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The elusive employee stock option plan-productivity link: evidence from India

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Abstract

Purpose – The purpose of this paper is to delineate the effect of employee stock option plan (ESOP) on the corporate productivity in view of ever increasing competition among the firms to retain and attract qualified and competent manpower in India.

Design/methodology/approach – Based on productivity characteristics in pre-ESOP adoption period (one year), the research paper studies the ESOP impact on corporate productivity in a three year post adoption period for a sample of 202 listed Indian companies. Nearly half of these companies (99 companies) were classified into control group (non-ESOP companies) and the others (103 companies) were categorized as experimental group (ESOP companies). Asset turnover ratio (ATO), based on the exhaustive literature survey, was identified and considered exclusive productivity parameter in this research. The significance of productivity differentials among the control and experimental groups were tested using the Wilcoxon Signed Rank test.

Findings – The empirical evidence supports the hypothesis that ESOP does not improve the productivity performance of Indian corporate sector in short-run. Furthermore, the variation of the two respective variables is not significant at any level of risk against the alternate hypothesis for 103 ESOP companies.

Research limitations/implications – The results reported in the study are based on the single productivity parameter (ATO) for three year post ESOP measurement period, which is also limiting factors for obvious reasons.

Practical implications – The outcomes of the study have wider implications for the HR professionals (designing a prudent ESOP plan), HR executives (ESOP implementations and its pitfalls) and the corporate-employee combine for enriching mutual benefits for harmonious industrial relations.

Originality/value – The research paper under consideration is expected to be a valuable contribution to the existing literature and to different stakeholders identified above.

Keywords Stock options, Assets, Business performance

Paper type Research paper

Introduction

Productivity issues are becoming imperative in the USA. A more efficient consumption of inputs would swell the productivity in an organization. The inputs of an organization include advanced technology, better management and organization, and endeavor from labor. Labor constitutes the major share of production costs; an increase in labor productivity is likely to exert greater affect on productivity. Labor productivity can be raised through increased work effort. There is no unique way of enhancing work effort in an organization. While factors such as job tenure, unemployment rate, labor turnover and role of supervisor and compensation system may also influence labor-use efficiency. Labor or employee participation in ownership and decision making are also other factors which influence labor efficiency in an

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organization. Employee participation in ownership (equity stake) aligns the employee goals with the organization goals to persuade the work force for attaining higher productivity or efficient utilization of available resources. The employee related productivity should result in improved firm performance, which in turn results in enhanced value for both outside shareholders and employee shareholders. Broad-based variable compensation plans covering an important part of the workforce of a particular firm are often put forward as a critical competitive tool to improve organizational performance (Chingos and and KPMG Peat Marwick LLP Compensation and Benefits Consultants, 1997) In fact, the extent to which ESOP effects worker productivity depends on the organizational structure of the firm.

The firm's productivity depends on employee control rights as well as employee return rights (Ben-Ner and Jones, 1995a, b). Employees with an equity stake may be motivated to work harder, with the result that productivity will increase. According to a Government Accounting Office survey (GAO, 1986) 70 percent of the firms adopting ESOPs expect improved productivity. Employee ownership plans have become worldwide phenomena. The rational is that such plan (ESOPs) highly correlates employee goals with corporate goals and helps to attract talent of managerial executives, retain the employees and enable them to share in strategic decision making of the company. Dynamic ownership culture symbolizes the promotion of the employee ownership, which helps the upward moment of the productivity as well as performance of the company. ESOPs may have some more subtle, indirect on productivity, especially for employees who view their firm principally as a means to earn more income (Jones and Kato, 1993a, b). However, to be economically viable, ESOPs must improve productivity and firm performance through greater employee involvement, morale and satisfaction in India (Kumar, 2004). The unionized employee-owned companies created a considerably better working life for their unionized employee-owners, with more equality, better communication, more training, more opportunities to participate, and a more cooperative relationship between employees and management (Yates, 2006).

The prelude of Indian ESOPs was known from the retention, motivation and collective ownership culture. ESOPs were used as short-term incentives due to the boom in share prices in the Technology-Media-Telecom sector in during 2000. All sectors like Bank, Engineering, Pharmaceuticals, Petrochemicals, Packing, Financing, Entertainment, Electronics, Computers-education, Cement, Automobiles in India are rapidly adopting ESOP. An ESOP as human resource tool came in importance from the last five years when the SEBI (Securities Exchange Board of India) was given (19 June, 1999) broad guidelines on ESOP. The Spirit of suggested provisions seems to be that all the companies have to implement ESOP in a uniform manner by complying with SEBI guidelines. These companies will have some genuine difficulties in complying with SEBI guidelines. A major difficulty will be the accounting for ESOP cost for the Indian industry.

Previous research

Globally, employee stock option is being hotly debated, not for their utility or relevance but for the way in which they should expense in the book of the companies. The expensing framework to be followed by the companies granting equity based compensation is different in different countries. Initially, ESOPs in India became

popular in Information technology since 1 April, 2000. Earlier, many studies have been conducted abroad on Employee stock option plan, some related to productivity, some related to financial performance, some related to ESOP and Dividend, others related to ESOP and share price. The author tried to share with others for knowing an ESOP concept further.

