

A Study On Employee Productivity and Its Impact on Tata Consultancy Services Limited Pune (Maharashtra)

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ABSTRACT: The purpose of the present paper is to will explore recent empirical work addressing of measuring issues of levels in the IT sector w.s.r to MNC-TCS [PUNE]. The present study used a sample of 30 actual employees who are working in the TCS [Pune].The responses were collected through structured likert scale questionnaire. Factor analysis has been used for analyze and 3 factors were emerged out namely technological, time and employee factors. The results show that there is a significant relation between employee productivity and organizational effectiveness. The study also focuses on organizational effectiveness that effect the employee's productivity that act as a driver. It is expected that the findings will provide vital inputs to managers in framing their HR strategies. The researcher will further attempt to examine how emerged factors can be utilized effectively for increasing productivity.

Keywords- Employee Productivity, Organizational Effectiveness

I. Introduction

Economists have shown that large and persistent differences in productivity levels across businesses are ubiquitous. This finding has shaped research agendas in a number of fields, including (but not limited to) macroeconomics, industrial organization, employee, and trade. This project report will survey and evaluate recent empirical work addressing the question of why businesses differ in their measured productivity levels. The causes are manifold, and differ depending on the particular setting. They include elements sourced in production practices and therefore over which producers have some direct control, at least in theory - as well as from producers' external operating environments. After evaluating the current state of knowledge, my major research objective is to explore the recent trends which help in measuring the factors that affect the employee productivity and their impact on the organizational effectiveness.

II. Literature Review

Antikainen et al. (2008) asserts that productivity is a key factor specifying the organization effectiveness for progress in the competition field (Antikainen et al., 2008). For competition in the economy field, organizations in general and industrial units in particular have no alternative but to enhancing labour productivity as the main strategic source. Regarding this issue, Draker (1999) asserts that today's challenge of organizations is measuring and enhancing the labour productivity. Therefore, managers are required to recognize, motivate, and optimize the great hidden power of organizations' human talents and take into account the factors creating instrumental motivation (such as salary and wages, bonus, facilities, working physical environment, and safety) and non-instrumental motivation (like unity of jobs, job security, justice in organizations and training), since these factors do really affect productivity.

Most of the scientists' focus in labour productivity enhancement is on the three basic factors of instruction, motivation, and partnership. Organizations effectiveness will achieve continuous considerable productivity improvement in the case of working right instructional programs in organizations, using permanent incentives instead of classic ones, and applying the skills of individuals' partnership in the decision making process and organization affairs. (Taheri, 2004).

Various approaches regarding classification of the factors affecting productivity have been employed, some of which are as follow:

According to Otote (2008), the principal factors affecting productivity include challenging and purposeful work, self-management, supportive leadership, multi-dimensional skills, priority of individual-and group-based bonus system (Otote, 2008).

Taheri (2004) believes that the key factors affecting labour productivity enhancement are continuous job training of staff and managers, upgrading motivation among staff to do better and further work, paving the way for innovation and creativity of staff and managers, setting up a right payment system based on performance, establishing an encouragement and punishment system, working conscience, and social discipline,

changes in the system and methods, empowering the sovereignty, and the mastery of organization policies over the affairs (Taheri, 2004).

Appelbaum et al. (2005) has suggested the following program for productivity enhancement to make organization effective:

1. Regarding the staff, a plan to work enabling strategies, and a performance assessment program which should be accompanied by additional payment.
2. In all the levels, the staff supervisors and managers should work communicative processes that guarantee direct circuit of information and create an atmosphere which is compatible with productivity enhancement.
3. In all organization levels, activities should be done, which can raise the organization identity and potentially develop civil behaviour and reduce the amount of staff's absence.

According to Roelofsen (2002), the main factors affecting labour productivity include familial concerns, interpersonal relations, job stress, and dissatisfaction with job (job dissatisfaction affects the staff's motivation) (Roelofsen, 2002).

