debt is 2.20%. Cost of preference share capital in the case is again found to be 1.01%. The average cost of equity capital is reduced to 6.26%. Equity capital forms the highest proportion (82.45%) of the capital structure. This is followed by debt which forms 17.55% of the capital structure. Preference shares form the lowest proportion (0.17%) of the capital structure. On an average the WACC is 5.55%. The WACC happens to be lowest (1.30%) in case of Ranbaxy Laboratories Ltd. and highest (13.85%) in case of Tata Steel Ltd. again.

Table 3: Cost of Capital of Selected Companies in 2005-06

Sr. No.	Company	Tax adjusted cost of Debt	Proportion of Debt	Cost of preference shares	Proportion of preference share capital	Cost of Equity	Proportion of Equity Capital	Weighted Average Cost of Capital
1	ACC	4.64%	12.05%			3.91%	87.95%	4.00%
2	Bharati Airtel Ltd.	1.82%	13.71%			3.46%	86.29%	3.23%
3	Bharat Heavy Electricals Ltd.	1.15%	9.98%			5.54%	90.02%	5.10%
4	DLF Ltd.	2.91%	32.16%				67.84%	
5	Grasim Industries Ltd.	2.72%	18.33%			7.09%	81.67%	6.29%
6	Hindalco Industries Ltd.	2.30%	28.95%			10.21	71.05%	7.92%
7	Hindustan Unilever Ltd.	0.66%	5.89%			3.20%	94.11%	3.05%
8	HDFC Ltd.	4.26%	64.95%			4.98%	35.05%	4.51%
9	Infosys Technologies Ltd.		0.50%			3.48%	99.50%	3.46%
10	ITC Ltd.	0.48%	3.99%			4.17%	96.01%	4.03%
11	Jaiprakash Associates Ltd.	4.40%	44.89%			11.44	55.11%	8.28%
12	Larsen & Toubro Limited	1.77%	20.60%			4.50%	79.40%	3.94%
13	Mahindra & Mahindra Ltd.	0.93%	15.45%			5.25%	84.55%	4.58%
14	Maruti Suzuki India Ltd	1.92%	4.19%			7.21%	95.81%	6.99%
15	NTPC Ltd.	4.23%	21.26%			7.86%	78.74%	7.09%
16	ONGC Ltd.	0.87%	2.40%			9.56%	97.60%	9.35%
17	Ranbaxy Laboratories Ltd.	1.80%	9.01%			1.25%	90.99%	1.30%
18	Reliance Communications Ltd.							
19	Reliance Industries Ltd.	2.18%	25.66%			9.20%	74.34%	7.40%
20	Reliance Infrastructure Ltd.	3.07%	28.90%			5.92%	71.10%	5.10%
21	Satyam Computer Services	0.68%	1.77%			6.50%	98.23%	6.39%
22	Sterlite Industries (India) Ltd.	2.94%	21.79%	1.01%	0.17%	5.18%	78.03%	4.68%
23	Tata Consultancy Services	0.46%	1.18%			3.81%	98.82%	3.77%
24	Tata Motors Ltd.	1.75%	20.83%			7.14%	79.17%	6.01%
25	Tata Power Company Ltd.	4.06%	27.95%			6.52%	72.05%	5.83%
26	Tata Steel Ltd.	2.36%	19.30%			16.60	80.70%	13.85%
27	Wipro Ltd.	0.64%	0.53%			2.60%	99.47%	2.59%
	Average	**2.20%**	**17.55%**	**1.01**	**0.17%**	**6.26**	**82.45%**	**5.55%**

Table 4 presents specific and weighted average cost of capital of selected companies during the year 2006-07. The average tax adjusted cost of debt is reduced to 2.11%. The average cost of equity capital has further reduced to 5.45%. Equity capital forms the highest proportion (82.20%) of the capital structure. This is followed by debt which forms 17.80% of the capital structure. The preference share has vanished from the capital structure. On an average the WACC is 4.88%. The WACC happens to be lowest (2.30%) in case of Ranbaxy Laboratories Ltd. and highest (10.41%) in case of Tata Steel Ltd.

Table 4: Cost of Capital of Selected Companies in 2006-07

Sr. No.	Company	Tax adjusted cost of Debt	Proportion of Debt	Cost of preference shares	Proportion of preference share capital	Cost of Equity	Proportion of Equity Capital	Weighted Average Cost of Capital
1	ACC	3.83%	8.56%			6.17%	91.44%	5.97%
2	Bharati Airtel Ltd.	1.48%	10.94%			4.08%	89.06%	3.79%
3	Bharat Heavy Electricals Ltd.	0.79%	6.05%			4.41%	93.95%	4.19%
4	DLF Ltd.	4.77%	51.21%				48.79%	
5	Grasim Industries Ltd.	2.00%	15.12%			6.93%	84.88%	6.18%
6	Hindalco Industries Ltd.	2.24%	32.46%			12.75	67.54%	9.34%
7	Hindustan Unilever Ltd.	0.36%	4.71%			3.00%	95.29%	2.88%
8	HDFC Ltd.	5.06%	61.57%			4.39%	38.43%	4.80%
9	Infosys Technologies Ltd.		0.29%			2.76%	99.71%	2.75%
10	ITC Ltd.	0.23%	3.66%			4.03%	96.34%	3.89%
11	Jaiprakash Associates Ltd.	2.92%	33.77%			3.58%	66.23%	3.36%
12	Larsen & Toubro Limited	0.86%	12.42%			2.58%	87.58%	2.37%
13	Mahindra & Mahindra Ltd.	0.43%	16.33%			5.46%	83.67%	4.64%
14	Maruti Suzuki India Ltd	2.13%	5.75%			6.24%	94.25%	6.00%
15	NTPC Ltd.	4.86%	20.56%			6.36%	79.44%	6.05%
16	ONGC Ltd.	0.33%	2.33%			8.35%	97.67%	8.17%
17	Ranbaxy Laboratories Ltd.	1.29%	19.64%			2.55%	80.36%	2.30%
18	Reliance Communications Ltd.	2.71%	20.40%			3.36%	79.60%	3.22%
19	Reliance Industries Ltd.	2.20%	21.59%			7.42%	78.41%	6.30%
20	Reliance Infrastructure Ltd.	2.64%	37.76%			6.49%	62.24%	5.03%
21	Satyam Computer Services	1.51%	1.47%			4.65%	98.53%	4.60%
22	Sterlite Industries (India) Ltd.	3.87%	12.40%			3.52%	87.60%	3.56%
23	Tata Consultancy Services	0.30%	0.92%			3.38%	99.08%	3.35%
24	Tata Motors Ltd.	1.97%	19.88%			5.87%	80.12%	5.09%
25	Tata Power Company Ltd.	4.22%	28.76%			5.51%	71.24%	5.14%
26	Tata Steel Ltd.	1.31%	30.66%			14.43	69.34%	10.41%
27	Wipro Ltd.	0.61%	1.32%			3.57%	98.68%	3.53%
	Average	**2.11%**	**17.80%**			**5.45**	**82.20%**	**4.88%**

Table 5 depicts specific and weighted average cost of capital of selected companies during the year 2007-08. The average tax adjusted cost of debt is found to 2.46%. The average cost of equity capital has reduced to 4.81%. Equity capital forms the highest proportion (85.86%) of the capital structure. This is followed by debt whose weightage in the capital structure has reduced to 13.88%. On an average the WACC has reduced to 4.49%. The WACC happens to be lowest (1.79%) in case of Jaiprakash Associates Ltd. and highest (7.43%) in case of Oil and Natural Gas Corporation Ltd.

Table 5: Cost of Capital of Selected Companies in 2007-08

Sr. No.	Company	Tax adjusted cost of Debt	Proportion of Debt	Cost of preference shares	Proportion of preference share capital	Cost of Equity	Proportion of Equity Capital	Weighted Average Cost of Capital
1	ACC	3.74%	7.87%			6.92%	92.13%	6.67%
2	Bharati Airtel Ltd.	1.26%	8.26%			3.76%	91.74%	3.56%
3	Bharat Heavy Electricals Ltd.	0.51%	4.15%			2.75%	95.85%	2.66%
4	DLF Ltd.	7.19%	6.15%			1.90%	93.85%	2.22%
5	Grasim Industries Ltd.	1.70%	13.69%			7.89%	86.31%	7.04%
6	Hindalco Industries Ltd.	3.96%	33.30%			11.03	66.70%	8.67%
7	Hindustan Unilever Ltd.	0.71%	6.16%			3.76%	93.84%	3.57%
8	HDFC Ltd.	5.37%	51.38%			3.72%	48.62%	4.57%
9	Infosys Technologies Ltd.		0.54%			4.23%	99.46%	4.21%
10	ITC Ltd.	0.40%	4.19%			4.62%	95.81%	4.44%
11	Jaiprakash Associates Ltd.	2.63%	19.54%			1.59%	80.46%	1.79%
12	Larsen & Toubro Limited	0.75%	11.87%			2.52%	88.13%	2.31%
13	Mahindra & Mahindra Ltd.	1.45%	20.93%			5.19%	79.07%	4.40%
14	Maruti Suzuki India Ltd	2.36%	6.46%			6.84%	93.54%	6.55%
15	NTPC Ltd.	4.20%	16.60%			4.64%	83.40%	4.57%
16	ONGC Ltd.	0.77%	2.28%			7.59%	97.72%	7.43%
17	Ranbaxy Laboratories Ltd.	1.67%	21.57%			4.20%	78.43%	3.65%
18	Reliance Communications Ltd.	3.21%	17.73%			2.12%	82.27%	2.31%
19	Reliance Industries Ltd.	1.55%	15.52%			4.60%	84.48%	4.13%
20	Reliance Infrastructure Ltd.	3.95%	19.32%			3.45%	80.68%	3.55%
21	Satyam Computer Services	0.78%	2.21%			5.75%	97.79%	5.64%
22	Sterlite Industries (India) Ltd.	3.29%	7.02%			1.92%	92.98%	2.02%
23	Tata Consultancy Services	0.19%	1.41%	0.08%	0.09%	4.01%	98.49%	3.95%
24	Tata Motors Ltd.	2.10%	28.33%			7.34%	71.67%	5.85%
25	Tata Power Company Ltd.	5.16%	15.13%			4.15%	84.87%	4.30%
26	Tata Steel Ltd.	2.94%	26.80%	0.41%	6.90%	9.19%	66.31%	6.91%
27	Wipro Ltd.	2.11%	6.43%			4.32%	93.57%	4.18%
	Average	**2.46%**	**13.88%**	**0.24%**	**3.50%**	**4.81**	**85.86%**	**4.49%**

Chart1 presents specific and weighted average cost of capital of India Inc. over different years. Tax adjusted cost of debt shows a decreasing trend from 2003-04 through 2006-07. Cost of equity capital is showing a consistent decreasing trend throughout the study period. No clear trend is observed in case of preference share capital. Consistent decreasing trend is observed in case of weighted average cost of capital, too.
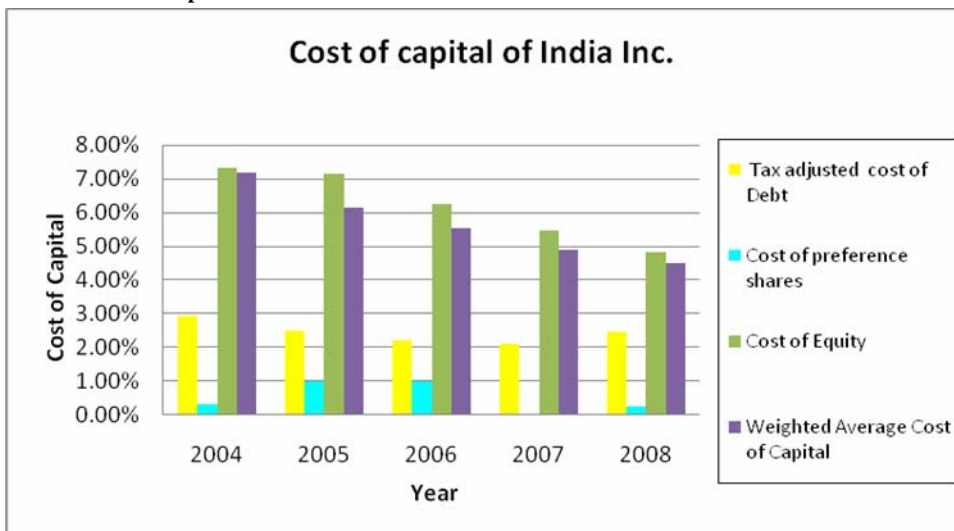
Chart 1: Cost of capital of India Inc.

Chart2 presents the proportion of different components of capital structure of India Inc. in different years. Equity has formed the largest component of the capital structure followed by debt with a wide margin. Preference shares have formed negligible proportion of capital structure in the initial three years i.e. from 2003-04 through 2005-06. Thereafter it vanished for one year i.e. 2006-07 and again resurfaced in 2007-08.

Chart 2: Capital Structure of India Inc.
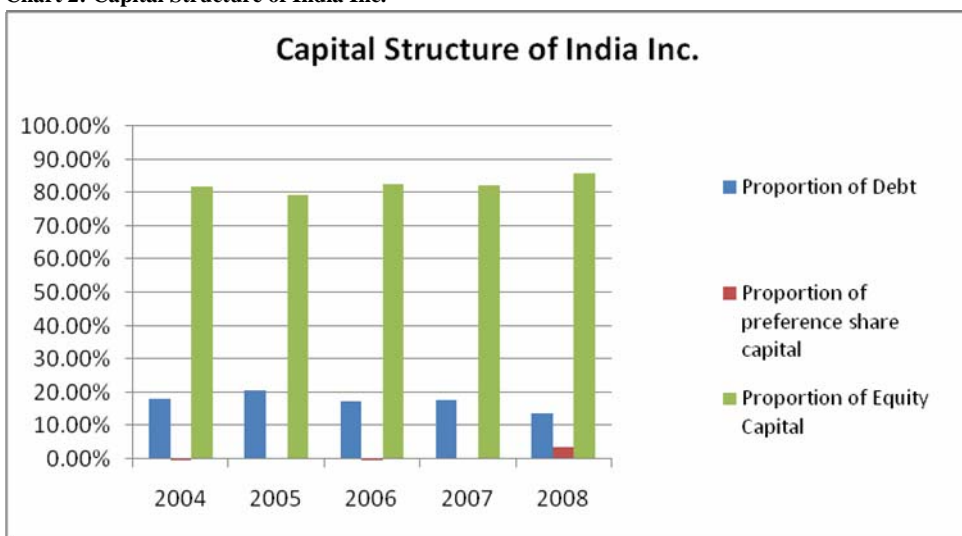
Conclusion:

It can be concluded from the study that common stock forms the highest proportion of the capital structure followed by debt with a wide margin. Consistent decreasing trend can be observed in case of cost of equity capital and so also the cost of debt has been more or less decreasing. Similar to cost of equity, weighted average cost of capital is also showing consistent decreasing trend. No company could maintain the position of lowest cost of capital throughout the period of study except for Ranbaxy Laboratories Ltd. for two years of study. Similarly Tata steel has been the company with the highest weighted average cost of capital during the initial four years of study and Oil and Natural Gas Corporation Ltd. during the last year of study.