An increase in productivity is associated with a more efficient utilization of inputs, which could result from a number of sources including increased effort from labor, better management and organization and improved technology. An increase in labor productivity is likely to exert greater influence on productivity. On average, the net effect of introducing an ESOP is to increase productivity by almost 7 percent (Jones and Kato, 1993a, b). ESOPs may have some more subtle, indirect effects on productivity, especially for employees who view their firm principally as a means to earn income. Such employees may develop a sense of identity or loyalty to their company and become more interested in the activities of the business and how the enterprise competes with other firms. This increases the general employee interest in the enterprise would be expected to lead to more active participation and involvement in productivity-enhancing activities such as quality-control circles as well as smoother and less costly collective bargaining. The introduction of an ESOP has lead to a 4-5 percent increase in productivity and this productivity payoff takes three to four years (Jones and Kato, 1995). Jones and Kato (1993a, b) have also stated that ESOPs in Japan became prevalent and strong after 1970. In Japan, ESOPs have favorable effects on company productivity and most of Japanese firms to encourage employee participation in management decision making process. Kumar (2008) found that the average productivity of ESOP software firms is 1.15 against 0.93 for ESOP non-software Indian companies which are not statistically significant. However, Cin and Smith (2001) reported that the employees do not participate in ESOP either financially or in decision making to the extent they could under the law of Korean economy. An increase an average ESOP (numbers) from 2 percent to 3 percent of total shares would lead to an increase in productivity of 2.6 percent.

The productivity argument is also problematic given the potential for free-riding by workers. In addition, using an ESOP to make workers "think like managers" can lead to problems of "too many cooks" (Bryant, 1995). The stock option companies have 17 percent greater productivity in a three year post plan period as compared to pre plan performance relative to their industry. An ESOP company has sales growth 2.4 percent per year faster in the year following ESOP adoption year than pre-ESOP period (Blasi *et al.*, 1994). ESOP adoption is more likely for companies with a higher predicted probability of takeover but ESOP adopters have many characteristics that are different from takeover targets. Companies that adopt ESOPs can be distinguished from non-adopting companies based on characteristics associated with the tax and incentive effects of these plans. The productivity performance is one, over which individual employees and groups of employees may have some direct influence or some indirect involvement (Blasi *et al.*, 2002). Moreover an ESOP established in Indian firms has little effect on a firm's productivity and profitability based on accounting performance. The change in cash flow is statistically positively significant for ESOP firms in India (Kumar, 2004).

The establishment of the trust (ESOT) solves the basic estate planning problems of the shareholders of closely held corporations by meeting an in-house market for the

close corporation stock (Gray, 2003). The disqualifying dispositions of ESOPs provide a tax deduction to the firm (Matsunaga *et al.*, 1992). The adoption of an executive stock option plan will induce the manager to reduce corporate dividends relative to what dividends would have been in the absence of the plan (Lambert *et al.*, 1989). Gordon and Pound (1990) found that ESOPs have zero average effect on share values. Moreover, the stock option holding executives undertake more risky investment opportunities (Defusco *et al.*, 1990). Pendleton and Robinson (1999) found that the employee share ownership has very little impact on productivity performance. UK output per work in 1996 was some 40 percent lower than in the USA, 30 percent lower than West Germany and 25 percent lower than France.

A positive relation observed between the percentage of ownership by individual employee and the firm's leverage ratio (Mehram, 1992). The smaller companies were not likely to adopt profit sharing plans, and were less likely to adopt ESOP, going against an idea that group incentive schemes will be more attractive in smaller workplaces (Kruse, 1993).

Moreover, equity ownership improves productivity and market incentives that will efficiently lead the firms to compensate employees with stock (Levin, 1985). An ESOP company grows faster when ownership is combined with a program for worker participation with annual employment growth 1.21 percent faster and sales growth 1.89 percent faster as compared to five years before (Rosen and Quarrey, 1987).

Blasi (1992) suggested that the significant employee ownership can play a healthy role in the emerging private economy in Russia. Groban Olson (1993) reported that the median amount of stock owned by employees was 27-30 percent in the USA. All ESOP firms invest more in training of non-managerial employees after their ESOPs are in place than they did before. Of the managers, 80 percent said the ESOP had a positive effect on employee attitudes. A total of 69 percent said the ESOP had a positive effect on employee on-the-job performance; 54 percent said customer service improved and employee participation increased in 78 percent of the firms. Matsunaga (1995) found that the current financial accounting rules pertaining to employee stock option affects the compensation practices of some listed firms of Japan stock exchange.

The impact of employee ownership on stock price might be negative, if anything, because employee will prefer to increase their short-term compensation rather than invest profits in the business for future growth (Blasi, 1996). For companies with employee ownership, options may be used to supplement senior management compensation packages while staying within the employee ownership theme. The closely owned businesses may use options as a mechanism for rewarding management with strong performance (Beiser *et al.*, 1994). Groban Olson (1997) found that employee owned companies only surpass their traditional competitors in productivity and profitability when they include significant employee participation programs.

Blasi (1999) emphasized that a passionate board is what is necessary to perpetuate employee-ownership-investment bankers and legal advisors who are ordered to perpetuate employee ownership. Good candidates for the board can come from other employee owned companies. Wilkus (1999a, b) compared the performance of ESOP and non-ESOP companies by using 1,176 companies and identified that adopted ESOP from 1988 to 1994 survived longer than non-ESOP companies but the productivity (Sales per employee) of ESOP companies was lower than the productivity of non-ESOP companies. Wilkus (1999a, b) stated that a sale of an ESOP could prevent a company

from being on the market for an extended period of time, a decline in the company's value, a loss of morale and uncertainty. An ESOP participant has a tax benefit better than other shareholders due to deferral aspect of qualified plans (Groban Olson, 1997).

The public policy should seek to ensure that employee-owners have standard perquisites of ownership such as good information to enhance workplace and financial decision-making (Kruse, 2003). Employee also has greater choice about how much company stock they will buy, when they will buy and sell it. A ESOPs can use as a corporate finance technique and corporate control (Perun, 2000). The higher positive relationship between senior-level stock ownership and corporate performance and the higher-performing companies had chief executive officers (CEOs) owning 40 percent more stock in 1994 than low-performing companies (Chuahy, 2000).