Enshassi et al. (2007) in a survey called "an investigation of the factors affecting worker productivity in building projects", identified the following factors as the ones having negative impact on worker productivity: shortage of materials, lack of working experience, lack of supervision, misunderstanding between workers and supervisors, change of plans and features during work, delays in payments, lack of loyalty to staff, delay in inspection, seven days of work per week without any holidays, and shortage of instruments and equipment (Enshassi et al., 2007). Pretti Jin Also reported in his research that the most significant barriers to productivity are job dissatisfaction, lack of training, weak management, lack of commitment, shortage of facilities, weak relation between staff, and lack of working teams (Ahmadzadeh, 2007).

III. Rationale of The Study

Employee productivity is one of the major challenge which we are facing now-a-days. Economies are shifting round the world supported by globalization, technological change, increased level of competition, growing education level and sophistication of consumers. Thus all these affect employer's generic and technical skills which affect the employee productivity and have the impact on organizational effectiveness. We need to study the factors that affect the employee productivity and their impact on organizational effectiveness. Through this study we can find out those factors which affect employee productivity and their impact on organizational climate.

Researchers at the universities of Nottingham and Exeter (2007) stated that the combination of generic and technical skills is used as a means for developing a workforce that is able to cope with the following situation:

- Increasingly complex work practices.
- Greater job flexibility and rotation as well.
- Increased level of interaction with customers.
- Reduced level of supervision.
- Team working.

Employees are the live forces of any organization and when comes to IT sector they become very important. So it's become very important to take care of them in this competitive age. Thus this study covers the aspects which relates with the employee productivity and its impact on organizational effectiveness and also suggests the way outs.

IV. Objectives Of The Study

Following are the objectives of this study:

1. To analyze the deep source of productivity and its impact on the organization.
2. To find out the practices adopted in the organization, examine the employee productivity in the organization and the problem faced regarding employee productivity.
3. To understand the implication of different trends of productivity to increase the productivity.

V. Research Methodology

This section has presented the methodology that was used in order to obtain the necessary information so as to be able to analyse the topic of study. As a starting point, the right type and number of participants that are required in order to be able to conduct a study whose findings will be meaningful, will need to be identified. Research process lays the structure for decision-making in life. Research process involves various steps like: problem definition, research design, data collection, data analysis and interpretation of results.

5.1 The Study

This is a descriptive study, which involves collecting and analyzing the primary data with the help of questionnaires.

5.3 The Sample

In order for the study to be representative, it was thought that a sufficiently large sample was required. The goal was therefore to arrive at a sample of approximately 30 participants, considering that a smaller sample may have provided misleading or inaccurate information and, hence, results. For the purpose of this study not only primary data, also secondary data is being used. The population of this study was consisting of **Tata Consultancy Services, Pune Office**. To achieve the objectives of the study 30 questionnaires sheet was sent to the employees through mail at **Tata Consultancy Services, Pune Office**.

5.4 The Tools

This Research has done by using appropriate tools.

5.4.1 Sample Size:

The sample size refers to the number of items to be selected from the population to constitute a sample. The size of the sample of the study is selected as 30.

5.4.2 Sampling Unit:

Due to nature of study, sampling unit will be **Tata Consultancy Services, Pune Office**.

5.4.3 Data collection:

The questions were sent among the eligible participant and were to be filled by them. The research explained the questions to the participant who were unable to the implications of the given questions and helped in filling up the questionnaire.

The two types of method were used for Data collection:

5.4.3.1 Primary Data:

Primary data are those data which are collected for the first time and thus happens to be original in nature. There are several methods of collecting primary data. I will use structured questionnaire that will be filled by the **Tata Consultancy Services, Pune Office** employees.

5.4.3.1.1 Questionnaire design

According to the review of literature related to the concern subject and after interviewing. A well designed questionnaire was developed with mainly closed ended questions. The questionnaire was built on 11 main factors which were again divided into sub-questions for the study. The factors were related to extent of importance of productivity labour topic in IT Company and it included questions about productivity measurement, studying reasons of growth and decline of labour productivity, manpower, leadership, motivation, time, materials / tools, supervision, project, safety, quality, and external. The questionnaire sheet is attached in Annexure. Unnecessary personal data, complex and duplicated questions were avoided in the questionnaire sheet.