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QUALITY OF WORK LIFE AMONG EMPLOYEES - A STUDY OF NON-TEACHING EMPLOYEES OF UNIVERSITY OF JAMMU

Jeevan Jyoti Gupta
Asst. Professor,
Pooja Gupta,
Research Scholar,
Deptt. Of Commerce,
University of Jammu, Jammu

Abstract

Employees are one of the most important resources for the effective and efficient organization and without the personal efforts and commitment of the human resources, organizations cannot succeed. Quality of work life is critical to retain and attract well-qualified personnel and further people are interested to work in the organizations where there is better quality of work life. Quality of work life seeks to create a culture of work commitment in organisations and society at large so as to ensure higher productivity and greater job satisfaction of the employees. It is the degree to which members of a work organisation are able to satisfy important personnel needs through their experience in the organisation. It refers to the favourableness or unfavourableness of a job environment for people. The primary objective of this paper is to investigate the quality of work life among non-teaching employees. Data were collected from 300 non-teaching employees working in University of Jammu. The attitude of non-teaching employees was analyzed with the help of Quality of work life scale. The statistical tools applied to analyze the data viz. mean, factor analysis, correlation, and regression. The results indicated that employees working in University of Jammu are satisfied with the quality of work life.

Introduction

High performance and productivity of most organisations could not be realised without employee's support and contribution. This is because employees are responsible for the achievement of organization's goals and objectives. Therefore one (organisation) should concentrate on issues and problems encountered by employee in organisations (Samad, 2006). Quality of work life is critical to retain and attract well qualified personnel in the organisation. It has been defined as better jobs and more balanced ways of combining working life with personal life (Eurofound, 2006). It is a comprehensive construct which includes an individual's job related well-being and the extent to which work experiences are rewarding, fulfilling and devoid of stress and other negative personal consequences (Shamir and Salomon, 1985). Quality of work life is a multidimensional phenomenon that includes the task, the physical work environment, social environment within the organisation, administrative system and relationship between life on and off the job (Cunningham and Eberte, 1990). Quality of work life also tends to include job security, reward system, pay and opportunity for growth among other factors (Rossi et al., 2006). It consists of opportunities for active involvement in group working arrangements or problem solving that are of mutual benefit to employees or employers, based on labour management cooperation. People also conceive it as a set of methods, such as autonomous work group, job enrichment, high-involvement aimed at boosting the satisfaction and productivity of workers (Feuer, 1989).

Research on the social psychology of work also suggests that the quality of work life can have pervasive consequences on one's sense of worth and one's personal sense of control (Mortimer, 1979; Mortimer and Lorence, 1989; Gecas and Schwalbe, 1983). In simple words quality of work life affect general life satisfaction, including good health, adequate housing, employment, personal and family safety, education and leisure pursuits (Watanable, 2008).

Employees trust that with the presence of quality of work life initiatives they feel safe, relatively well satisfied and able to grow and thus can develop as human beings. They believe that quality of work life enhances their dignity through job satisfaction and humanizing work by assigning meaningful jobs, ensuring job security, making provisions for adequate pay and benefits, providing safe and healthy working conditions, giving opportunities to develop human capacity, ensuring growth and security, social integration, getting freedom to self-expression and thus, help to increase individual productivity that supports to achieve organizational effectiveness (Hian and Einstein, 1990; Nachmias, 1988; Guest, 1979; Walton, 1974).

Review of literature: -

Carlson (1983) in his study analyzed Quality of Work Life (QWL) is both a goal and an on-going process for achieving it. As a goal, QWL is the commitment of any organization to work improvement — the creation of more involving, satisfying and effective jobs and work environment for people at all levels of the organization. As a process, QWL calls for efforts to realise this goal through the active involvement of people throughout the organization.

Chan (2006) in his study indicated that the project manager's experience in running public housing projects was the most important factor affecting the quality scores. Other important factors include a proactive quality culture; the extent of using direct skilled labour; a comprehensive subcontract inspection system; the competency of site labour, and the client's emphasis on quality, safety and environment.

Grover et al (2006) in his study revealed that the extent of human aspects present in an organization, conducive to TQM culture is represented in terms of the "human index". It provides an insight into the human factors at system and subsystem level. The developed procedure may be useful for self-analysis and comparison among organizations.

Lewis et al (2001) in thir research paper found that objectively identifiable traits of an organization – pay, benefits and supervisor style – play the major role in determining QWL satisfaction. Decision-makers with an interest in improving QWL in a health-care institution can focus on these traits and pay correspondingly less attention to enhancing staff autonomy or discretion.

Karia and Asaari (2006) indicated that training and education have a significant positive effect on job involvement, job satisfaction, and organizational commitment. Empowerment and teamwork significantly enhance job involvement, job satisfaction, career satisfaction, and organizational commitment. Continuous improvement and problem prevention significantly enhance job satisfaction and organizational commitment. Customer focus does not contribute to job involvement, job satisfaction, career satisfaction, or organizational commitment.

Juuti (1991) revealed that work continues to be important but where job security was of greatest importance in 1986, equal and just treatment ranked highest in 1989. Amongst professionals, who may be seen as heralds of the new society, the material and social aspects of work are now much less important: opportunities for personal growth and fulfilment are what is most desired.

Kondo (1999) in his study indicated that improving quality in creative ways reduces costs and raises productivity and that providing the three elements of creativity, physical activity and sociality is indispensable for human work. He looks at aspects such as the origins of the human interest in quality and the social nature of humanity and concluded that without talking quality, it is impossible to speak of human motivation.

Elizur (1990) in his study attempted to analyse the relationships between employees' participation in quality circles, their sense of quality of work life, perceived job reinforcement capacity and job satisfaction. He found a positive relationship between participation in quality circles and various aspects of quality of work life, perceived job reinforcement capacity and job satisfaction.

Hypothesis of the study

Various studies indicated that factor such as physical and social work environment affect employees' emotional well being (Lawler, 1986; Sheppard and Herrick, 1972; Simmons and Mares, 1985;). For example, noisy and harmful work sites cause emotional distress (Menaghan and Merves, 1984). Furthermore, social supports from co-workers influence employees' mental health (Loscocco and Spitze, 1990; Lowe and Northcott, 1988). Loscocco and Roschelle (1990) argued that the various needs of employees are easily frustrated when job demands are too great. Excessive workloads, forced overtime, and ambiguous or conflicting role demands cause emotional distress (Bacharach et al., 1990; House et al., 1979; Menaghan and Merves, 1984). It has been also found that factors such as job rewards, substantive complexity, challenge, autonomy, and meaningfulness of work affect emotional well being (Adelmann, 1987; Lawler 1982; Lowe and Northcott, 1988; Loscocco and Spitze, 1990; Sheppard and Herrick, 1972;). McFarlin and Rice (1991) has demonstrated that job facets (e.g., opportunity to take action, freedom to do work own way, learning opportunities, opportunity to suggest work procedures, involvement in the solution of work problems, performance feedback, and contact with client or customer) contribute significantly to job satisfaction (Rice et al., 1991). Teamwork, as a job requirement, has been argued to enhance both QWL and job performance (Nadan and Nadan, 1995). In the era of scientific management, QWL was based on extrinsic traits of jobs: salaries, safety and hygiene, and other tangible benefits of the workplace. The human relations approach stressed that, while extrinsic rewards are important, intrinsic traits of job: autonomy, challenges and task contents, are key predictors of productivity and efficiency.

Deriving from these findings, the following hypotheses were proposed:

Hyp.1 (a) Physical environment influences job satisfaction of the employees.

Hyp.1 (b) Job characteristics are significantly related to workers quality of work life.

Hyp.1 (c) Opportunities for promotion and recognition significantly affect quality of work life of employees.

Hyp.1 (d) Difficult and complex job influences quality of work life of the employees.

Research Design and Methodology

The present research is evaluative and exploratory in nature as it tries to find out the quality of work life among non-teaching employees. The following steps were taken to make it more effective and accurate:-

Generation of Scale Items

The statements of the self designed schedules were finalized after reviewing the existing literature and extensive discussion with the experts.

Self designed schedule comprised two sections. The first section was concerned about the demographic profile of the non-teaching employees, where they were asked about their age, gender, marital status, qualification, job status and number of years they spent in an organisation. It was followed by Quality of Work Life Scale (QWLS). The second section comprised 50 statements related to quality of work life. The quality of work life of non-teaching employees has been measured with the help of a quality of work life scale. Likert's five point scale (5------1) and summated scale have been used for measuring attitudes (Hair et al., 2003, p.22-23).

Sample and Sampling Technique

The population for the study comprised 848 non- teaching employees of University of Jammu. To determine the sample size, a pilot survey of fifty respondents selected conveniently was conducted to work out the mean and standard deviation in the population with the help of following formula (Mukhopadhya, 1998, p.21-32)

$1.96*S.D \sqrt{N-n/n}*N= 0.05*$ mean

Key- S.D=Standard Deviation, N= Total population, n = Sample population, Mean= sample mean.

After determining the mean and standard deviation in the population (N 848), the sample size was worked out at 263. However, the sample size represents the minimum of respondents that need to be contacted but in order to make the sample more representatives, simple in calculation and better interpretability sample size was increased to 300. Hence, from 848 employees 300 employees were selected as sample. The selection of employees was done on the basis Proportionate stratified sampling by the mean of following formula

n/N* Sample size   (Malhotra, 2002, p.266-291)

Stratified random sampling technique was used to select the sample respondents on the basis of strata. Finally the chit method was used to select the particular employee.

Data Collection Form

The primary data for the study has been collected through quality of work life schedule from the respondents (non-teaching employees). The schedule was prepared as per the requirements of the study and concretized on the basis of existing literature and ongoing practices. The respondents were personally contacted and they were explained the reason for the research. All the respondents responded properly. Hence, the response rate came 100 percent. All the employees participated voluntarily.

Statistical Tools Applied

The various statistical tools used in this research are mean, standard deviation frequency distribution, Multiple correlations, Multiple regressions and Convergent validity has been worked out through positive Correlation between statements of different dimensions. The reliability and the internal consistency of the data collected have been judged through tests like the split half and Cronbach's alpha.

Data Purification

The multivariate data reduction technique of factor analysis has been used for the study. It involves examination of interrelationships among variables and reduction of large number of variables into few manageable and meaningful sets. Factor analysis was carried out through the Statistical Package for Social Sciences (SPSS, 15 version) to simplify and reduce the data. It was carried with Principal Component Analysis along with orthogonal rotation procedure of varimax for summarizing the original information with minimum factors and optimal coverage. The statements with factor loading less than 0.5 and Eigen value less than 1.0 were ignored for the subsequent analysis (Hair et al., 1995; Sharma and Jyoti, 2004-2005). The data reduction was performed in three steps- Ist in the anti-image correlation the items with value less than 0.5 on the diagonal axis were deleted. In the second step the extracted communalities were checked (amount of variance in each variable) and items with values less than 0.5 were ignored for the subsequent analysis. In the third step in rotated component matrices statements with multiple loadings and values less than 0.5 were ignored.

The quality of work life data was subjected to factor analysis once. It was carried with all the statements of quality of work life that resulted into nine factors with 37 statements (Table 1) of quality of work life.

Table 1: Summary Of Results From Scale Purification Of Job Satisfaction Data: Factor Loadings, Variance Explained, Mean, S.D., KMO Values and Eigen Values

Factors	Mean	S.D	F.L	V.E	KMO	E.V
F1 PHYSICAL ENVIRONMENT	**3.58**	**0.46**				
Infrastructure of dept.	3.67	1.07	0.728			
Lighting &ventilation	3.65	1.05	0.764			
Good health services	3.55	1.00	0.728			
Sanitary condition	3.58	0.98	0.851	**12.58**		4.65
Bathrooms are clean	3.45	1.10	0.811			
Filtered drinking water	3.62	1.09	0.813			
Adequate furniture	3.52	1.09	0.618			
Total	**3.58**	**0.46**				
F2 Qualities of Co-workers	**4.16**	**0.38**				
Good qualities	4.20	0.77	0.671			
Cooperative	4.25	0.75	0.785			
Friendly nature	4.20	0.78	0.788	11.76		4.35
Unite in the time of crisis	4.14	0.79	0.756			
Trusted	4.08	0.87	0.843			
Prefer to work	4.12	0.84	0.863			
Total	**4.16**	**0.38**				
F3 Positive attributes of job	**4.04**	**0.39**				
Job is interesting	4.06	0.91	0.795			
Job is better than others	4.00	0.85	0.787	8.42		3.11
Proud of job	4.04	0.83	0.842			
Feel lucky	4.03	0.86	0.761			
Total	**4.04**	**0.39**				
F4 Facilities for Adv. &Training	**3.16**	**0.52**				
Career advancement is on merit	3.30	1.15	0.771			
Chance of advancement	3.14	1.06	0.720			
Facilities for training	2.92	1.05	0.754	8.00		2.96
Promotion is merit -based	3.03	1.21	0.733			
Promotion is time -based	3.40	1.05	0.506			
Total	**3.16**	**0.52**				
F5 Attributes of supervisor	**3.99**	**0.39**			0.848	
Good administrator	4.17	0.87	0.724			
Job related advice	3.98	0.96	0.719			
Impartial person	3.87	0.90	0.793	7.89		2.92
Cooperative	3.96	0.86	0.816			
Total	**3.99**	**0.39**				
F6 Allowances	**3.11**	**0.55**				
Medical allowance	2.90	1.19	0.775			
Housing allowance	3.19	1.16	0.887	6.80		2.51
Dearness allowance	3.23	1.11	0.813			
Total	**3.11**	**0.55**				
F7 Negative attributes of job	**2.79**	**0.54**				
Workload in job	2.64	1.05	0.774			
Difficult and complex job	2.74	1.08	0.773	5.18		1.91
Job is stressful	3.00	1.02	0.726			
Total	**2.79**	**0.54**				
F8 Monetary Rewards	**2.39**	**0.58**				
Monetary reward	2.20	1.28	0.698			
Regular bonus	1.38	0.82	0.722	4.90		1.81
Recognition in the form of reward	2.32	1.16	0.726			
Total	**2.39**	**0.58**				
F9 Autonomy	**3.50**	**0.69**				
Freedom in doing work	3.71	0.99	0.76			
Flexible working hours	3.30	1.20	0.876	3.87		1.43
Total	**3.50**	**0.69**				
Grand Mean	**3.46**	**0.24**				

Table 2 Reliability Statistics of Quality of Work Life Scale		
		JSS
Mean	Part1	3.59
	Part2	3.62
Cronbach's Alpha		0.903

Reliability and Validity

To check the internal consistency in the data collected the reliability tests viz. Cronbach Alpha and split half value have been worked out. The split-half reliability of the data has been examined by dividing the respondents in to two equal halves. The data collected from employees has been proved reliable (Table 3). Further, Cronbach's alpha value also proved reliable (Table 3).