The employee-owned companies created a considerably better working life for their unionized employee-owners, with more equality, better communication, more training, more opportunities to participate, and a more cooperative relationship between employees and management. Majority ownership, combined with the threat of takeover, job loss, or shutdown, appears to have played a substantial part of creating the conditions that led to achieving more participative management (Yates, 2006). Most important, stock ownership plans have nearly always been found to be far more prevalent in work settings where their incentive effects are likely to be weak (Pendleton, 2006).

The empirical research on employee stock option plans by Core and Guay (2000) concluded that firms use greater levels of stock option compensation when facing capital requirements and financing constraints. Ben-Ner and Jones (1995a, b) suggested that owners will adopt only productive employee ownership but they will not adopt all the productive schemes. A scheme adopted for other reasons such as legal or regulatory requirements, is an attempt to deter hostile takeovers, following a managerial fad, and so forth, may have different productivity effects. The profit-sharing literature surveyed by Weitzman and Kruse (1990) supports the view that profit-sharing increases productivity. Ben-Ner and Jones (1992) advised that the introduction of an ESOP will arguably be expected to have net positive effects on individual behavior, collective behavior and ultimately organizational performance.

Hence the collective participation on the workplace certainly improves the productivity performance whereas in India, employee stock option programme has been used to attract talented workers. Moreover the literature of ESOP in India is not as old as of USA. Now ESOPs adoption in India is on the growing stage but due to great nosedive in stock market, most of the option is going underwater which de-motivate the confidence of employee in stock option.

Sample data, empirical strategy and hypotheses

In this section the author briefly discusses input strategy for estimating the impact of ESOPs on corporate productivity based on pre- and post-adoption period, i.e. −1 year and 0 year, 1 year, 2 year, 3 year respectively. The study has used macro data of 202 listed companies in BSE (Bombay Stock Exchange) out of which 103 ESOP companies included the following industry sector representation:

- Electronics/Telecommunication (3 percent);
- Automobile/Packaging/Oil Drilling (4 percent);

- Entertainment/Textile/Trading (7 percent);
- Banking/Finance/Investment (10 percent);
- Pharmaceutical/Drugs/Care (8 percent);
- Constructions /Engg. (6 percent);
- Software (51 percent);
- Cement (3 percent);
- Miscellaneous (8 percent).

The financial data for ATO (Assets turnover ratio) pre and post-adoption of ESOP has collected from Public document of BSE, www.bseindia.com; www.indiainfoline.com; www.sebiedifar.nic.in; included 103 ESOP and 99 Non-ESOP from all industry grouping. The productivity measure (ATO) is analyzed and compared with a control group matched by same industry. The non-ESOP 99 companies have been included for the study on the basis of same/approx amount of paid-up equity capital in ESOP companies in India.

Objectives

The objective of the study is to find the impact of ESOP adoption on Indian corporate productivity empirically using macro data penal. To measure the impact of ESOPs on corporate productivity, the study took assumption that any change in ATO in post period is due to presence of ESOP.

Hypotheses

The average ATO for post-adoption period (0 year, 1 year, 2 year and 3 year) is calculated and the same is tested by using Wilcoxon signed rank test under the null hypothesis that:

H01. An ESOP does not affect the ATO positively in post-adoption period of Indian corporate sector.

The percentage change in ATO for each post-adoption period is calculated from pre-adoption (−1 year) period to identify the significant mean percentage change by using the test under the null hypothesis that:

H02. An ESOP does not improve the percentage change in ATO of comparison group.

Moreover the study computed Pearson relationship for both comparison and control group to identify which of the basic variable more correlated in ATO and also tested under the null hypothesis that:

H03. The basic variables are not significantly correlated with ATO.

Further ANOVA (One-Way Variance) technique is employed to test the variance of basic variables under the null hypothesis that:

H04. The variance in basic variables is not significant in pre and post-adoption period of experimental group.

Basic variables

Net Sales (Rs. in Crore)	=	Sales Return Inward
Net Assets (Rs. in Crore)	=	Fixed Assets excluding outside investment + Current Assets

Productivity measure

Assets Turnover ratio (ATO) calculated as Net Sales/Net Assets (at book value) as per Annual Report submitted to Bombay Stock Exchange. Percentage Change (Pc.Chg.) in ATO has been computed for post-adoption from pre-adoption period. ATO measures the firm's ability to use the total assets productively in pre and post-adoption period of companies under consideration.

Univariate analysis

Average, Median, Standard deviation and Percentage change have computed for 103 ESOP listed companies and 99 non-ESOP companies listed in Bombay Stock Exchange from same industry grouping.

ESOP listed (BSE) companies in India.

(1) Aztec Software.
(2) Blue star infotech.
(3) Cantech Software.
(4) Datamatics tech Ltd.
(5) Eonour Tech. Ltd.
(6) Frontier Infotech. Ltd.
(7) Geomatric Ltd.
(8) HCL Tech.
(9) Hinduja TmT.
(10) I-Flex.
(11) Infosys Tech.
(12) Infotech Enterprises.
(13) Kale Consultants.
(14) Kpit Info.
(15) LCC Infotech.
(16) Mastek.
(17) Moschip.
(18) Mphasis Ltd.
(19) Onward Tech. Ltd.
(20) Orchid Comput.
(21) Patni Computers.
(22) Pentamedia Graphics.