5.4.3.1.2 Questionnaire Survey:

In this study a questionnaire was prepared. The questionnaire consists of a set of questions that was circulated among the employees. The questionnaire utilized for the purpose of research was a semi-qualitative one. The questionnaire dealt with different factors of the employee productivity like labour groups, manpower, leadership, motivation, time, materials / tools, supervision, project, safety, quality, external factors etc. Altogether the questionnaire contains 30 questions, which were helpful in measuring the impact of those factors on the organizational effectiveness.

5.4.3.2 Secondary Data:

It refers to the data that has been already collected. The secondary data, which has been used to carry out this study, are as follows:

- Company's website (<http://www.tcs.com>)
- Other relevant study materials, books, websites, Internet, News papers, Journals etc.

5.5 Hypotheses

H₀: There is no significant relation between employee productivity and organizational effectiveness.

H₁: There is a significant relation between employee productivity and organizational effectiveness.

5.6Software for Data Analysis:

SPSS Statistics version 21.0 software

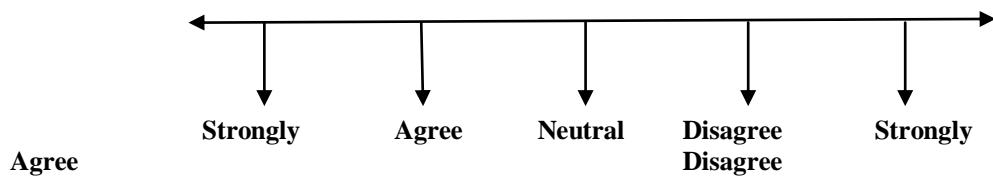
VI. Data Collection

6.1.1 Data Collected from the Web Survey

In successfully achieving main objective of the study, one of the most important phases is collection of accurate data. Data collection is a procedure of collecting crucial data records for a certain sample or population of observations (**Bohrnstedt and Knoke, 1994**). A total of 30 questionnaires were sent to IT professional through e-mail in early September 2014. By the due date, a total of 30 questionnaires were received.

6.1.2 Measurement of Data Collected from the Web Survey

In order to select the suitable technique of study, the level of measurement is to be studied. For each measurement type, there is (are) (an) appropriate method(s) that can be applied. In this research, ordinal scales were used. An ordinal scale is a ranking or a rating of data that normally uses integers in ascending or descending order. The numbers assigned (1, 2, 3, 4, 5) neither indicate that the intervals between scales are not equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on a 5 point Likert scale which includes



Agree

6.2 Data Analysis

Table 2: Communalities

| | Initial | Extraction |
|----------|---------|------------|
| VAR00001 | 1.000 | 1.000 |
| VAR00002 | 1.000 | .999 |
| VAR00003 | 1.000 | .972 |
| VAR00004 | 1.000 | 1.000 |
| VAR00005 | 1.000 | .437 |
| VAR00006 | 1.000 | .999 |
| VAR00007 | 1.000 | .997 |
| VAR00008 | 1.000 | .997 |
| VAR00009 | 1.000 | .997 |
| VAR00010 | 1.000 | .850 |
| VAR00011 | 1.000 | 1.000 |
| VAR00012 | 1.000 | 1.000 |
| VAR00013 | 1.000 | .896 |
| VAR00014 | 1.000 | .994 |
| VAR00015 | 1.000 | .997 |
| VAR00016 | 1.000 | .997 |
| VAR00017 | 1.000 | .997 |
| VAR00018 | 1.000 | .896 |
| VAR00019 | 1.000 | 1.000 |
| VAR00020 | 1.000 | 1.000 |
| VAR00021 | 1.000 | .997 |
| VAR00022 | 1.000 | .997 |
| VAR00023 | 1.000 | 1.000 |
| VAR00024 | 1.000 | .997 |
| VAR00025 | 1.000 | 1.000 |
| VAR00026 | 1.000 | .997 |
| VAR00027 | 1.000 | 1.000 |
| VAR00028 | 1.000 | .997 |
| VAR00029 | 1.000 | .997 |
| VAR00030 | 1.000 | 1.000 |