Table 3: Correlation Matrix

	QWL	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9
QWL	1									
FACTOR1	.288(**)	1								
FACTOR2	.415(**)	.241(**)	1							
FACTOR3	.620(**)	.385(**)	.334(**)	1						
FACTOR4	.291(**)	.367(**)	.281(**)	.244(**)	1					
FACTOR5	.433(**)	.386(**)	.560(**)	.396(**)	.325(**)	1				
FACTOR6	.314(**)	.397(**)	.268(**)	.292(**)	.394(**)	.326(**)	1			
FACTOR7	0.018	0.063	0	-0.07	0.064	0.043	0.04	1		
FACTOR8	0.05	.251(**)	.123(*)	.168(**)	.323(**)	0.106	.304(**)	-0.038	1	
FACTOR9	.337(**)	.313(**)	.199(**)	.412(**)	.251(**)	.325(**)	.245(**)	0.008	.234(**)	1

The **content/face validity** of the JSS, OCS and ILS was duly assessed through thorough review of literature and deliberations with the subject experts for the selection of items in the scales. The high Kaiser–Meyer–Olkin Measure of Sampling Adequacy values, Bartlett's Test of Sphericity and Variance explained (Table 1) represents the **construct validity**. The convergent validity of the quality of work life data has been proved by positive correlation matrix of different dimensions of quality of work life.

Limitation of the Study

All feasible efforts were made to maintain objectivity, reliability and validity of the study, yet certain limitations could not be ignored and are required to be kept in mind whenever its findings are considered for implementation. These limitations are discussed as under:

1. The study has measured employees' quality of work life on the basis of the employees' responses which might have been guided by their likes and dislikes.
2. The scope of the study was limited to University of Jammu only.
3. The data was collected only from the non-teaching employees.
4. The information obtained about their quality of work life is not fully free from subjectivity. The elements of subjectivity might not have been checked completely as employees have responded on the basis of their own experience and perception regarding the satisfaction, commitment and intention to leave statements in the questionnaires.

To certain extent the aforesaid limitations have affected the findings of the study. In spite of these unmanageable lacunae at individual level, an effort has been made to maintain the validity and reliability of the research work, and as such research in future ought to be initiated carefully in the light of the aforesaid limitation.

Measurement of Quality of Work Life

The Overall degree of quality of work life is not very high. The average satisfaction score has arrived at 3.41 at 5 point Likert scale. However it can be concluded that the employees tend to be fairly satisfied with their quality of work life as revealed by mean score. To test the level of satisfaction among non-teaching employees Quality of work life, being a multi-dimensional phenomenon, was calculated after calculating satisfaction scored from various dimensions. The detailed analysis of each dimension is as under:-

Infrastructure/Physical environment (Factor 1)

Working conditions that are compatible with an employee's physical comfort and facilitate doing a good job contribute to quality of work life. Temperature, humidity, ventilation, lighting and noise, hours of work, cleanliness of the work place and adequate tools and equipment are the features which affect quality of work life. The factorial mean satisfaction for this dimension was figured out at 3.55. Majority of the respondents (65%) are satisfied with the Infrastructure of their department (M=3.67) and have properly lighted and ventilated rooms (M=3.65), moreover the furniture is also adequate and comfortable for them (M=3.52). They further reported that facilities like drinking water, sanitary condition and cleanliness of bathrooms is adequate. Hence it can be concluded that availability of adequate infrastructure contribute to quality of work life of employees. About fifty nine percent employees are also satisfied with the health services (M=3.55) and (64%) the housing facility (M=3.60). Correlation and multiple regression analysis have been used to examine the influence of physical

environment on quality of work life of employees. The results of correlation analysis revealed a positive and significant relationship between physical environment and quality of work life (r=0.288, p<0.01). The results of regression analysis indicated R at 0.288 and adjusted R^2 at 0.08. This hypothesis is also accepted as the beta value is good (b=0.288) t value is greater than 2 (t=5.188 >2) and significant level is less than 0.05 (Table 4). It implies that physical environment also influences job satisfaction of employees.

Co-workers/Colleagues (Factor 2)

The factorial mean for this dimension has arrived at 4.16. Most of the non-teaching employees (88%) are satisfied with the qualities of their colleagues (M=4.20). Majority of them (89%) find them cooperative (M=4.25) and friendly (M=4.20). It can be inferred from the results that the good, cooperative and the friendly colleagues (M=4.08) also help to enhance the quality of work life of employees. About eighty three percent employees reported that there is the element of trust amongst the colleagues (M=4.08) and tendency to get united at the time of crisis (M=4.14). The overall results from this dimensions showed that eighty percent employees were highly satisfied with their colleagues and their relations with their co-workers were satisfactory. The coefficient of correlation(r) between co-workers and quality of work life was figured out at 0.415 (sig. < 0.01) while the coefficient of determination (r^2) has arrived at 0.17 respectively.

Job Characteristics (Factor 3)

The factorial mean satisfaction derived from this factor came to 4.03. Most of the non-teaching employees (82%) were satisfied with their job as they find their job interesting (M=4.06), much better than others (M=4.00), which makes them proud of their job (M=4.04). Moreover they find themselves lucky enough in getting this job (M=4.03). It implies that enjoyable job makes employees happy. Hence positive attributes of job (F1) enhances the quality of work life of non-teaching employees (R=0.620, R^2=0.382, b=0.620, t=13.643, sig. <0.01). In order to find out relationship between job characteristics and employees' quality of work life correlation analysis has been performed. Correlation was conducted with overall dimension of job characteristics and employees quality of work life (master statement) which revealed positive and significant relationship (r=0.62, p<0.01) between job characteristics and employees' quality of work life. It indicated that job characteristics are significantly related to quality of work life. Hence hypothesis 2 stands accepted. Multiple regression (enter method) analysis has also been performed to know the influence of job characteristics on quality of work life. The results of regression analysis revealed R at 0.62 and adjusted R^2 at 0.38 (Table 4) indicating that the 38 percent variation in quality of work life is explained by job characteristics.

Career Advancement/Promotion (Factor 4)

Promotional opportunities affect quality of work life considerably. The desire for promotion is generally strong among employees as it involves change in job content, pay, responsibility, independence and status. The factorial mean satisfaction derived from this dimension has arrived at 3.16. Half of the employees reported that career advancement (M=3.30) and forty one percent employees revealed that promotion is done on merit basis (M=3.03) and there are more chances of advancement in the University of Jammu (M=3.14). About forty percent employees revealed that there is lack of proper training facilities (M=2.92). Overall analysis revealed that employees are satisfied with all aspects of promotion and recognition except absence of training facilities. The correlation analysis shows that the opportunities for promotion and recognition have significant and positive relationship with employees' quality of work life (r=0.291; p<0.01). Besides it the degree of influence exercised by opportunities for promotion and recognition on employees' quality of work life has been examined by regression analysis. Results revealed R at 0.291 and R^2 at 0.08. Further the beta value (b=0.291) t value (t=5.25 >2) and significant level (p < 0.05) (Table 4) indicates that the opportunities for promotion and recognition affect quality of work life of employees. Hence, hypothesis 3 stands accepted.

Supervisor/Superior (Factor5)

 Superiors establish a supportive personal relationship with subordinates and take a personal interest in them which contribute to their subordinates' satisfaction. The factorial mean satisfaction derived from this dimensions has arrived at 3.99. The analysis revealed that most of the non-teaching employees (88%) are satisfied with their supervisor/superior and find him as an efficient administrator (M=4.17) and cooperative (M=3.96). He also gives good suggestions as well as job related advice whenever needed (M=3.98). It implies that employees are satisfied with their supervisor due to his good behaviour and guiding approach. It is concluded that positive attributes and behaviour of the supervisor/superior adds to the quality of work life of his subordinates. The coefficient of correlation (r) and the coefficient of determination (r^2) between supervisor/superior and quality of work life have arrived at 0.433 (sig. < 0.01) and 0.18 respectively, indicating a significant relationship between the two.

Allowances (Factor 6)

Salary plays a significant role in affecting job satisfaction as it is an important source and satisfying one's need and employees usually take it as a reflection of management's concern for them. The factorial mean derived from this dimension of quality of work life has arrived at 3.11. Nearly half of the respondents reported that they are satisfied with housing (M=3.19) and dearness allowances (M=3.23) whereas thirty-nine percent employees were not satisfied with the medical allowances (M=2.90). It indicates that medical allowances provided to employees were not adequate. The coefficient of correlation (r) and the coefficient of determination (r^2) for this dimension of quality of work life have arrived at 0.314 and 0.10 (sig. < 0.01) respectively.

Difficult and Complex Job (Factor 7)

The factorial mean satisfaction has arrived at 2.79. Non-teaching employees are dissatisfied due to too much workload (M=2.64), complexities and hardships (M=2.74) at the workplace, due to which employees feel stressful (M=3.00). Thorough analysis of the dimension revealed that overloaded and complicated job decrease the satisfaction level of employees. Multiple regression analysis using the enter method was conducted with this dimension to evaluate the effect of difficult and complex job on quality of work life of employees. The results of

regression analysis revealed R at 0.018 (multiple correlation) and adjusted R^2 at -0.003 (Table 4) indicating that the model explains no variation in quality of work life of employees (Table 4). Further the beta value (b=0.018), t value (t=-0.311 <2) and significant level (p> 0.05) indicates that difficult and complex job have no effect on quality of work life of employees. Hence hypothesis 4 stands rejected.

Monetary Reward (Factor 8)

The mean of this factor came to 2.34 which indicate that employees are dissatisfied with monetary reward. Majority of the respondents (88%) reported that there is no bonus payment system in University of Jammu (M=1.38) and also expressed that recognition does not come in the form of monetary rewards (M=2.32). It simply comes in the form of appreciation and praise. About fifty six percent respondents reported that salary they receive is equal to their work. It implies that absence of monetary reward dissatisfied them. The coefficient of correlation (r) and the coefficient of determination (r^2) for this dimension of quality of work life have arrived at 0.387 (sig. < 0.01) and 0.150 respectively indicating a low but significant association between the two.

Autonomy (Factor 9)

The mean of this factor came to 3.50. It has been found that there is element of flexibility (M=3.30) and autonomy (M=3.71) in their jobs. It implies that elements of flexibility and freedom also play a vital role to boost up employees quality of work life as the correlation between the two has arrived at 0.337 (sig. <0.01). The coefficient of correlation (r) and the coefficient of determination (r^2) for this dimension of quality of work life have arrived at 0.337 and 0.11 (sig. < 0.01) respectively.

Table 4 Model Summary Of Regression Showing Influence Of Different Dimensions And Factors On Overall Quality Of Work Life								
Quality of work life (MS)	Independent	R	Adj. R^2	b	t	Sig.	f	Sig.
	Physical environment	0.289	0.08	0.289	5.19	0	26.918	0.00
	Job characteristics	0.62	0.38	0.62	13.643	0	186.43	0.00
	Career adv. /pro.	0.29	0.082	0.29	5.25	0	27.565	0.00
	Difficult and complex job	0.018	-0.003	0.018	-.311	0.76	0.097	0.756

Discussion and Conclusion

The purpose of the current study was to determine the Quality of work life and effect of different dimensions on Quality of work life among non-teaching employees working in University of Jammu. The result obtained revealed that non-teaching employees are moderately satisfied with the Quality of work life.

Employees are satisfied with physical environment and agreed that they have been provided with properly lighted and ventilated rooms, adequate and comfortable furniture, health services and housing facility. Moreover facilities like drinking water, sanitary condition and cleanliness of bathrooms is also adequate. It has also been found that Physical environment influences quality of work life of employees.

Non-teaching employees are highly satisfied with their colleague. The findings are in line with previous studies conducted by Ellickson and Logsdon (2001); Rad and Yarmohammadian (2006); Oshagbemi (2003) and opposite to the research conducted by Chimanikire et al., 2007).

Non-teaching employees are satisfied with the nature of their job, (consistent with Rad and Yarmohammadian, 2006; Oshagbemi, 2003) as their job is interesting and enjoyable one. Moreover autonomy and flexibility at work place also play a vital role to boost up their satisfaction level. But complexities and overloaded job reduces it. Among all the dimensions of Quality of work life job characteristics affect Quality of work life the most where as difficult and complex job have no effect on quality of work life of employees.

Non-teaching employees are also least satisfied with the career advancement and promotion. Career advancement/ promotion opportunities are also significantly related to Quality of work life.

 Employees are also highly satisfied with the positive attributes and good behaviour of their superior. The result is consistent with the study conducted by Sharma and Jyoti (2006). It has been found that superiors' behaviour also is not contributing to enhance satisfaction level of non-teaching employees. The result is supported by Chimanikire et al., (2007).

In comparison to other dimensions non-teaching employees are less satisfied with the allowances. Housing and dearness allowances add to their satisfaction level whereas inadequate medical allowances cause dissatisfaction among them. Employees are also dissatisfied with absence of monetary rewards.

Strategic Implications

For an organisation to be successful its management must ensure that its employees have a high level of quality of work life, in order to mutually have a high level of job satisfaction, organisational commitment and lower intention to leave. University administration should focus on increasing its non-teaching employees' quality of work life from factors such as allowances, rewards, working condition, promotion, benefits, training programmes and so on. These can influence the way a person would feel and perceive about their jobs. Thorough analysis and interpretation of data collected has lead to following strategic implications to improve the quality of work life, job satisfaction and decrease intention to leave of non-teaching employees.

❖ **Autonomy:** Employees are moderately satisfied with the autonomy at work place. In order to make employees fully satisfied University should enrich their job by providing them more autonomy at the work place.

❖ **Simplification of job for reducing complexities**:- Employees are dissatisfied due to complexities in their present job. To make the job less complex employees should have the role clarity about the job assigned to them. It will reduce their job complexities, which will in turn increases their quality of work life

❖ **Reduction of workload:-** The work allotment should be according to employee's capabilities to reduce their stress and increase their overall work performance.

❖ **Filling of vacant posts**: - Advance planning should be done to fill the posts which are at present vacant or to be vacated in the future without wasting anytime so that the work load is shared among all equally as per their capability which results in increasing the efficiency and performance of employees.

❖ **Salary**: - The present inflation index has made it very difficult to make both ends meet. Two way action is recommended:

    o Increase in salary: - A proper salary that satisfies the wants of an employee is the foremost requirement for ensuring quality of work life. University of Jammu should improve the total package so that the non-teaching employees are adequately remunerated for their work.

    o Increase in tax exemption limit: - with the increase in tax rates, there must be increase in the tax exemption limit too i.e. from Rs150000 to Rs300000, if the tax exemption limit is not increased then most of their income goes to the government exchequer and it would not be possible for them to maintain their standard of living in present inflationary conditions.

❖ **Allowances**: - Employees are less satisfied with housing and dearness allowances and dissatisfied with medical allowances. Medical allowances provided to employees are not adequate to meet the respective expenses. So appropriate measures ought to be undertaken in order to provide allowances to employees to enhance their satisfaction level and quality of work life.

❖ **Bonus: -** Besides salary package bonus also play a significant role in attracting and stimulating employees to work. So besides enhancing the pay package, the timely bonus should also be provided to employees for their good work so that they are motivated to perform highly.