(23) Polaris.
(24) PSI Data Systems.
(25) RS Software.
(26) Saksoft Ltd.
(27) Satyam.
(28) Soundcraft Industries.
(29) Subex Systems.
(30) Trigyn Tech.
(31) Wipro Ltd.
(32) Zensar Tech.
(33) Financial Tech Ltd.
(34) Igate Global Sol.
(35) Hexaware Tech Ltd.
(36) Geodesic Information.
(37) India Online Network Ltd.
(38) KLG Systel.
(39) Mindtree.
(40) NIIT Technologies.
(41) Northgate Tech. Ltd.
(42) Ramco Systems Ltd.
(43) Rolta India Ltd.
(44) Visual Soft Tech Ltd.
(45) Zen Tech Ltd.
(46) Mascon Global Ltd.
(47) Synergy Login Sys Ltd.
(48) Escorts Ltd.
(49) Centurion Bank.
(50) HDFC Bank.
(51) HDFC Ltd.
(52) ICICI Bank.
(53) IDBI Bank.
(54) ING Bank.
(55) Kotak Mahindra.
(56) United Breweries Ltd.
(57) Acc Ltd.
(58) Gujarat Ambuja.
(59) ITC Ltd.

(60) CMC Ltd.
(61) D-Link.
(62) Moser Baer.
(63) Nagarjuna.
(64) Punj Lloyd.
(65) SSI Ltd.
(66) Emco Ltd.
(67) Ion Exchange.
(68) Larsen & Tourbu.
(69) Patel Engineering Ltd.
(70) Reliance Industrial Infra Ltd.
(71) RPG Life.
(72) Thermex Ltd.
(73) Cinevistaas Ltd.
(74) Saregama India Ltd.
(75) Television Eighteeen (I) Ltd.
(76) Jyoti Structures.
(77) Gruh Finance.
(78) IL & FS Managers.
(79) Indiabulls.
(80) HT Media.
(81) CRISIL.
(82) Elbee Services Ltd.
(83) Flextronics.
(84) MCS Ltd.
(85) Procter & Gamble Hy & Hea.
(86) Aban Lloyd.
(87) Max India.
(88) Dabur India.
(89) Bombay Dyeing.
(90) Aarti Drugs.
(91) Aurobindo.
(92) Dabur Pharma.
(93) JB Chemicals.
(94) Matrix.
(95) Ranbaxy.
(96) Suven Life.

(97) Unichem Lab.
(98) Venus Remedies.
(99) Dr Reddy.
(100) Bharti Airtel.
(101) GTL Ltd.
(102) Shoppers Stop.
(103) Control Print.

Non-ESOP Listed (BSE) Companies in India

(1) Ashok Leyland Ltd.
(2) Maharastra Scooters Ltd.
(3) Omax Autos Ltd.
(4) Tata Motors Ltd.
(5) Bank of Baroda.
(6) Canara Bank.
(7) City union Bank.
(8) Corporation Bank.
(9) Dena Bank.
(10) State Bank of Tranvcore.
(11) Union Bank.
(12) Vijaya Bank.
(13) Jagatjit Industries Ltd.
(14) Shaw Wallace & Company Ltd.
(15) Finolex Cables Ltd.
(16) Binani Cement Ltd.
(17) Gujarat Sidhee Cement Ltd.
(18) Godfrey Philips India Ltd.
(19) GTC Industries Ltd.
(20) ITI Ltd.
(21) JMC Project India Ltd.
(22) Gati. Ltd.
(23) Blue Dart Expense Ltd.
(24) Nirma Ltd.
(25) Century Textiles & Ind. Ltd.
(26) Birla Power Solution Ltd.
(27) Alfa Laval Ltd.
(28) Engineers India Limited.
(29) Jog Engineering Limited.

(30) Jain Studios Ltd.
(31) Mukta Arts Ltd.
(32) Sri Adhikari Brothers Television.
(33) Zee Telefilms Ltd.
(34) Ind Bank Housing Ltd.
(35) Magma Sharachi Ltd.
(36) Apcotex Industries Ltd.
(37) ATN International Ltd.
(38) Network Limited.
(39) Ricoh India Ltd.
(40) Aban Loyd Chiles Offshore Ltd.
(41) Essel Ltd.
(42) Colgate-Palmolive Ltd.
(43) Henkel Spic India Ltd.
(44) Marico Industries Ltd.
(45) Bombay Dyeing Ltd.
(46) Alembic Limited.
(47) Cipla Ltd.
(48) Macmillan India Ltd.
(49) Shreyas Shipping Ltd.
(50) Ruchi Infrastructure Ltd.
(51) Tata Sponge Iron Ltd.
(52) Punjab Communications Ltd.
(53) KSL Reality and Indus. Ltd.
(54) Cravatex Limited.
(55) TCI Industries Ltd.
(56) RPG Transmission Limited.
(57) Aftek Infosys Ltd.
(58) Aztec Soft & Tech Sev. Limited.
(59) Compudyne Winfosystems Ltd.
(60) Computech International Ltd.
(61) Cybertech Systems & Software.
(62) Dynacons Systems & Solutions.
(63) HFCL Infotel Limited.
(64) KPIT Ltd.
(65) Maars Software international.
(66) Melstar Information Technology.