❖ **Career advancement**:-The atmosphere at work place shall be such that it continuously works towards employees' progression and advancement, in skills and responsibilities, by using the full range of employee knowledge and skills. Opportunities shall be provided for challenging assignments, considering reassignments.

❖ **Proper training facilities**:- Proper training courses should be offered to enhance the skill of employees which further enhance their satisfaction level and quality of work life.

❖ **Promotion policy**: - Most of the employees responded that the present promotion policy is not genuine as it is based on seniority and not on merit and this fact adds to their frustration. Highly qualified employees are least satisfied with this criterion because highly qualified employees have lower ranks than less qualified employees. So, to make the employees fully satisfied merit along with seniority should also be considered while promoting employees. It should be given a deep thought while making promotion policy so that employees remain aware about it.

❖ **Recognition for hard work**:-University should also decide to make use of a reward system to recognize those employees who perform their job well. Indeed, one would feel highly satisfied when he or she obtains a reward for his/her hard work and outstanding performance. Rewards can be of different forms such as monetary rewards and non-monetary rewards in the form of introduction of merit certificate. It will encourage them to carry on their task enthusiastically and will attract other employees to work seriously too.

❖ **Physical environment**: - Employees are moderately satisfied with the physical environment/infrastructure which needs to be further enhanced in order to increase the level of satisfaction. So, better working conditions such as adequate furniture and more clean bathrooms should be provided to the workers in order to generate an amicable atmosphere in the University.

    All this will not only enhance the level of quality of work life of the employee but it will also improve their degree of job satisfaction, organizational commitment and reduce the intention to leave.

Future research

❖ Future research is required to assess the applicability of these findings to the general population of university of Jammu.

❖ Future research should seek to add more dimensions of quality of work life like psycho-sociological.

❖ Interrelationship among all the variables viz. quality of work life, job satisfaction organizational commitment and intention to leave to be measured.

❖ Comparative study between different organizations vis-à-vis public Vs private, public Vs public and private Vs private can be undertaken.

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GLOBALIZATION AND FOREIGN DIRECT INVESTMENT IN INDIA

Davinder Kumar Madaan
Department of Management,
Punjabi University Campus,
Maur (Bathinda), Punjab (India)

Abstract

India initiated economic reforms consisting of liberalization, privatization and globalization of the economy in July 1991. There has been an appreciable increase in the growth of FDI and exports. In the domain of FDI inflows, the post-globalization period (1992-2007) has witnessed a substantial rise, as compared to pre-globalization period (1976-1991). India became 8th largest FDI recipient and 12th largest exporter among the developing countries of the world in 2007. However n spite of the remarkable increase in FDI inflows, the share of India in the global FDI inflows increased from 0.1 per cent to 0.7 per cent during pre and post globalization period. Its share in global FDI inflows and exports was 1.3 per cent and 1.1 per cent, respectively, in 2007. However, India's share in the FDI inflows of the developing countries was 4.7 per cent during this period. Besides the performance of FDI in India, as evaluated by the UNCTAD, has been quite low. Among the 141 countries for which the performance index was prepared, the ranking (in the descending order) of India was 106 for inward FDI and 50 for outward FDI in 2007. Hence India has to look into its limitations in order to improve this position.

Introduction

The term 'globalization' means integration of economies through cross country flows of information, ideas, technologies, goods, services, capital, finance and people. The process of globalization accelerated since the beginning of 1980s and subsequent to the establishment of World Trade Organization (WTO) on 1st January 1995. The increase in Foreign Direct Investment (FDI[1]) has largely reflected relatively high economic growth and strong corporate performance in many parts of the world. This is especially applicable for the developing countries. The FDI increases productive capacities and international competitiveness. It also permits the transfer of technologies, and develops the human capital resources of the country.

The FDI inflows in the world increased from US$ 167 billion (bn) in 1992 to US$ 1697 bn in 2008. However, global FDI inflows fell by 14 per cent in 2008 from a record high of US$ 1979 billion in 2007 due to financial turmoil and economic slowdown in the world markets. Cross-border Mergers and Acquisitions (M&As) contributed substantially to the global surge in FDI. The production of goods and services by an estimated 82,053 TNCs[2] and their 8.07 lacs foreign affiliates expanded, and their FDI stock and total sales exceeded US$ 15 trillion (tn) and US$ 30 tn, respectively. The value gross product of foreign affiliates worldwide represented an estimated 10 per cent of global GDP (UNCTAD, 2009).

About 57 per cent of the total FDI inflows were to the developed countries in 2008. Despite turbulence in financial markets, the USA retained its position as the largest recipient country, followed by the France, UK and Canada. The European Union (EU) was the largest host region, attracting almost two thirds of total FDI inflows into developed countries. In developing countries, FDI inflows reached their highest level of US$ 621 bn in 2008 from mere US$ 53 bn in 1992. The developing countries continued to gain with FDI outflows rising to US$ 293 bn, mainly as a result of outward expansion (UNCTAD, 2009). The success stories of East and South East Asian countries suggest that FDI is a powerful tool of export promotion because TNCs through which most FDI is undertaken have the well established contacts and up to date information about foreign markets.

The high growth of FDI flows has largely been due to mushroom growth of Regional Trade Agreements (RTAs[3]) in the world. During the period of GATT (General Agreement on Tariffs and Trade, 1948-94), 143 RTAs were notified to the GATT. Of these, only 91 RTAs were in force. Presently, total 457 RTAs had been notified to WTO/GATT. Of these, 266 RTAs were in force and the remaining 191 RTAs were inactive (WTO, 2009). In 2008, 53.2 per cent of the global trade took place under RTAs (WTO, ITS, 2009). Traditionally, RTAs aimed to lower trade barriers. However, now they have moved beyond trade barriers and involve investment also. These RTAs are generally referred as new generation RTAs or New Regionalism (Ethier, 1998). These new generation RTAs affect FDI flows through preferential trade related investment provision. Extra-regional FDI also steps up due to the access of larger market for the investor, and the incentive for lowering of non-tariff barrier within RTA (Aggarwal, 2008). The relationship between FDI and trade has become positive in the current WTO regime.

India initiated economic reforms consisting of liberalization, privatization and globalization of the economy in July 1991. After the initial 2-3 years of low growth rate of the Gross Domestic Product (GDP), the growth rate appreciably increased and overall growth rate during 1990s has been about 6.5 per cent. During 2007-08, the economy grew at a rate of 9 per cent (GOI:Economic Survey, 2008). There has been an appreciable increase in the growth of FDI and exports. The country's foreign exchange reserves were in a comfortable position. The FDI stock[4] of India increased from US$ 2 bn in 1992 to US$ 76.2 bn in 2007 (UNCTAD, 2008). Further, FDI inflows into India increased from US$ 0.3 bn to 25.1 bn during this period, respectively. However, during 2008, FDI inflows into India increased to US$ 41.6 bn. The FDI in India came from non resident Indians, international companies, and other foreign investors. In 2008, India was the 8th largest recipient of FDI inflows among the developing countries (41.6 bn – 6.7% of the world), after China (US$ 108.3 bn–17.5%), Hong Kong, Russia, Brazil, Mexico, Saudi Arabia, and Singapore (UNCTAD, 2009).

This paper examines the role of FDI in India, and thereby attempts to study the impact of FDI on exports of India. The study pertains to a period from 1976 to 2007, which has been divided into two parts, viz, pre-globalization (1976-91) and post-globalization (1992-2007) to make better comparisons. The paper has been organized into five sections. Section I, the preceding one, gives brief introduction to the FDI. Section II dwells on the role of FDI in

India. The FDI and trade relationship has been discussed in Section III. Section IV discusses the causal link between FDI and Exports through Granger Causality testing for India. The last section sums up the study.

Role of FDI in India

India was one of the lowest recipients of FDI among developing countries until 1970s. The restriction in foreign shareholdings of equity and lengthy approval process contributed to a lower level of FDI. The remarkable growth of FDI in India since 1990s had major impacts on the economic growth of the country. India's FDI inflows touched US$ 41.6 bn in 2008 against US$ 0.3 bn in 1992, and the country's foreign exchange reserves crossed US$ 255.9 bn as on December 31, 2008 (RBI 2009). The favourable investment regime has resulted in a horde of MNCs investing in India. As per global survey conducted by Ernst and Young in June 2008, India has been rated as the fourth most attractive investment destination in the world, after China, Central Europe and Western Europe in terms of prospects of alternative business locations. A large portion of the FDI has been flowing into the skill-intensive and high value-added services industries, particularly financial services and information technology. India's exports have grown much faster than GDP over the past few decades. Simple average of applied tariffs on all products declined from 78.7 per cent in 1990 to 14.5 per cent in 2007 (WTO:ITC:UN, 2008). Trade liberalization has had a favourable effect on FDI inflows into India.

Table 1: Some Salient FDI Indicators of India and World during 2007

S. No.	Indicator	India	World	India's Share in World (%)
1	FDI Inflows (US$ billion)	25	1979	1.3
2	FDI Outflows (US$ billion)	17	2147	0.8
3	FDI Stock Inward (US$ billion)	76	15211	0.5
4	FDI Stock Outward (US$ billion)	29	15602	0.2
5	Number of Parent Corporations	699	78817	0.9
6	Number of Foreign Affiliates	1923	794894	0.2
7	Cross Border Merger &Acquisition - Sales ($,bn)	4	1031	1.2
8	Cross Border Merger &Acquisition - Purchases($,bn)	29	1031	0.7
9	FDI Inward Performance Index Rank	106		
10	FDI Outward Performance Index Rank	50		
11	GDP (US$ billion)	1171	54347	2.2
12	Growth of GDP (%)	9.0	3.4	264.7
13	Per Capita GDP (US$)	1042	8219	12.7
14	Per Capita GNI, PPP (US$)	2740	9852	27.8
15	FDI stock Inward as per cent of GDP	9	29	31.2
16	International Reserves (US$ billion)	306	6391	4.8
17	Exports (US$ billion)	147	13987	1.1
18	FDI Inflows as per cent of Exports	17	14	120.7
19	Imports (US$ billion)	217	14273	1.5
20	FDI Inflows as per cent of Imports	12	14	83.5

Note: PPP is purchasing power parity

Source: UNCTAD, World Investment Report, 2008 & 2009; World Bank, World Development Indicators, 2008; & Asian Development Bank, Key Indicators for Asia and the Pacific, 2008

Table I depicts some salient FDI indicators of India and the World during 2007. It is clear from this table that India accounted for 1.3 per cent share in the world FDI inflows and 0.5 per cent in the world FDI inward stock during 2007. Similarly, India's share in the world FDI outflows and FDI outward stock was only 0.8 per cent and 0.2 per cent respectively during this period. India had only 699 parent corporations and 1923 foreign affiliates of MNC, which accounted for only 0.9 per cent and 0.2 per cent, respectively, in the world. Further, India's share in the sales and purchases of cross border M & As was 1.2 per cent and 0.7 per cent, respectively. However, cross border M & As contributed substantially in India's FDI flows. India's rank in the performance index of FDI stock Inward and Outward[5] was 106th and 50th, respectively, in the world. It is significant to note that the share of India in the world GDP was 2.2 per cent during 2007. India's growth of GDP was 9 per cent as compared to 3.4 per cent of world. However, the average per capita GDP of India was just 12.7 per cent of the average per capita world GDP. Further, the share of FDI inward stock in India's GDP was only 7 per cent as compared to 28 per cent of the world. As regards, the share of FDI inflows in the exports and imports of India, it was 17 per cent and 12 per cent, respectively, as compared to 14 per cent each for the world. It means India's performance of FDI inflows in terms of exports was quite satisfactory as compared to the world.

It is relevant to know the historical trend of FDI inflows in India and world. For this purpose, data of FDI inflows have been traced from 1976. Table II depicts the share of India in the FDI inflows of World as well as Developing Countries during 1976 to 2007. During pre-globalization period (1976-91), the share of India in the world FDI inflows came down from 0.2 per cent in 1976 to 0.05 per cent in 1991. However, this share in the FDI inflows of the developing countries diminished from 0.8 per cent in 1976 to 0.2 per cent in 1991. During post-globalization period (1992-2007), the share of India in the world FDI inflows increased from 0.2 per cent in 1992 to 1.3 per cent in 2007. However, this share in the FDI inflows of the developing countries raised from 0.5 per cent in 1992 to 4.6 per cent in 2007. Overall, India's FDI inflows increased from US$ 1.4 bn during pre-globalization period to US$ 90 bn in the post-globalization period. Its share in the world FDI inflows increased from 0.1 per cent to 0.7 per cent during this period. At the same time, this share in the FDI inflows of the developing countries increased from 0.5 per cent to 2.6 per cent. It is pertinent to mention that the share of developing countries in the world FDI inflows also increased from 22 per cent in the pre globalization period to 28.7 per cent in the post-globalization period.

Table II: India's Share in the FDI Inflows of World and Developing Countries During 1976 to 2007

(Value in US$ bn & share in per cent)

Year	FDI Inflows			India's Share	
	India	World	Developing Countries	World	Developing Countries
1976	0.05	22	6	0.2	0.8
1980	0.08	54	7	0.1	1.1
1985	0.11	56	14	0.2	0.7
1990	0.24	207	35	0.1	0.7
1991	0.08	156	40	0.05	0.2
1976-91	**1.4**	**1416**	**312**	**0.1**	**0.5**
1992	0.3	167	53	0.2	0.5
1995	2.2	341	116	0.6	1.9
2000	3.6	1398	257	0.3	1.4
2005	7.6	959	316	0.8	2.4
2006	19.7	1411	413	1.4	4.8
2007	25.1	1979	529	1.3	4.7
1992-2007	**90**	**11987**	**3441**	**0.7**	**2.6**

Source: UNCTAD, World Investment Report 2008 & 2009.

The role of FDI stock is significant in the performance of FDI. Table III depicts the share of India in the FDI Stock inward of the world and the developing countries during 1976-2007. It is clear from this table that India's share in the world FDI stock inward was less that 0.1 per cent during the pre globalization period (1976-1991). However, this share was about 0.2 per cent in case of developing countries during this period. The average FDI stock inward of India was just US$ 0.8 bn during pre-globalization period. During post-globalization period, India's FDI stock increased from US$ 2 bn in 1992 to US$ 76.2 bn in 2007. Its share in the world FDI stock increased from 0.1 per cent in 1992 to 0.5 per cent in 2007. Further, this share in the FDI stock of the developing countries also raised from 0.3 per cent in 1992 to 1.8 per cent in 2007. It may be noted that the share of developing countries in the world FDI stock was 28 per cent in 2007. Overall, during post-globalization period, India's share in the world FDI stock was 0.4 per cent only.