(67) ORG Infomatics Ltd.
(68) Orient Information Tech Ltd.
(69) PCS Industries Ltd.
(70) Pentasoft Tech Ltd.
(71) Rolta India Ltd.
(72) Shyam Telecom Ltd.
(73) Silverline Tech Ltd.
(74) Sonata Software Ltd.
(75) Spel Semiconductor Ltd.
(76) Sun Infoways Ltd.
(77) Tata Elxsi Ltd.
(78) TVS Electronics Ltd.
(79) Zenith Computers Ltd.
(80) Zinith Infotech Ltd.
(81) Bombay Talkies Ltd.
(82) Califorina Soft Com Ltd.
(83) Four Soft Ltd.
(84) Indo-Pacific Soft & Ent. Ltd.
(85) Intellvisions Soft Ltd.
(86) KLG Systel Ltd.
(87) Lanco Global Sys Ltd.
(88) Nexxoft Infotel Ltd.
(89) Sanra Soft Ltd.
(90) Tanla Sol. Ltd.
(91) Tera Soft Ltd.
(92) Tutis Tech Ltd.
(93) Unitex Designs Ltd.
(94) Usha Martin Info Ltd.
(95) Valuemart Info Tech Ltd.
(96) Vama Ind. Ltd.
(97) Zigma Ltd.
(98) Tricom India Ltd.
(99) Danlaw Tech India Ltd.

The elusive ESOP –Productivity link of Indian firms

To measure the effect of ESOPs on corporate productivity based on pre-adoption (−1 year) and post-adoption period (0 year to 3 year) of 103 ESOP software and non-software companies and 99 Non-ESOP software and non-software companies have been studied. Table I reports a quick momentary view on data of 47 ESOP software

Research variables	ESOP software ($n = 47$) Mean	Median	S.D	Non-ESOP software ($n = 43$) Mean	Median	S.D
Group A: 0 year						
Sale	267.58	70.27	538.95	68.46	27.93	90.76
Assets	276.72	79.07	484.66	125.85	30.47	261.57
ATO	0.99	0.93	0.50	0.76	0.61	0.54
Pc. Chg.	0.021	0.001	0.217	–	–	–
Group A: 1 year						
Sale	568.19	115.48	1491.06	67.03	18.66	98.69
Assets	535.28	143.81	1091.94	96.89	36.88	172.82
ATO	0.97	0.81	0.57	0.74	0.55	0.64
Pc. Chg.	−0.002	−0.012	0.183	−0.041	0.096	0.503
Group A: 2 year						
Sale	780.03	128.61	2054.66	75.68	25.56	108.24
Assets	686.94	184.18	1451.56	107.83	40.16	187.41
ATO	0.95	0.83	0.59	0.76	0.61	0.63
Pc. Chg.	−0.013	−0.035	0.136	0.025	0.042	0.304
Group A: 3 year						
Sale	1057.73	175.32	2842.93	101.51	32.67	136.96
Assets	983.95	277.58	2217.65	148.26	49.50	280.47
ATO	0.92	0.79	0.59	0.77	0.59	0.60
Pc. Chg.	−0.021	−0.046	0.105	0.022	0.001	0.193

Note: Rs. in Crore
Source: Annual Published Reports

Table I.
A quick momentary view on statistics for ESOP and non-ESOP software company

and 43 Non-ESOP software companies for pre and post-adoption period. Mean sale of 47 ESOP software companies is eight times greater than mean sale of non-ESOP software companies for post-adoption period whereas median sale of ESOP software companies is six time greater than the median sale of non-ESOP software companies.

Mean value for assets of ESOP software companies is seven time greater than the mean value for assets of control group whereas median values for assets is 4:1 between ESOP software and non-ESOP software companies respectively. S.D (standard deviation) ratio is 19:1 and 6:1 for sale and assets for ESOP software and non-ESOP software companies in post adoption period. The mean value of ATO is more than the median of ATO for both types of companies under consideration whereas S.D for ATO of ESOP software companies is less than the S.D of control group. Pc. Chg. (percentage change) in ATO has negative value for ESOP software companies except 0 year but positive value observed in Pc. Chg. of non-ESOP software companies.

The S.D in Pc. Chg. of comparison group is less than the S.D in Pc. Chg. of control group due to extreme values is included in survey. Table II shows 56 ESOP and 56 non-ESOP software companies of four years statistical performance. Mean value for sale of ESOP non-software companies is less than the mean value for sale of non-ESOP non-software companies.

Whereas median values for sale of ESOP non-software companies are greater than non-ESOP non-software companies. The S.D for sale is double from its mean for ESOP non-software and non-ESOP non-software companies. Mean value for assets ten times

Research variable	ESOP non-software ($n = 56$) Mean	Median	S.D	Non-ESOP non-software ($n = 56$) Mean	Median	S.D
Group A: 0 year						
Sale	1101.97	355.43	1949.16	1173.12	295.91	2281.62
Assets	2877.93	299.42	10056.19	5170.12	287.71	13658.49
ATO	0.92	0.94	0.57	1.01	0.81	0.72
Pc. Chg.	0.012	0.001	0.294	–	–	–
Group A: 1 year						
Sale	1338.55	478.55	2673.27	1363.16	350.93	3019.96
Assets	6208.70	581.64	23774.65	6233.88	332.71	16308.97
ATO	0.95	0.84	0.71	0.91	0.75	0.80
Pc. Chg.	0.017	0.021	0.242	−0.018	−0.031	0.488
Group A: 2 year						
Sale	1701.47	680.33	3516.72	1569.51	411.23	3531.48
Assets	8757.53	867.01	3524.73	7764.28	398.19	20807.41
ATO	0.89	0.85	0.67	0.84	0.76	0.70
Pc. Chg.	0.002	−0.030	0.180	0.017	−0.059	0.493
Group A: 3 year						
Sale	2379.72	711.93	5153.92	1978.83	497.76	4678.39
Assets	9978.36	1071.41	35358.65	9715.24	529.22	26181.11
ATO	0.86	0.86	0.67	0.89	0.78	0.77
Pc. Chg.	0.003	−0.025	0.150	0.008	−0.028	0.214

Note: Rs. in Crore
Source: Annual Published Reports

Table II.
A quick momentary view on statistics for ESOP and non-ESOP Non-software Company

greater than from its median of ESOP non-software companies whereas 18:1 is the ratio exists for the same value of non-ESOP non-software companies. Mean value of ATO for ESOP non-software companies is greater than from its median except 0 year whereas mean value of ATO for control group greater from its median value. The S.D of ATO for ESOP non-software is less than the S.D for control group.