Table III: India's Share in the FDI Stock Inward of World and Developing Countries during 1976 to 2007

(Value in US$ bn & share in per cent)

Year	FDI Stock Inward			India's Share	
	India	World	Developing Countries	World	Developing Countries
1976	0.3	546	271	0.1	0.1
1980	0.5	704	303	0.1	0.1
1985	0.7	963	385	0.1	0.2
1990	1.7	1941	529	0.1	0.3
1991	1.7	2102	568	0.1	0.3
Average (1976-91)	**0.8**	**1054**	**380**	**0.08**	**0.2**
1992	2.0	2160	626	0.1	0.3
1995	5.6	2914	852	0.2	0.7
2000	17.5	5787	1738	0.3	1.0
2005	44.5	10180	2719	0.4	1.6
2006	52.4	12470	3303	0.4	1.6
2007	76.2	15211	4247	0.5	1.8
Average (1992-2007)	**23.0**	**6258**	**1736**	**0.4**	**1.3**

Source: UNCTAD, World Investment Report 2008

`   FDI inward stock also contributes to the GDP of an economy. In this regard, it is relevant to know the share of FDI inward stock in GDP of India as compared to the world. Table IV depicts this picture. It is revealed in this table that during pre globalization period, India's share of FDI stock in GDP increased from 0.3 per cent in 1976 to 0.6 per cent in 1991. However, this share in case of world increased from 8.7 per cent to 9.2 per cent during the same period. On an average per annum during 1976-91, India's share was 0.4 per cent as compared to 7.8 per cent of the world. Thus, India's share was quite insignificant during the pre globalization period. Nevertheless, during post globalization period, India's share of FDI stock in GDP increased from 0.8 per cent in 1992 to 6.5 per cent in 2007. However, in case of world, this share increased from 8.8 per cent to 28 per cent during this period. Overall during 1992-2007, India's share was 4.3 per cent as compared to 18.2 per cent of the world. It may be noted that the volume of India's FDI stock increased from US$ 2 bn in 1992 to US$ 76.2 bn in 2007. Hence during post globalization period, India's growth of FDI stock was significant, but it showed under performance as compared to world.

Table IV: Share of FDI Stock in GDP of India and World during 1976- 2007

(Value in US$ bn & Share in per cent)

Year	FDI Stock Inward		GDP		Share	
	India	World	India	World	India	World
1976	0.3	546	101	6289	0.3	8.7
1980	0.5	704	184	10971	0.2	6.4
1985	0.7	963	230	12417	0.3	7.8
1990	1.7	1941	317	21877	0.5	8.9
1991	1.7	2102	268	22964	0.6	9.2
Average (1976-91)	**0.8**	**1054**	**214**	**13436**	**0.4**	**7.8**
1992	2.0	2160	246	24534	0.8	8.8
1995	5.6	2914	356	29667	1.6	9.8
2000	17.5	5787	460	31949	3.8	18.1
2005	44.5	10180	809	45054	5.5	22.6
2006	52.4	12470	916	48627	5.7	25.6
2007	76.2	15211	1171	54347	6.5	28.0
Average (1992-2007)	**23.0**	**6258**	**532**	**34420**	**4.3**	**18.2**

Source: UNCTAD, World Investment Report 2008

World Bank, World Development Indicators, 2008

Despite meager share of India's FDI inflows in the world (0.7 per cent during 1992-2007), FDI as a percentage of exports became high as compared to the world, thanks to an increase in the openness of India during post globalization period. Table V shows the share of FDI inflows in the Exports of India and World during 1976-2007. It is revealed in this table that during pre globalization period, India's share of FDI inflows in exports remained 0.9 per cent during pre-globalization period (1976-91). However, this share in case of world was 4.3 per cent during the same period. Thus, India's share was quite insignificant during the pre globalization period. Nevertheless, during post globalization period (1992-2007), India's share of FDI inflows in exports increased from

1.3 per cent in 1992 to 17 per cent in 2007. However, in case of world, this share increased from 4.4 per cent to 14.13 per cent during this period. Overall during 1992-2007, India's share was 10.2 per cent as compared to 10.9 per cent of the world. It may be noted that the volume of India's FDI inflows increased from US$ 0.3 bn in 1992 to US$ 23 bn in 2007. Furthermore, this volume increased from US$ 1.4 bn during pre globalization period to US$ 90 bn during post globalization period. Hence during post globalization period, India's growth of FDI inflows was significant, and showed better performance as compared to world since 2006.

Table V: Share of FDI Inflows in Exports of India and World during 1976-2007

(Value in US$ bn & Share in per cent)

Year	FDI Inflows		Exports		Share	
	India	World	India	World	India	World
1976	0.05	22	5	901	1.0	2.4
1980	0.08	54	8	1833	1.0	3.0
1985	0.11	56	8	1875	1.3	3.0
1990	0.24	207	18	3382	1.3	6.1
1991	0.08	156	18	3493	0.4	4.5
1976-91	**1.4**	**1416**	**161**	**32722**	**0.9**	**4.3**
1992	0.3	167	19	3748	1.3	4.4
1995	2.2	341	31	5081	7.0	6.7
2000	3.6	1398	43	6386	8.4	21.9
2005	7.6	959	98	10359	7.8	9.3
2006	19.7	1411	122	11961	16.1	11.8
2007	25.1	1979	147	13987	17.0	14.1
1992-2007	**90**	**11987**	**880**	**110453**	**10.2**	**10.9**

Source: UNCTAD, World Investment Report 2008
WTO, International Trade Statistics,2008 &2009

FDI and Trade Relationship
A substantial number of studies concerned with the apparent relationship between FDI and trade. The Heckscher-Ohlin theorem in the trade theory indicates that FDI as a factor of production is a substitute. Mundell (1957) also holds that international mobility of factors of production, including FDI, may be a substitute for international trade, if production functions are identical across countries. This proposition was challenged by a number of studies (Helpman 1984; Helpman & Krugman 1985; Markusen 1998; Gray 1998) which suggested that the relationship between FDI and trade is complementary. These studies suggest that the relationship between FDI and trade is a function of motives of the firm to undertake FDI. If the motive is for market seeking, FDI and trade tend to replace each other, therefore, substitution relationship occurs. However, if the motive is for efficiency seeking, relationship between FDI and trade is complementary in that an increase in the amount of FDI leads to an increase in the level of trade. From the viewpoint of firm's location choices, whether FDI and trade are complements or substitutes depends on whether FDI is 'horizontal' or 'vertical'. Horizontal FDI takes place when TNC produces the same goods and services in multiple countries in order to avoid paying the 'trade costs' of exporting goods from one country to another, and wishes to exploit its firm specific advantages in production. With trade liberalization, trade costs will diminish. In this case, FDI and trade are substitutes. Vertical FDI takes place when TNC has its headquarters located in the home country and several production sites located in the host country where cheaper costs of production and input resources are available. If the differences in factor endowments are significant between countries, the headquarters tend to export capital equipment and factor services, such as R&D, to the host country, and in return the host country exports input resources to the home country. In this case, FDI and trade are complements. For instance, NAFTA made production sharing between USA and Mexico in the automobile sector. While capital intensive part was concentrated in US, the labour intensive part was transferred to Mexico. This resulted in a significant increase in FDI inflows to Mexico.
Causal links between FDI Inflows and Export Trade
The FDI-exports nexus has received less attention in academic discussion. The direction whether FDI causes exports or exports cause FDI is also a matter of dispute. The empirical evidence on the causal relationships between FDI and exports is equally contradictory, with results ranging from unidirectional causality, bidirectional causality, or even no causality between FDI and exports. Sharma (2000) argues that 'the success stories of East and South East Asian countries suggest that FDI is a powerful tool of export promotion', through tapping export opportunities and taking advantage of a country's comparative advantage. Liu et al. (2002) concludes that there were interlinkages between FDI and exports in China. They suggest that the growth of FDI causes the growth of exports. In fact, it is the quality of FDI that matters for a country like India rather than its quantity. FDI is often supposed to be of higher quality if it is export oriented and transfers foreign technologies to the host country. The character of FDI in India has changed in the post-globalization period. The post-globalization period is not only characterized by booming FDI, but also changing sector and industry-wise composition of FDI. The increasing export orientation of FDI appears to be due to the emergence of new industries that attracted FDI, and rising shares of exports in the production of industries in which FDI has a longer tradition.

The evidence of causal links between trade and FDI is limited, with much of the work in this area is based around Granger causality testing (Granger 1969). PachecoLópez (2005) based on Mexican data shows that the causality between FDI and exports occurs in both ways, in that exports encourage foreign direct investment to the country, and in turn, FDI inflows boosts the country's exports. This result is consistent with the one concluded in the previous research by Alguacil et al. (2002).

Granger Causality Testing for India

In this study, the causal relationships between FDI and exports of India in bivariate frameworks have been investigated by using Granger causality test (Gujrati, 1995) for the data set of post globalization period (1992-2007). The Null Hypothesis of the study is "FDI does not cause exports and vice versa". The unit root test[6] has also been used for checking the stationary of data. The current values of FDI are deflated by the GDP deflator of India and denoted as Real FDI. Current values of exports are deflated by India's export price index, and denoted as Real Exports. Both these deflators are taken from the Economic Survey 2007-08, and the base year for all deflators has been converted to 1999-2000. The estimation results are depicted in Table VI.

Table VI: Causality Between FDI and Exports in India during 1992-2007

Direction of Causality	Number of Lags	Number of Cases	Number of Parameters in unrestricted Regression	Residual Sum of Squares in restricted Regression	Residual Sum of Squares in unrestricted Regression	Estimated F - Value$	Tablular F - Value at 5% level for df 2(m) & 9 (n-k)	Decision
	m	n	k	RSS_r	RSS_ur	F	F0.05	
FDI → Exports	2	14	5	131.958	113.833	40.78	4.26	Rejection
Exports → FDI	2	14	5	15.864	12.887	6.69	4.26	Rejection

Note: $ means $F = ((RSS\_r - RSS\_ur)/m)/(RSS\_ur/(n - k))$

Source: Computed from the data of UNCTAD, World Investment Report 2008

Table VI shows the rejection of null hypothesis. The estimated value of F is more than table value of F at 5 per cent level of significance. So, null hypothesis is rejected. Hence FDI causes exports and vice versa. The significance of F-statistics implies a strong bi-directional causality between FDI and exports in India. It means bi-directional Granger causality exists between FDI and exports in India during post globalization period. The estimation results suggest a positive causal relation from FDI to exports and vice versa. Furthermore, post globalization period in India may have helped to create a more open trade environment and hence generate positive net FDI benefits. These findings support the view that FDI influences exports thorough technology transfer, thereby raising general productivity.

Summing Up

India initiated economic reforms consisting of liberalization, privatization and globalization of the economy in July 1991. There has been an appreciable increase in the growth of FDI and exports. In the domain of FDI inflows, the post-globalization period (1992-2007) has witnessed a substantial rise, as compared to pre-globalization period (1976-1991). Trade liberalization has had a favourable effect on FDI inflows into India. The FDI inflows into India increased from US $ 0.3 bn in 1992 to US $ 41.6 bn in 2008. The FDI inward stock of India increased from US$ 2 bn in 1992 to US$ 76.2 bn in 2007. With 17 per cent of world population and 2.2 per cent of world geographical area, India's share in world GDP was 2.2 per cent only in 2007. Nevertheless, it became 8th largest FDI recipient and 12th largest exporter among the developing countries of the world in 2007.

In spite of the remarkable increase in FDI inflows, the share of India in the global FDI inflows increased from 0.1 per cent to 0.7 per cent during pre and post globalization period. Its share in global FDI inflows and exports was 1.3 per cent and 1.1 per cent, respectively, in 2007. However, India's share in the FDI inflows of the developing countries was 4.7 per cent during this period. The performance of FDI in India, as evaluated by the UNCTAD, has been quite low. Among the 141 countries for which the performance index was prepared, the ranking (in the descending order) of India was 106 for inward FDI and 50 for outward FDI in 2007. Hence India has to look into its limitations in order to improve this position.

It is relevant to note that the share of FDI inflow, as percentage of total exports of India, increased from 0.9 per cent during the pre-globalization period to 10.2 per cent during the post-globalization period. Compared to it, the share of FDI in total exports of the world increased from 4.3 per cent to 10.9 per cent during the same period. This share of India has been more than world since 2006. Similarly, the share of FDI inward stock in the GDP of India increased from 0.4 per cent during the pre-globalization period to 4.3 per cent during the post-globalization period. However, the share of FDI inward stock in the GDP of the world increased from 7.8 per cent to 18.2 per cent during the same period.

India has great potential to become a significant exporter of labor-intensive products, such as textiles and other consumer goods. The Granger causality link indicates the bidirectional causality between FDI and exports in India during post globalization period. The findings support the view that FDI influences exports thorough technology transfer, thereby raising general productivity. India's success in export promotion through FDI might be somewhat special due to its unique advantages in large country-size, strong centralized government, and well-designed FDI strategy in bargaining with TNCs. Therefore, India should not only promote FDI from overseas, but

also create a conducive environment and adopt more liberal policy frameworks to attract new FDI and maximize net benefits.

Notes:

1. FDI includes equity capital, reinvested earnings and intra-company loans. Equity capital is the foreign direct investor's purchase of shares of an enterprise in a country other than that of its residence. Reinvested earnings comprise the direct investor's share of earnings reinvested. Intra-company loans refer to short- or long-term borrowing and lending of funds between direct investors (parent enterprises) and affiliate enterprises.

2. Transnational corporations comprise parent enterprises and their foreign affiliates. A parent enterprise is defined as an enterprise that controls 10 per cent of more assets or equity capital stake in countries other than its home country. A foreign affiliate means an investor, who is resident in another economy, owns an equity stake of 10 per cent or more of an enterprise.

3.   RTA aims to achieve the goal of total economic integration through various forms of economic integration from its lower to higher, which are Preferential Trade Agreement (PTA), Free Trade Agreement (FTA), Customs Union (CU), Common Market, Economic Union, and Total Economic Integration.

4.   FDI stock is the value of the share of their capital and reserves (including retained profits) attributable to the parent enterprise, plus the net indebtedness of affiliates to the parent enterprises.

5.   FDI stock Inward and Outward mean the total FDI inflows from the rest of world within the country and the total FDI outflow to the rest of world from the country, respectively.

6. Unit Root Test is used to find the order of integration in order to know whether a series is stationary or not. The equation is $Y_{t\ =}\ \rho Y_{t-1}\ +\ u_t$ where Y is variable, t is time, and u is the white noise error term.

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EXPECTATIONS OF INDIAN FARMERS IN THE REGIME OF WTO: AN FACTOR ANALYTIC APPROACH

Sanjeev Gupta
Faculty,
Deptt. of Humanities and Management
Dr. B. R. Ambedkar National Institute of Technology
Jalandhar.

Abstract

The present paper made an attempt to identify the factors affecting the growth of Indian agriculture. A sample of 409 farmers was collected from five northern states of the country by using simple random sampling technique. Data were collected by direct personal investigation and the results of the analytical study subjected to exploratory factor analysis. Principal Component Analysis (PCA) was followed with varimax orthogonal rotation and results of the study based on factor analysis, indicated that the farmers were serious concerned about their decreasing day to day income, ready to pay higher canal water and electricity charges, subsidy should also be available other than urea, taxes on inputs, pesticides and fertilizer should be decreased, MSP to cover all day to day expenditure of the farmers.

Introduction

Indian economy is basically an agrarian economy and its prosperity is largely dependent upon the progress of agriculture. Agriculture sector is the most important sector of national economy. This contributes slightly less than twenty percent in the GDP and provides employment opportunity to more than 65 percent of the country's population directly or indirectly engaged in the sector.