Table III shows the ATO of 47 ESOP and 43 non-ESOP software companies for both times of windows. The highest value of ATO is 0.99 for 0 year period whereas lowest value is 0.92 for three year for ESOP software companies with average ATO is 0.96. The highest ATO is 0.77 and 0.74 is the lowest value, which is statistically significant, with average value 0.76 for control group. The average ATO of ESOP software

Year	ESOP software companies ATO	Wilcoxon Statistics	Year	Non-ESOP software companies ATO	Wilcoxon Statistics
−1 year to 0 year	0.99	−0.116	1 year to 1 year	0.77	–
−1 year to 1 year	0.97	−0.317	1 year to 2 year	0.74	−2.512*
−1 year to 2 year	0.97	−0.963	1 year to 3 year	0.77	−0.555
−1 year to 3 year	0.92	−0.323	1 year to 4 year	0.77	−0.350
Average	0.96	–	Average	0.76	–

Note: * Significant at 0.05 level of risk (two-tailed)

Table III.
Average productivity (ATO) of ESOP and non-ESOP software companies

companies is below the average ATO of non-ESOP software companies. This shows that ATO post-adoption period is more than the ATO of non-ESOP companies but it is not statistically significant in comparison of pre-adoption period at any level of risk. The ESOP is ineffective to improve productivity performance in short duration. It may be statistically significant in long periods i.e. five to six years after the implementation of employee stock option programme.

The average ATO is 0.91 (Table IV) for comparison group as well as control group. The highest ATO for ESOP non-software companies is 0.95 whereas 0.87 is the lowest ATO for the same. On the other hand 1.01 is the highest ATO for non-ESOP non-software companies which are more as compared to ATO of comparison group. The lowest ATO is 0.84 in 3 year for non-ESOP non-software and statistically significant as compared to 1 year.

The average ATO of ESOP software companies is more by 0.05 in comparison to ESOP non-software companies whereas average ATO of non-ESOP software companies is less in comparison to non-ESOP non-software companies and is not statistically significant for post-adoption period in both the comparison groups.

Mean percent changes for 0 year is positive (Table V) thereafter it is negative for ESOP software companies. The mean percent change is −0.013 for the two years of ESOP software companies and statistically significant in comparison to pre-adoption period of ESOP. The mean percent change (−0.041) for 2 year is negative whereas it is positive for 3 year and 4 year of non-ESOP software companies. The average change is 0.002 for non-ESOP software companies whereas it is −0.004 for ESOP software companies. If ESOPs are ineffective in improving performance, then the very rationale of ESOPs can be questioned considering the cost involved in its establishment.

Table IV.
Average productivity of ESOP non-software and non-ESOP non-software company

ESOP non-software companies			Non-ESOP non-software companies		
Year	ATO	Wilcoxon statistics	Year	ATO	Wilcoxon statistics
−1 year to 0 year	0.92	−0.990	1 year to 1 year	1.01	–
1 year to 1 year	0.95	−0.848	1 year to 2 year	0.91	−0.848
−1 year to 2 year	0.89	−1.085	1 year to 3 year	0.84	−0.206*
−1 year to 3 year	0.87	−1.362	1 year to 4 year	0.89	−1.558
Average	0.91	–	Average	0.91	–

Note: * Significant at 0.05 level of risk (two-tailed)

Table V.
Mean percent change in ATO of ESOP and non-ESOP software companies

ESOP software companies			Non-ESOP software companies		
Year	Change (Mean)	T-value	Year (Mean)	Change	T-value
−1 year to 0 year	0.021	1.164	1 year to 1 year	–	–
−1 year to 1 year	−0.002	0.527	1 year to 2 year	−0.041	−0.564
−1 year to 2 year	−0.013	0.121*	1 year to 3 year	0.025	0.503
−1 year to 3 year	−0.020	0.306	1 year to 4 year	0.022	0.702
Avg. Chg.	−0.004	–	Avg. Chg.	0.002	–

Note: * Statistically significant at 10 percent level of risk (two tailed)

The perceived benefits of ESOPs may be given only by ensuring that rewards are based not only on past performance but future performance. Thus the positive morale effects of ESOPs through participation and influence in decision making are probably not observed in Indian ESOP still now and tend to against the views of theorists who argue that such institutional arrangement will generate managerial but it does not mean system (ESOP) is wrong whereas problem for its implementation, communication to the employees and tight guidelines from Securities Exchange Board of India (SEBI). It is not one-way traffic where always employees earn still two-way traffic may not be earned always.

Table VI shows the mean percent change of 56 ESOP companies and 56 non-ESOP companies. The highest change is 0.017 for 1 year and the lowest is 0.002 for 2 year of ESOP non-software companies whereas 0.018 is the highest and −0.019 is the lowest mean change of non-ESOP non-software companies. Mean percent change 0.012 for 0 year and statistically significant as compared to −1 year. In post- adoption period all the mean changes have positive value for ESOP non-software companies whereas −0.019 is negative value of 2 year for non-ESOP non-software companies. The average change is 0.009 for ESOP Non-software Company which is more than the average change 0.002 of non-ESOP non-software companies. This shows that ESOPs have positive little effect on productivity of non-software companies as compared to non-ESOP non-software companies in short duration.

The managements of these companies must be thinking of alternatives to make their ESOPs work efficiently. Companies can justifiably say that the current downturn, if any, is temporary, an aberration and does not call for any corrective action. It is true that the fall in the markets has been across the industries and has been harsh for many well performing companies. These companies can undertake an exercise in communicating their viewpoint to the employees. Communication with the employees is very critical and if the communication is convincing, employees will take this fall in their stride and look at their options from a long-term perspective. There could also be companies who feel that the prices are still volatile and will take time to stabilize. They would look at review of terms only after the prices have stabilized.

It is however very important that the rationale behind the wait and watch policy is properly communicated to the employees.

According to the relationship analysis exists (Table VII) between ATO and basic variables (Sales and Assets) of ESOP and non-ESOP software companies. The sale and ATO are positively associated in both time windows out of which Pearson coefficient is

ESOP non-software companies			Non-ESOP non-software companies		
Year	Change (Mean)	T-value	Year	Change (Mean)	T-value
−1 year to 0 year	0.012	0.069*	1 year to 1 year	–	–
−1 year to 1 year	0.017	0.260	1 year to 2 year	−0.019	−0.316
−1 year to 2 year	0.002	−0.300	1 year to 3 year	0.018	0.230
−1 year to 3 year	0.003	−0.311	1 year to 4 year	0.008	0.230
Avg. Chg.	0.009	–	Avg. Chg.	0.002	–

Note: * Statistically significant at 5 percent level of risk (two tailed)

Table VI.
Mean percent change of ESOP and Non-ESOP non-software companies

statistically significant for −1 year of ESOP software companies whereas the correlation is also positively related with ATO and statistically significant for all the period under consideration for non-ESOP software companies. The assets are negatively correlated with ATO for −1 year and 0 year thereafter it is positively associated with ATO of ESOP software companies whereas ATO is negatively related to assets for all years of non-ESOP software companies but not statistically significant.

The sales are more correlated with ATO in both groups as compared to assets. The collective results for relationship indicated that ATO is more correlated with sale in comparison of assets for ESOP software companies in India. ESOP firms are found to have higher sales growth but there is not significant correlation observed between ATO and sales of comparison group. The effect of ESOP on corporate productivity (basic variables) is not expected positive in short-term. It will take four to five years after implementation in company. In India, ESOP response is not as good as in US workplace.

As per Table VIII the sales are positively correlated with ATO in pre-adoption period and statistically significant observed whereas sales are positively associated with ATO in post-adoption period except 0 year for ESOP non-software companies. On the other hand sales are positively associated with ATO for all years except 1 year whereas it is negatively related for control group.

The relationship between assets and ATO is negative for both time windows and significant for 0 year for comparison group whereas negative Pearson coefficient statistically significant for all years for control group. The relationship analysis shows that sale is more positively related with ATO for comparison group as compared to assets.

Table IX shows ANOVA (one-way variance) for basic variables of ESOP and non-ESOP software companies. The highest S.D value of sale is Rs. 2842.93 crore and

ESOP software companies				Non-ESOP software companies			
Year	ATO	Sale (r)	Assets (r)	Year	ATO	Sale (r)	Assets (r)
−1 year	0.992	0.301*	−0.018	–	–	–	–
0 year	0.994	0.145	−0.030	1 year	0.766	0.356*	−0.201
1 year	0.972	0.232	0.079	2 year	0.741	0.539**	−0.044
2 year	0.953	0.243	0.149	3 year	0.768	0.456**	−0.062
3 year	0.919	0.239	0.120	4 year	0.771	0.458**	−0.077

Notes: * Statistically significant at 10 percent level of risk (two tailed); ** statistically significant at 5 percent (two tailed) r for coefficient of correlation

Table VII.
Table-7 ATO and basic variables of ESOP and non-ESOP software company (Pearson relation)

ESOP non-software companies				Non-ESOP non-software companies			
Year	ATO	Sale (r)	Assets (r)	Year	ATO	Sale (r)	Assets (r)
1 year	0.92	0.379**	−0.259	–	–	–	–
0 year	0.93	−0.038	−0.331*	1 year	1.01	−0.054	−0.412**
1 year	0.95	0.096	−0.274	2 year	0.91	0.062	−0.338*
2 year	0.89	0.031	−0.262	3 year	0.84	0.075	−0.345**
3 year	0.86	0.018	−0.268	4 year	0.89	0.087	−0.338*

Notes: * Significant at 10 percent level of risk (two-tailed); ** significant at 5 percent level of risk (two-tailed), r for coefficient of correlation

Table VIII.
ATO and basic variables of ESOP and non-ESOP non-software company (Pearson relation)

Rs.366.81 crore is the lowest value for 3 year and −1 year respectively of ESOP software companies. The increasing trend is observed in S.D of sale from −1 year to 3 year of software comparison group without significant value of F-test. The highest S.D value of sale is Rs. 136.97 and the lowest value is Rs. 90.76 for 4 year and 1 year respectively of non-ESOP software companies. The highest S.D for assets is Rs. 2217.65 crore and the lowest value of S.D is Rs. 309.61 crore for ESOP software companies whereas Rs.280.47 crore is the highest value of assets and Rs. 172.82 crore is the lowest value of assets for 4 year and 2 year respectively of non-ESOP software companies.

The standard deviation of sale and assets for comparison group is comparatively more than the standard deviation of sale and assets for control group but not statistically significant tested by F-test. This shows that sale and assets are not statistically increase in post-adoption period as compared to pre-adoption period but the growth is faster in ESOP software companies than the growth of non-ESOP software companies.