India made significant advances towards achieving its goals of repaid agricultural growth, improving food security, and reducing rural poverty during the last four decades. Sustained growth of food grain (rice and wheat) production that exceeded the population growth rate eliminated the threat of famines and acute starvation in the country. Government of India (GOI) investments in agricultural research and extension, irrigation and other rural infrastructure - complemented by subsidies for key inputs such as fertilizer, water and improved seeds - launched the country into the "Green Revolution" era in 1964-66.

At present, the Green Revolution of seventies has turned sour and agriculture is passing through a deep crisis. The farmer of today is not only experiencing a slow down in agricultural productivity and rise in input costs but also decline in income and volatility of the market caused by increasing global integration. This led to increase in the rate of suicides among the farmers. On one hand the income or MSP of product produced by the farmer is not increasing as fast as it should be and on the other hand cost of inputs is continuously showing an upward trend. The mismatch between cost and income is widening day by day. This has threatened the livelihood of the farming community in the country.

Agriculture in India continues to be a decentralized activity where millions of individual farmers take decisions in a free institutional setting regarding investment, crops to be grown, input mix to be used, and the amount of produce to be sold, within the infrastructural and policy environment provided by the Government. As a result the allocation of resources by the farmers has by and large, been efficient, even though certain factors can be identified, which can play a major role in this regard. The factors like agricultural input subsidies, productivity level, income, research and development, subsidies on advance machinery, infrastructure and MSP etc. can become the determined force for the farmers to take efficient decision and hence affect the growth of agriculture sector in the country. Agriculture in India is at crossroads today; on one hand there has been decelerations of growth in recent years, with the added pressure from WTO, the Indian farming is on the verge of collapse.

Keeping the WTO factor into consideration many empirical studies has been conducted so far, the review of the existing literature revealed that hardly there is any study conducted empirically intriguing the farming community into consideration. Present paper is a serious attempt in this direction in order to fill the existing research gaps.

Data Base and Analytical Tools

The study is based on the primary data. A structured and non-disguised questionnaire was used to collect the data from 430 farmers from five northern states namely Punjab, Haryana, Uttar Pradesh, Jammu & Kashmir and Himachal Pradesh.

Table – 1 : Detailed Bifurcation of Sample

State	No. of Villages Selected from Each State	No. of Families Per Village	No. of Sampling Units
Punjab	10	20	200
Haryana	4	20	80
Jammu & Kashmir	5	10	50
Himachal Pradesh	5	10	50
Uttar Pradesh	5	10	50
Total	**29**	**70**	**430**

Source: Based on primary data.

For the collection of the data, simple random sampling technique has been used. The questionnaire is composed of Likert Scale type questions and it consists of 18 statements (see Table 2 for more detail). A pilot survey was conducted for pre-testing the questionnaire. The questionnaire was first got filled up from twenty five farmers only. After the pilot survey, certain modifications were made in the questionnaire, which was used for the

detailed study. After scrutiny and auditing of the questionnaires, 409 responses were found to be adequate and rest of the questionnaires having certain ambiguities were discarded from the sample. So as a whole primary analysis is based upon a sample of 409 farmers. This helps in preparing the case for application of factor analysis.

Table – 2: **Average Score and Standard Deviation of Statements Included in the Survey Instrument**

Code	Statement	Average Score	Standard Deviation
X_1	Depleting water table is a serious concern.	2.4156	1.3962
X_2	MSP to cover all day to day expenditure of the farmers.	1.7286	0.4873
X_3	Productivity level is continuously decreasing.	1.3814	0.5699
X_4	Farmer income is inadequate to meet the basic needs.	1.8020	0.5961
X_5	BT Cotton like seeds should be subsidized.	2.0024	0.5216
X_6	Ready to pay higher canal charges.	1.7237	0.4845
X_7	Decreasing farm income is a serious concern.	1.5550	0.5216
X_8	Agriculture should be integrated with national market.	1.6308	0.5451
X_9	WTO is responsible for less price of the farmers produce.	2.3447	1.0223
X_{10}	Direct subsidy should be given to the farmers.	1.9144	0.6493
X_{11}	The credit subsidy should be enhanced.	1.7726	0.6857
X_{12}	Ready to pay Rs. 3/-pkw if power condition improves and it's available round the clock.	2.2323	1.0205
X_{13}	Subsidy on advanced machinery should be given.	1.6724	0.6457
X_{14}	Export subsidy should be provided at par with developed nations.	1.9633	0.6760
X_{15}	Taxes on Inputs (pesticides and fertilizer) should be decreased.	1.9682	0.6690
X_{16}	R & D expenditure by the Centre /State Government must be enhanced.	2.3814	1.0485
X_{17}	Subsidy should also be available on fertlizers other than urea.	1.7848	0.5217
X_{18}	Agriculture investment and subsidies should be taken as complementary to each other.	1.9291	0.6242

Reliability of the Scale

In the present study reliability of the scale was checked by applying Cronbach Alpha (Cronbach,1951). Its value has been found to be 0.6460 ensuring the reliability of used scale.

Data Adequacy Test for Factor Analysis

Before application of Factor Analysis, it is obligatory to check the adequacy of the collected data. Present study has taken the sample of 409 against 18 variables. Present study qualifies the sample size requirement for applying factor analysis because the minimum sample size should be at least five times of the variables taken under consideration (Hair, 2003; Malhotra 2004).

In the present paper correlations were computed amongst 18 variables and substantial number of correlations were found greater than 0.30. For the factor analysis to be appropriate, enough number correlations should be greater than 0.30 (Malhotra, 2004).Then, anti image correlations were calculated and it was observed that these were very low indicating that true factor existed in the data.

Further, Kaiser-Meyer-Oklin (KMO) Measure of Sampling Adequacy was used to examine the appropriateness of factor analysis. High values (between 0.5 and 1.0) indicate adequacy of data for the use of factor analysis. Here, the computed value of KMO statistic is 0.656 indicating the adequacy of data for factor analysis (Kaiser, 1974; Malhotra, 2004).Bartlett's Test of Sphericity is another adequacy testing measure used in the present study. This test finds the overall significance of correlation matrix and provides the statistical probability that the correlation matrix has significant correlation values among at least some of the variables (Hair, 2003). Here, Bartlett's Test's Chi-square value is 1773.956 (approx), d..f. =153, significant at 0.000. This significant value indicates that correlation coefficient matrix is not an identity matrix. All this ensures the adequacy of data for application of factor analysis.

Results Based on Factor Analysis

After ensuring the reliability of scale and testing the adequacy of data, the set of 18 statements regarding the factors affecting the growth of agriculture sector in the economy were subjected to factor analysis. Principal Component Analysis (PCA) was used for extraction of factors and the number of factors to be retained was on the basis of Latent Root Criterion (Eigen Value Criterion). An Eigen Value represents the amount of variance associated with the factor. Thus, only the factors having latent roots or Eigen Values greater than 1 are considered significant; all the factors with latent roots less than 1 are considered insignificant and dropped (Hair, 2003). Only seven components have Eigen Values greater than unity and total variance accounted for by these seven factors was 67.088 percent and the remaining 32.912 percent was explained by other factors.

Further, the Component Matrix (without rotation) was constructed. In component matrices (with and without rotation), the factor loadings greater than 0.45 were retained (ignoring signs). Although the unrotated factor matrix indicates the relationship between the factors and individual variables, it seldom results in factors that can be interpreted, because factors are correlated with many variables (Malhotra, 2004). The solution to the above

problem lies in Varimax Rotation. This method minimises the number of variables that have high loading on a factor and there by enhancing the interpretability of factors (Sen and Pattanayak, 2005; Malhotra, 2004). Rotation does not affect the communalities and the percentage of total variance explained. However, the percentage of variance accounted for by each factor does change. The variance explained by the rotated factors is redistributed by rotation.

Perusal of Table 3 revealed that there are seven factors which together accounted for 67.088 percent variance. Thus, a model with these seven factors can be considered adequate to represent the whole data. The percentage of variance explained by the factors 1 to 7 is 13.591, 24.781, 34.792, 43.362, 51.852, 59.566 and 67.088 respectively. The percentage of total variance is used as an index to determine how well a particular factor solution accounts for what all the variables together represent. Communalities have also been shown in the last column of Table 3. Communality shows the amount of variance a variable shares with all the other variables being considered. It can also treat as the proportion of variance explained by the common factors. The size of communalities is the index for assessing how much variance in a particular variable is accounted for by the factor solution. Large communalities indicate that a large amount of variance in a variable has been extracted by factor solution while small size of communalities shows that a significant amount of variance in a variable has not been accounted for by the factor solution.

Table – 3: Varimax Rotated Factor Loading Matrix

Statements	Factors							Communalities
	1	2	3	4	5	6	7	
X_7	0.822	-3.29E-02	7.663E-02	4.766E-02	-7.58E-02	-0.115	9.727E-02	0.713
X_8	0.737	2.218E-02	7.548E-02	5.519E-02	-0.117	-0.218	-0.114	0.627
X_{12}	0.687	3.844E-02	0.100	-8.82E-02	0.447	0.211	-6.79E-02	0.740
X_6	0.511	7.747E-02	0.393	0.350	-0.109	-0.279	-1.99E-02	0.634
X_{18}	-0.153	0.762	0.191	4.902E-02	-0.112	-8.21E-02	-0.135	0.680
X_{17}	-1.46E-02	0.708	-0.335	-9.68E-02	0.153	-8.04E-02	0.155	0.677
X_{15}	0.199	0.602	0.381	0.147	2.152E-02	0.436	-4.01E-03	0.759
X_{13}	0.312	0.516	-5.66E-02	0.267	0.136	-0.328	-0.156	0.589
X_2	3.053E-02	1.997E-02	0.718	7.109E-02	0.270	-0.166	8.394E-02	0.629
X_4	0.203	5.586E-03	0.706	-0.170	-0.266	5.153E-02	6.196E-02	0.647
X_{10}	-6.30E-02	5.022E-03	-0.178	0.856	-6.41E-02	0.143	1.892E-02	0.856
X_{14}	0.297	0.401	0.198	0.507	0.332	0.103	3.907E-02	0.667
X_{11}	0.219	4.842E-02	0.285	0.494	0.234	-0.257	-0.266	0.567
X_3	0.144	1.491E-02	8.327E-02	-6.63E-02	0.820	-1.12E-02	0.139	0.723
X_{16}	0.152	0.277	0.348	-2.02E-02	0.495	1.383E-02	0.369	0.603
X_9	-0.325	-0.164	-0.156	0.125	4.878E-02	0.756	1.263E-02	0.746
X_5	3.255E-03	-0.160	9.457E-02	7.956E-02	-9.71E-02	-0.369	0.751	0.750
X_1	-5.92E-02	3.845E-02	2.514E-02	-9.62E-02	-1.71E-02	0.245	0.676	0.532
Eigen Value	2.446	2.014	1.802	1.543	1.528	1.388	1.354	
Percentage of Variance Explained	13.591	11.190	10.011	8.570	8.490	7.713	7.522	
Percentage of Cumulative Variance Explained	13.591	24.781	34.792	43.362	51.852	59.566	67.088	

Communalities are considered high if they are all 0.8 or greater but this is unlikely to occur in real data. Generally accepted value of communalities are between 0.40 to 0.70 (Costello and Osborne, 2005). In our study, all the communalities are above 0.5.

Factor Labeling

In the present study as compared to the other studies we have given symbolic tags. The factors along with their codes and factor loadings are given in Table 4.

Table – 4:   Interpretation of Factors

Factor	Loadings (Communalities)	Statements Included in the Factor
F_1	0.822 (0.713)	Decreasing farm income is a serious concerned (X_7).
	0.737 (0.627)	Agriculture should be integrated with national market (X_8).
	0.987 (0.740)	Ready to pay Rs. 3/- pkw if power condition improves and it is available round the clock (X_{12}).
	0.511 (0.634)	Ready to pay higher canal charges (X_6).
F_2	0.762 (0.680)	Agriculture investment and subsidies should be taken as complementary to each other (X_{18}).
	0.708 (0.677)	Subsidy should also be available other than urea (X_{17}).
	0.602 (0.759)	Taxes on inputs (pesticides and fertilizer should be decreased (X_{15}).
	0.312 (0.589)	Subsidy on advanced machinery should be given (X_{13}).
F_3	0.718 (0.629)	MSP to cover all day to day expenditure of the farmers (X_2).
	0.706 (0.647)	Farmer income is inadequate to meet the basic need (X_4).
F_4	0.856 (0.793)	Direct subsidy should be given to the farmers (X_{10}).
	0.507 (0.667)	Export subsidy should be provided at par with developed nations (X_{14}).
	0.494 (0.567)	The credit subsidy should be enhanced (X_{11}).
F_5	0.820 (0.723)	Productivity level is continuously decreasing (X_3).
	0.495 (0.603)	R & D expenditure by the Centre/ State Government must be enhanced (X_{16}).
F_6	0.756 (0.746)	WTO is responsible for less price of the farmers produce (X_9).
---------- --------	0.751 (0.750)	BT Cotton like seeds should be subsidized (X_5).
	0.676 (0.532)	Depleting water table is a serious concern (X_1).
F_7		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.

Factor-1

Perusal of Table 4 reveals that the most significant factor with 13.591 percent of total variance. Total four variables X_7, X_8, X_{12} and X_6 have been positively loaded on this factor. This factor reveals that decreasing farm income is a serious concern; agriculture should be integrated with national market. Farmers are ready to pay high electricity and canal charges. This factor further advocates that the farmers are looking for better input services even at higher charges.

Factor-2

Analysis of Table 4 shows that it is the second important factor with 11.190 percent of variance explained. This factor reveals that investment and subsidies which are given to agriculture sector is playing major role in the development of the sector. The four variables have been loaded on this factor. Variables- X_{18}, X_{17}, X_{15} and X_{13} have been positively loaded. The farming community is still demanding subsidy on other than urea fertilizers, subsidy on advanced machinery. The subsidy and investment should work together for the development of agriculture sector in the country. Farmers believed that taxes on pesticides and fertilizers should also be decreased.

Factor-3
Examination of Table 4 reveals that it is the third important factor explaining 10.011 percent of total variance with two variables X_2 and X_4 loaded on it. All the variables are positively loaded on this factor MSP must cover-all day today expenditure of the farmers and farmers still believe that their income is inadequate to meet the day today expenditure.

Factor-4
The Table 4 highlights that is fourth important factor explaining 8.570 percent of total variance with three variables X_{10}, X_{14} and X_{11}. All the variables are positively loaded and farm community advocates for higher direct and input subsidies given to agriculture sector in the country. The export subsidy for agriculture export should be given at the par with developed nations; so that Indian farmers can increase the export of agricultural commodities which inurns affects the income of the farmers.

Factor-5
Persual of Table 4 shows that it is the fifth factor explaining 8.490 percent of total variance with two variables. Both the variables are positively loaded. Indian farmers believed that agriculture productivity level is continuously decreasing and centre and /or state government must provide more resources for R & D in the country.

Factor-6
In factor-6, only one positive variable has been loaded in it. The factor explaining 7.713 percentage of total variance. This factor explains that the less price of farmer produce is due to WTO.

Factor-7
The last factor i.e., seventh factor contains only two variables- X_5 and X_1. Both the variables are positively loaded. The factor explaining 7.522 percent of total variance. Farmers believed that new good quality seeds should be subsidized and water saving techniques must be subsidized so that depleting water table can be checked.

Concluding Remarks
Hence, in the light of the empirical analysis certain important suggestions can be drawn for rejuvenating the Indian agriculture sector to such extent where it can become more viable even in the new scenario of WTO/AOA.

For the balanced application (consumption) of NPK, there is a need for correction in the prices of different groups of fertilizers. The input-subsidy regime should be accompanied by direct subsidy for resource poor farmers. The output subsidy system should run parallel to input subsidy system. With due passage of time, the output subsidy system should out grow input subsidy system and over power it. The output subsidy is more transparent and is not grabbed as in the case of input subsidies. Output subsidy has larger multiplier effect and is more WTO compatible. There is also a need to link the quality of service to price, when this is assured, even tariff hikes on inputs may become more acceptable to farming community. The Government must increase allocation of funds to agriculture sector through investment and various employment programmes for land less labourers. There is also a need to enhance the value addition in agriculture sector. For this there is a need to set up more agro-processing units so that more export of agricultural products is possible. In this regard, all agro-processing units in Rural Bharat should be exempted from income tax, excise duty, value added tax and labour laws.

Therefore, it may be inferred that as far-reaching changes in domestic and global markets are creating big opportunities for Indian farmers. The demand for high-value primary and processed products is rapidly increasing, driven by rising incomes, faster urbanization, liberalized trade, foreign investment and advancing technology. Under such scenario, the agriculture has bright future, if it can be properly tapped.

There is a scope for further research covering the entire India and increasing the sample size. Moreover comparative studies can be conducted amongst other developing countries as well as India at the grass root level.

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IMPACT OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR ON ORGANIZATIONAL EFFECTIVENESS IN FOOD PROCESSING INDUSTRY

Luxmi,
Sr. Lecturer, UBS, Panjab University
Sulakshna Dwivedi,
Senior Research Fellow, UBS, Panjab University

Abstract

This study was designed to compare Organizational Citizenship Behaviours of the employees in public and Private sector organizations in Food Processing Industry and to investigate the relationship between OCBs and Organizational Effectiveness. The scope of the study was Public and Private Sector Organizations belonging to Punjab, Haryana and Chandigarh in Food Processing sector. The sample comprised of 196 respondents drawn from three Public Sector organizations, and six Private sector organizations. The results revealed a very significant and positive correlation between two subscales of Organizational Citizenship Behaviours and clearly support the idea that aggregated OCBs are related to organizational effectiveness indicators. Specifically, as employees exhibited Sharing and Involvement, Flexibility in the Organizations, Acquisition of Resources, Communication, Satisfied and Cohesive workforce and Productivity and Efficiency increases. Professional Commitment was associated with Flexibility, Communication, stability and Productivity and Efficiency indicators of Organizational Effectiveness. Organizational Ownership was associated with satisfied workforce. None of the OCBs could predict Planning indicator of Organizational Effectiveness.

1. Introduction

Barnard (1938) was among the first to explicitly address the need for behaviors that go beyond delineated roles. Katz and Kahn (1978) noted that not only must employees engage in role-prescribed behaviors, they also must be willing to engage in innovative and spontaneous behaviors that go beyond those role prescriptions in order to ensure organizational vitality and effectiveness. Organ (1988) originally coined the term organizational citizenship behavior (OCB) and defined them as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization." Also, the willingness of participants to go beyond the formal requirements of their positions has been recognized as an essential component of effective organization. Thus, OCBs can be said to "lubricate the social machinery of the organization".

Organizational citizenship behaviours (OCBs) are employee work behaviours such as helping others, staying late, or working weekends, performing at levels that exceed enforceable standards, tolerating impositions or inconveniences on the job, and being actively involved in company affairs (Podsakoff *et al.*, 2000).

Citizenship behaviors are often performed by employees to support the interests of the group or organization even though they may not directly lead to individual benefits. Examples of citizenship behaviors may range from helping a co-worker with a job-related problem even when such help is not required to wearing the company logo on a sweatshirt while attending a charity event. What is important is that both these examples describe behaviors which are helpful to the company, yet they are not behaviors considered part of the core elements of the job. Thus, managers often find it difficult to reward good citizenship directly, as well as difficult to punish directly the absence of such citizenship. A good citizen is an employee who offers support to the organization even when no such support is or can be expressly required. OCBs are similar to prosocial organizational behavior (Brief and Motowidlo, 1986) and organizational spontaneity (George and Brief, 1992), but some important differences exist. Prosocial organizational behavior (POB) describes a broad spectrum of helping behaviors which include many OCBs. However, POB also includes behaviors which might be helpful to an individual in the organization, but would be dysfunctional to the organization (i.e. an employee might help someone cover up performance problems). Organizational spontaneity (OS) is like OCB in that it only includes functional behaviors, but OCBs are not directly recognized by the organizational reward system, while OS could be part of such a reward system.

To date, researchers have proposed a variety of specific dimensions of organizational citizenship behavior. Organ (1988) provided a multi-dimensional scale of OCB. The scale consists of five dimensions that make up the OCB construct. The five dimensions are: (1) Altruism, which concerns with helping one employee in completing his or her task under unusual circumstances (2) Conscientiousness, which refers to an employee performing his or her assigned tasks (in-role behaviors) in a manner above what is expected. (3) Sportsmanship refers to stressing the positive aspects of the organization instead of negative. (4) Civic virtue, which involves support for the administrative functions of the organization. (5) Courtesy, which includes proactive gestures that consider consulting with other workers in the organization before acting, giving advance notice, and passing along information.

Other dimensions include obedience, loyalty, advocacy participation, social participation, functional participation (Van Dyne *et al.*, 1994), helping and voice (Van Dyne *et al.*, 1995; Van Dyne and LePine, 1998), as well as organization-focused and interpersonal-focused organizational citizenship behavior (Williams and Anderson, 1991).

A review of the literature on citizenship indicates that researchers generally maintain that OCBs stem from two motivational bases: (1) job attitudes and/or (2) disposition/ personality (Organ and Ryan, 1995). The relationship between OCB and job attitudes is rooted in social exchange theory-that is, employees engage in OCBs

in order to reciprocate the actions of their organizations. The second rationale holds that OCBs reflect an individual's predisposition to be helpful, cooperative, or conscientious. Research on citizenship has almost exclusively concerned antecedents consistent with these theoretical bases. Examples of the antecedents examined by researchers include job attitudes such as job satisfaction (Bateman and Organ, 1983; Smith, Organ and Near, 1983; Williams and Anderson, 1992), organizational commitment (Becker, 1992), perceptions of fairness (Moorman, 1991), job cognitions (Organ and Konovsky, 1989), dispositional factors (e.g., agreeableness, conscientiousness, and equity sensitivity; Konovsky and Organ, (1996), positive affect (George, 1991), concern for others (McNeely and Meglino, 1994), organizational justice (Niehoff and Moorman, 1993), and collectivism (Moorman and Blakely, 1995). Additionally, OCB has been found to be related to task characteristics (Farh *et al.*, 1990; Moorman and Sayeed, 1992), and interpersonal trust (Podsakoff *et al.*, 1990).

The common denominator across these studies is the notion that citizenship stems from an individual's desire to help others or the organization because of disposition or a sense of obligation; describing such individuals as "good soldiers" or "good citizens" reinforces this idea.

As early as 1964, Katz recognized the importance of organizational citizenship behavior for organizational effectiveness. Katz (1964) identified three categories of employee behavior essential for organizational effectiveness. According to Katz, individuals must first be induced to enter and remain with an organization; as employees, they must carry out specific role requirements in a dependable fashion; and they must engage in innovative and spontaneous activity that goes beyond role pre-scriptions.

A number of other researchers (Bateman and Organ, 1983; Karambayya, 1990; Organ, 1988; Podsakoff and MacKenzie, 1994; Schnake, 1991; Smith *et al.*, 1983; Williams and Anderson, 1991) have suggested that OCBs facilitate organizational effectiveness, efficiency, and success because performance of these behaviors makes for a more proficient use of existing resources; enables superiors to devote more time to productive activities such as planning, scheduling, problem solving, and organizational analysis; and enhances coworker productivity. Despite the intuitive plausibility of these assumptions, little empirical research (Karambayya, 1990; MacKenzie *et al.*, 1996; MacKenzie *et al.*, 1991, 1993; Podsakoff *et al.*, 1997; Podsakoff and MacKenzie, 1994) has explored the relationship between OCBs and the effective functioning of an organization. Empirical studies that have been conducted examined the effects of OCBs on managerial evaluations of individual and unit-level performance. Only, organizational effectiveness is defined more broadly than individual- or unit-level performance (Etzioni, 1964; Hall, 1991; Katz and Kahn, 1966; Quinn and Rohrbaugh, 1983; Steers, 1977; Yuchtman and Seashore, 1967; Zammuto, 1982). Worker cohesion, quality, innovativeness, adaptability, ability to transact with the environment, productivity, efficiency, profit generation, goal realization, resource procurement, information management, and communication—all attributes that can be viewed as means either of increasing the efficiency of the productive process or of gaining access to greater or more valued resources—have been noted as aspects of organizational effectiveness. As a group, then, OCB-performance studies shed little light on the question of whether aggregate OCBs relate to overall organizational effectiveness.

3. Methodology

3.1 Present study

The above mentioned and other similar studies made the plot for the present study. The authors attempt to study Organizational citizenship behaviors of employees and Organizational Effectiveness in two strata of culturally diverse organizations. In all, nine organizations belonging to Punjab, Haryana and Chandigarh region were studied comprising of three Public sector organizations and six Private sector organizations in Food Processing Industry. Description of the organizations is depicted in Table 1.

Table 1:   **Targeted Organizations**

Public Sector Organisations	Hafed, Panchkula (Haryana)
	Vita, Ambala (Haryana)
	Markfed, Patiala (Punjab)
Private Sector Organisations	LT Overseas Pvt. Ltd., Jind (Haryana)
	Bonn Nutrients Pvt. Ltd., Ludhiana (Punjab)
	Milk Plant, Jind (Haryana)
	Pepsi Food Pvt. Ltd., Patiala (Punjab)
	Alchemist, Kurali (Punjab)
	Nestle, Moga (Punjab)

3.2 Objectives

The paper studies Organizational citizenship behaviours and its relationship with Organizational Effectiveness in Food Processing Industry (Both Public and Private Sector organizations). The main objectives of the study are as follows:

- To compare the level of Organizational citizenship behaviours of employees in Public and Private Sector of Food Processing Industry.
- To compare the level of Organizational citizenship behaviours of employees among different hierarchical levels in Food Processing Industry.
- To find the correlation between the three subscales-Organizational Ownership, Professional Commitment and Sharing and Involvement

- To find the correlation between Organizational citizenship behaviour of employees and Organizational Effectiveness.
- To explore the variance in Organizational Effectiveness explained by OCBs.

3.3 Hypotheses

H₁.₁ₐ. There is a significant difference between the level of Organizational Ownership of the employees in Public and Private sector Organizations in Food Processing Industry.

H₁.₂ₐ. There is a significant difference between the level of Professional Commitment of the employees in Public and Private sector Organizations in Food Processing Industry.

H₁.₃ₐ. There is a significant difference between the level of Sharing and Involvement of the employees in Public and Private sector Organizations in Food Processing Industry.

H₂.₁ₐ. There is a significant difference in the level of Organizational Ownership at different hierarchical levels.

H₂.₂ₐ. There is a significant difference in the level of Professional Commitment at different hierarchical levels.

H₂.₃ₐ. There is a significant difference in the level of Sharing and Involvement at different hierarchical levels.

H₃.₁ₐ. There is a significant correlation between Sharing and Involvement and Professional Commitment in Food Processing Industry.

H₃.₂ₐ. There is a significant correlation between Organizational Ownership and Sharing and Involvement in Food Processing Industry.

H₃.₃ₐ. There is a significant correlation between Professional Commitment and Organizational Ownership in Food Processing Industry.

H₄. There is a significant correlation between Organizational citizenship behaviours of employees and Organizational Effectiveness in Food Processing Industry.

H₅. Organizational Effectiveness is significantly predicted by Organizational Citizenship behaviours of employees in Food Processing Industry.

3.4 Research Design

The study is descriptive and empirical in nature. Three organizations were chosen from Public sector and six from the Private sector of Food Processing Industry using judgment and convenience sampling. Then data was collected from three strata of managers, supervisors and workers from a sample frame of nine companies using Stratified Random Sampling. Managers, Supervisors and Workers were taken in the ratio of 1:2:3 (Though most of the times, 1:3:15 ratio of employees is used but in order to give a more rational weightage to top and middle level of employees as they are more into policy making, 1:2:3 ratio of employees is preferred). Out of a total of 196 respondents:

- 80 respondents belong to Public Sector and 116 from Private sector in the Food Processing Industry.
- 29 are managers, 76 are supervisors and 91 are workers. 171 are males and 25 are females.
- 164 are married and 32 are unmarried.
- 90 have professional qualifications and 106 are no professional qualifications.

3.5 Measures

Primary data was collected through preliminary interviews and questionnaires ultimately. Instrument Organizational Citizenship behaviour questionnaire (Van Dyne *et al.*, 1995) adapted by Pattanyak *et al.*, 2003 is used to undertake the study. The only difference between this instrument and the other one is that, Dyne's instrument of OCB needs to be administered to three persons ,the person himself, his/her peer and superior. But the technique adopted in this instrument design and its administration is one of projection of one's own needs while evaluating others. That is, whenever the respondents are answering the items as 'my colleagues', they are reflecting their needs in their responses (Morgan and Murray,1938) The scale is multidimensional, suggesting three subscales i.e.; Organizational Ownership (14 items), Professional Commitment (10 items) and Sharing and Involvement (8 items). The cronbach alpha coefficient of the scale was found to be 0.87.

The second part of the questionnaire (Dr. N. Dixit) focused on organizational effectiveness, and included (24) statements covering eight effectiveness measures, as follows:
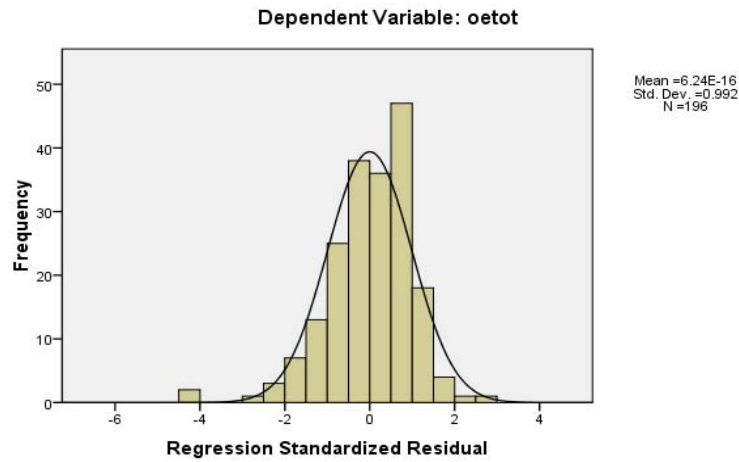
1. Flexibility: Statements 1, 9, 17.
2. Acquisition of resources: Statements 2, 10, 18.
3. Planning: Statements 3, 11, 19.
4. Productivity and efficiency: Statements 4, 12, 20.
5. Communication: Statements 5, 13, 21.
6. Stability: Statements 6, 14, 22.
7. Cohesive work force: Statements 7, 15, 23.
8. Satisfied work force: Statements 8, 16, 24.