Moreover increasing trend is observed in sales and assets of both ESOP and Non-ESOP software companies. The sales and assets growth is not hypothesistically significant for all the period of ESOP software companies found by ANOVA (one-way variance) analysis.

Table X shows the ANOVA (one-way variance) for ESOP and non-ESOP non-software companies. The highest S.D for sale is Rs. 5153.91 crore for the 3 year and

	ESOP software companies					Non-ESOP software companies				
	Sale		Assets			Sale		Assets		
Year	Mean	S.D	Mean	S.D	Year	Mean	S.D	Mean	S.D	
−1	193.03	366.81	197.09	309.61	–	–	–	–	–	
0	267.58	538.95	276.72	484.66	1	68.46	90.76	125.85	261.57	
1	568.19	1491.06	535.28	1091.94	2	67.03	98.69	96.89	172.82	
2	780.03	2054.66	686.94	1451.56	3	75.68	108.24	107.83	187.41	
3	1057.73	2842.93	983.94	2217.65	4	101.51	136.97	148.26	280.47	
F-test		2.026	–	2.787	F-test		0.910	–	0.746	

Note: Rs. in Crore
Source: Annual Published Report

Table IX.
ANOVA (one-way variance) for ESOP software and non-ESOP software company

	ESOP non software companies					Non-ESOP non- software companies				
	Sale		Assets			Sale		Assets		
Year	Mean	S.D	Mean	S.D	Year	Mean	S.D	Mean	S.D	
−1	997.79	1962.08	2877.93	10056.19	–	–	–	–	–	
0	1101.97	1949.16	2853.67	11000.66	1	1173.12	2281.62	5170.11	13658.49	
1	1338.55	2673.37	6208.70	23774.65	2	1363.16	3019.96	6233.89	16308.97	
2	1701.47	3516.72	8757.52	35212.73	3	1569.51	3531.48	7764.28	20807.41	
3	2379.72	5153.91	9978.36	35358.65	4	1978.83	4678.39	9715.24	26181.11	
F-test		1.630	–	0.921	F-test		0.549	–	0.556	

Note: Rs. in Crore
Source: Annual Published Report

Table X.
ANOVA (one-way variance) for ESOP and Non-ESOP non-software companies

Rs. 1949.16 crore for 0 year of ESOP non-software companies whereas Rs. 4678.39 crore is the highest and Rs. 2281.62 crore is the lowest S.D for sale for non-ESOP non-software companies for 1 year and 4 year respectively. The fluctuating trend is observed in standard deviation of sale of comparison group whereas increasing trend is found in sale of control group. The highest S.D for assets of ESOP non-software companies is Rs. 35358.65 crore and Rs. 10056.19 crore is the lowest value for the same group. The highest value for S.D of assets is Rs. 26181.11 crore whereas the lowest value is Rs. 13658.49 crore for assets of non-ESOP non-software companies. The increasing trend is registered in S.D of assets for ESOP non-software and non-ESOP software companies. The S.D of sale and assets for ESOP non-software is more as compared to ESOP software companies.

This shows that greater dispersion in sale and assets of ESOP non-software companies than ESOP non-software companies. The collective result states that the performance of ESOP software companies is not improved in post-adoption period as compared to the pre-adoption period. The response of adoption of ESOP is not encouraging the productivity for post-adoption period significantly as compared to the productivity of pre-adoption period. Thus, it is clear that the impact of ESOP on overall productivity is not highly good.

Conclusions

This paper addresses the issue of whether ESOP improves the productivity of listed firms in India. The empirical evidence supports the hypothesis that ESOP does not improve the productivity performance of Indian corporate sector. The productivity will improve with the age of the operational plan (ESOP). The mean percent change for comparison group is not statistically significant as against the alternative hypothesis.

The study also found that ATO is positively related with sale for experimental group but not statistically significant at any level of risk. Furthermore, the S.D of sales and assets is not significant at any level of risk against the alternate hypothesis for 103 ESOP companies. Hence the participants of ESOP worked at workplace efficiently with the adoption of equity based compensation plan in short run whereas the good results (improved Productivity) can be attainable through ESOP in the period of 4-5 years in presence of ESOP. The study signals that ESOP is neither a passport to higher profit and productivity, nor a magic elixir that can facilitate corporate recruitment, retention and motivation. The author's vigorous findings support the arguments of those who predict that participation in ownership leads to inefficiencies.

Implications for managers

The rational of its presence can be justified only if it improves productivity and performance. There is no automatic link between ESOPs and performance. Moreover an ESOP is not one-way traffic where employees always earn there may be risk same must be communicated with the employees. The managers can use ESOP for further business expansion also through leveraged ESOP where company can reap huge money from financial institution through ESOT. A company's management system should synergize the intellectual capital and financial capital to provide a way to link employee and corporate fortunes for long-term goals, perhaps linking employee ownership with participative management and new ownership innovations to reward employees for high performance goals.

Direction for future research

Central Board of Direct Tax (CBDT) gave a detail guide line for fringe benefit tax levy on fringe benefits. With the new regulations on FBT (Fringe Benefit Tax), gains from ESOPs are now classified as fringe benefits. Tax is liable @ 33.99 percent not only at the time of sale but also at the time of allotment or transfer of shares. Most importantly, now the company is liable to pay FBT on benefit arising from stock options at the time of allotment or transfer of shares, as against the scenario earlier where the tax liability was on the employee alone. The FBT applicable from 1 April 2007 on allotted or transferred share to managerial and non managerial employees which needs to be explored. ESOP is an intrinsic performance factor. Future research may explore the impact of FBT on corporate profitability in connection with ESOPs corporate sectors using macro data panel.

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