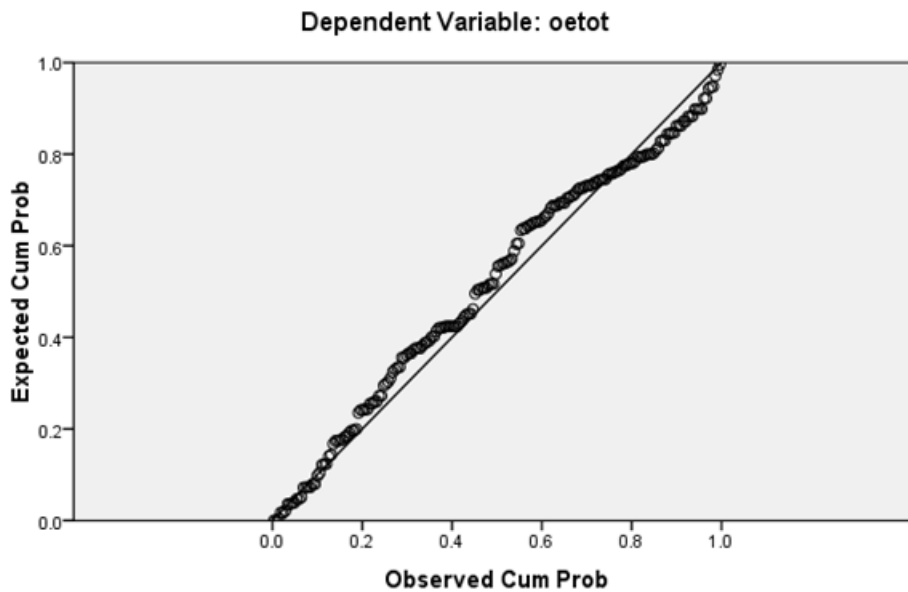Cronbach Alpha coefficients for all effectiveness measures were found to be 0.9339

4. Data Analysis

Preliminary Analysis: Data were examined for outliers and possible errors prior analysis, and none were detected. The data also were screened for possible violations to assumptions of normality and linearity. No violations were found.

Figure 1:   (a) Normal Distribution Curve
            (b) Normal P-P Plot of regression Standardized residual.

Dependent Variable: oetot

Mean =6.24E-16
Std. Dev. =0.992
N =196

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: oetot

4.1 Results of Independent Sample t-test (Comparison vis-à-vis Public and Private sector   Organizations:
The results of Independent Sample t-test suggested no difference in the level Organizational Ownership, Professional Commitment and Sharing and Involvement for the employees of Public and Private sector Organizations, getting p-value more than 0.05 in all the cases. Therefore all the 1st[h] null hypotheses ($H_{1.1a}$. $H_{1.2a}$ $H_{1..3a}$.) i.e. there is no significant difference between the level of Organizational Ownership, Professional Commitment and Sharing and Involvement of the employees in Public and Private sector Organizations in Food Processing Industry may be accepted.

Table 2: Results of Independent Sample t-test (Comparison vis-à-vis Public and Private sector Organizations) of (a) Correlations Group Statistics (b) Correlations Independent Sample test.

Variable	Company	N	Mean	Std. Deviation	Std. Error Mean
Organizational Ownership	Public	80	43.95	4.022	0.450
	Private	116	43.97	2.957	0.275
Professional Commitment	Public	80	32.84	4.365	0.488
	Private	116	33.06	4.576	0.425
Sharing and Involvement	Public	80	27.90	3.232	0.361
	Private	116	28.30	2.887	0.268

(a)

Variable		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	df	Sig. (2-tailed)
Organizational Ownership	Equal variances assumed	7.841	0.006	-0.031	194	0.975
	EVNA			-0.029	135.925	0.977
Professional Commitment	Equal variances assumed	0.203	0.653	-0.341	194	0.733
	EVNA			-0.344	175.077	0.731
Sharing and Involvement	Equal variances assumed	0.027	0.870	-0.912	194	0.363
	EVNA			-0.893	157.170	0.373

(b)

4.2 Results of ANOVA (Hierarchy-wise comparison)
The results of one-way ANOVA suggested no difference in the level of Organizational ownership and Sharing and Involvement among different hierarchical levels (managers, supervisors and workers) (p-value>0.05). Therefore two of the second null hypotheses ($H_{2.1}$ and $H_{2.3}$), that there is no significant difference in the level of Organizational Ownership and Sharing and Involvement at different hierarchical levels may be accepted.
But p-value is less than 0.05 in case of Professional Commitment. So further Post Hoc Test (Scheffe) was applied, but no value of Professional Commitment has been found to be less than 0.05. Hence hypothesis $H_{2.2}$ that there is no significant difference in the level of Professional Commitment at different hierachical levels may be accepted.

Table 3: Results of ANOVA (a) Hierarchy-wise comparison (b) Post Hoc Tests

Variable		Sum of Squares	df	Mean Square	F	Sig.
Organizational Ownership	Between Groups	68.998	2	34.499	3.006	0.052
	Within Groups	2214.676	193	11.475		
	Total	2283.673	195			
Professional Commitment	Between Groups	121.690	2	60.845	3.095	0.048
	Within Groups	3794.126	193	19.659		
	Total	3915.816	195			
Sharing and Involvement	Between Groups	12.942	2	6.471	.702	0.497
	Within Groups	1778.339	193	9.214		
	Total	1791.281	195			

Multiple Comparisons

(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Middle	0.504	0.739	0.793	-1.32	2.33
Lower	-0.778	0.722	0.561	-2.56	1.00
Top	-0.504	0.739	0.793	-2.33	1.32
Lower	-1.282	0.526	0.054	-2.58	0.02
Top	0.778	0.722	0.561	-1.00	2.56
Middle	1.282	0.526	0.054	-0.02	2.58
Middle	-0.519	0.968	0.866	-2.91	1.87
Lower	1.167	0.945	0.468	-1.16	3.50
Top	0.519	0.968	0.866	-1.87	2.91
Lower	1.686	0.689	0.052	-0.01	3.39
Top	-1.167	0.945	0.468	-3.50	1.16
Middle	-1.686	0.689	0.052	-3.39	0.01
Middle	-0.593	0.663	0.671	-2.23	1.04
Lower	-0.767	0.647	0.497	-2.36	0.83
Top	0.593	0.663	0.671	-1.04	2.23
Lower	-0.174	0.472	0.934	-1.34	0.99
Top	0.767	0.647	0.497	-0.83	2.36
Middle	0.174	0.472	0.934	-0.99	1.34

4.3 Results of Karl Pearson's Correlation (Correlation between Sub-scales of OCB):
The results of Karl Pearson's Correlation (Table 4) suggested that there is a very significant ($p < 0.05$) but weak correlation between Organizational Ownership and Sharing and Involvement ($r = 0.182$, $p = 0.010$). A still positive correlation is found between Professional Commitment and Sharing and Involvement ($r = 0.220$, $p = 0.002$) significant at 5 % level of significance. But no significant correlation is found between Organizational Ownership and Professional Commitment. Therefore two of the third null hypotheses ($H_{3.1a}$. $H_{3.2a}$.), that there is no significant correlation between Organizational Ownership and Sharing and Involvement and between Sharing and Involvement and Professional Commitment subscales may be accepted. But third part of third null hypothesis ($H_{3.3a}$), there is no significant correlation between Professional Commitment and Organizational Ownership subscale is rejected.

Table 4: Correlation Matrix for Organizational Citizenship Behaviours and Organizational Effectiveness Measures

S.No.	Variable	1	2	3	4	5	6	7	8	9	10	11
1	Organisational Ownership (OOTOT)											
2	Professional Commitment (PCTOT)	-0.048										
3	Sharing and Involvement (SITOT)	0.182*	0.220**									
4	Flexibility (Oeflextot)	0.151*	0.219**	0.296**								
5	Acquisition of Resources (Oeaquitot)	0.163*	0.131	0.236**	0.691**							
6	Planning (Oeplgtot)	0.161*	0.097	0.217**	0.640**	0.655**						
7	Productivity and Efficiency (Oeprodtot)	0.066	0.183*	0.152*	0.613**	0.653**	0.762**					
8	Communication (oeinfTOT)	0.153*	0.184**	0.208**	0.580**	0.659**	0.714**	0.739**				
9	Stability (oestabTOT)	0.053	0.220**	0.119	0.626**	0.623**	0.650**	0.703**	0.748**			
10	Cohesive Work Force (oecwfTOT)	0.032	0.149*	0.302**	0.540**	0.562**	0.591**	0.586**	0.620**	0.594**		
11	Satisfied work force (oeswfTOT)	-0.097	0.084	0.259**	0.538**	0.552**	0.621**	0.657**	0.617**	0.498**	0.503**	

Note: N=196 *. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation significant at the 0.01 level (2-tailed).

4.4 Results of Karl Pearson's Correlation (Correlation between Organizational Citizenship behaviours and Organizational Effectiveness Measures)

The results of Karl Pearson's Correlation (Table 4) suggested that all the three OCBs dimensions were positively correlated with Flexibility in Organization (r = 0.151 to r = 0.296). Organizational Ownership and Sharing and Involvement are positively correlated with Acquistion of Resources (r = 0.153 and r = 0.236). Organizational Ownership were also positively correlated with Planning and Communication (r = 0.161 and r = 0.153). Professional Commitment were correlated with Productivity , Communication, Stability, Cohesive Work force (r = 0.183, r = 0.184, r = 0.220 and r = 0.149 respectively and Sharing and   Involvement has found to be positively correlated with Planning, Productivity and Efficiency, Communication, Cohesive Work force and satisfied Work force (r = 0.217, r = 0.152, r = 0.208, r = 0.302, r = 0.259) . In all, 16 of 24 correlations were significant and in the directions preferred, reflecting partial support for the notion that when employees exhibit OCBs, the organization is more effective and workforce will be more cohesive and Productivity and efficiency will also be more.

4.5 Results of Regression for Organizational Effectiveness indicators on OCBs

Regression results, presented in Table 5, support the notion that OCBs contribute to Organizational Effectiveness. OCBs significantly contributed to the variance in 7 of 8 effectiveness indicators; Sharing and Involvement appeared to enhance organizational effectiveness to a greater extent than Professional Commitment and Organizational Ownership. Professional Commitment and Sharing and Involvement had a significant positive influence on Flexibility in the Organization ($R^2 = 0.126$, adjusted $R^2 = 0.112$); Productivity and Efficiency ($R^2 = 0.05$, adjusted $R^2 = 0.035$); Communication ($R^2 = 0.081$, adjusted $R^2 = 0.12$) and Stability in the Organization ($R^2 = 0.056$, adjusted $R^2 = 0.041$); Cohesive Work force ($R^2 = 0.056$, adjusted $R^2 = 0.049$); and satisfied Workforce ($R^2 = 0.099$, adjusted $R^2 = 0.085$). Sharing and Involvement had a significant positive relationship with Acquisition of resources ($R^2 = 0.079$, adjusted $R^2 = 0.065$). Organizational Ownership positively influenced Satisfied Work Force No other effectiveness measures were significantly related to OCBs.

Table 5: Significant Regressions for Organizational Effectiveness Indicators on Organizational Citizenship Behaviours (OCBs)

OCBs	Flexibility			Acquisition of resources			Productivity and efficiency			Communication			Stability			Cohesive work force			Satisfied work force		
	B	SE	b	B	SE	b	B	SE	b	B	SE	b	B	SE	b	B	SE	b	B	SE	b
Professional Commitment	0.086*	0.035	.173				0.091*	.041	.163	.092*	.042	.158	.120**	.041	.208						
Shared Involvement	.174***	0.052	0.237	0.134***	0.051	0.191				.129*	.063	.149				.227***	.057	.286	.193***	.049	.282
Organizational Ownership																			-.090*	.043	-.148

Note: For N = 196, Only significant regressions are reported. For Flexibility, $R^2 = 0.126$; for Acquisition of resources, $R^2 = 0.079$; for Productivity and efficiency, $R^2 = 0.050$; for Communication, $R^2 = 0.081$; for Stability $R^2 = 0.056$; for Cohesive work force, $R^2 = 0.099$; for Satisfied work force $R2 = 0.089$
*p < 0.05, ** p < 0.01, *** p < 0.001

5. Discussion

The results of this study clearly support the idea that aggregated OCBs are related to organizational effectiveness indicators. Specifically, as employees exhibited Sharing and Involvement, Flexibility in the Organizations, Acquisition of Resources, Communication, Satisfied and Cohesive workforce and Productivity and Efficiency were higher. This suggest that when employees share the organizational issues and get involved in solving those issues together, they become more cohesive, more satisfied, communication system improves, Flexibility increases, ability of an organization to expand its resources increases which in turn increase the Productivity and Efficiency of the Organization.

Professional Commitment was associated with Flexibility, Communication, stability and Productivity and Efficiency indicators of Organizational Effectiveness. Organizational Ownership was associated with only satisfied workforce. None of the OCBs could predict Planning indicator of Organizational Effectiveness. One possible explanation for the results is that this variable may be out of an employee's control. Because planning is mostly done by higher authorities in the organization. No significant difference was found in the level of Organizational Ownership, Professional Commitment and Sharing and Involvement of employees in Public and Private sector Organizations in Food Processing Industry. No significant difference was found in the level of Organizational Ownership, Professional Commitment and Sharing and Involvement of employees at different hierarchical positions (managers, supervisors and workers).

A very significant correlation, but weak correlation is found between Organizational Ownership and Sharing and Involvement and between Professional Commitment and Sharing and Involvement. But no significant correlation is found between Organizational Ownership and Professional Commitment.

Although overall results are approving the assertion of Organ and Podsakoff that aggregated OCBs are related to Organizational Effectiveness indicators but in this study variance explained by OCB is quite low. One possible reason may be that there are some other factors than OCB like Organisational Culture, Organisational commitment, leadership, and HR practices etc. which also help in enhancing Organisational effectiveness

Following are some limitations of the study, Like OCBs scale could have been administered to three assessors ,one the individual himself/herself, second to the superior and third to colleagues, as it would have provide holistic measurement of OCBs of an employee. Second limitation is about demographic variables of employees. More emphatic results could have been achieved for effect of demographic variable on level of OCBs. (e.g. Difference in the level of OCBs according to gender, age, educational background, experience etc.). Besides it, future research can be conducted in this area by taking sample from different Industries and by overcoming above mentioned limitations.

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