Extraction Method: Principal Component

Analysis.

| | | |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .838 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 270.609 |
| | df | 28 |
| | Sig. | .000 |

Table 3: Total Variance Explained

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 16.598 | 55.325 | 55.325 | 16.598 | 55.325 | 55.325 | 13.055 | 43.516 | 43.516 |
| 2 | 9.176 | 30.587 | 85.912 | 9.176 | 30.587 | 85.912 | 10.684 | 35.615 | 79.130 |
| 3 | 3.234 | 10.780 | 96.693 | 3.234 | 10.780 | 96.693 | 5.269 | 17.562 | 96.693 |
| 4 | .992 | 3.307 | 100.000 | | | | | | |
| 5 | 1.012E-013 | 1.041E-013 | 100.000 | | | | | | |
| 6 | 1.007E-013 | 1.023E-013 | 100.000 | | | | | | |
| 7 | 1.003E-013 | 1.010E-013 | 100.000 | | | | | | |
| 8 | 1.002E-013 | 1.008E-013 | 100.000 | | | | | | |
| 9 | 1.001E-013 | 1.004E-013 | 100.000 | | | | | | |
| 10 | 1.001E-013 | 1.004E-013 | 100.000 | | | | | | |
| 11 | 1.001E-013 | 1.002E-013 | 100.000 | | | | | | |
| 12 | 1.000E-013 | 1.001E-013 | 100.000 | | | | | | |
| 13 | 1.000E-013 | 1.001E-013 | 100.000 | | | | | | |
| 14 | 1.000E-013 | 1.001E-013 | 100.000 | | | | | | |
| 15 | 1.000E-013 | 1.000E-013 | 100.000 | | | | | | |
| 16 | 1.000E-013 | 1.000E-013 | 100.000 | | | | | | |
| 17 | 1.000E-013 | 1.000E-013 | 100.000 | | | | | | |
| 18 | -1.000E-013 | -1.000E-013 | 100.000 | | | | | | |
| 19 | -1.000E-013 | -1.000E-013 | 100.000 | | | | | | |
| 20 | -1.000E-013 | -1.001E-013 | 100.000 | | | | | | |
| 21 | -1.000E-013 | -1.001E-013 | 100.000 | | | | | | |
| 22 | -1.000E-013 | -1.001E-013 | 100.000 | | | | | | |
| 23 | -1.001E-013 | -1.003E-013 | 100.000 | | | | | | |
| 24 | -1.001E-013 | -1.004E-013 | 100.000 | | | | | | |
| 25 | -1.003E-013 | -1.010E-013 | 100.000 | | | | | | |
| 26 | -1.004E-013 | -1.014E-013 | 100.000 | | | | | | |
| 27 | -1.006E-013 | -1.021E-013 | 100.000 | | | | | | |
| 28 | -1.007E-013 | -1.022E-013 | 100.000 | | | | | | |
| 29 | -1.009E-013 | -1.029E-013 | 100.000 | | | | | | |
| 30 | -1.032E-013 | -1.108E-013 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

Table 4: Component Matrix^a

| | Component | | |
|----------|-----------|-------|-------|
| | 1 | 2 | 3 |
| VAR00001 | .765 | -.379 | -.520 |
| VAR00002 | .664 | -.748 | .018 |
| VAR00003 | .741 | -.319 | .566 |
| VAR00004 | .502 | -.864 | -.037 |
| VAR00005 | .407 | .377 | -.360 |
| VAR00006 | .664 | -.748 | .018 |
| VAR00007 | .716 | .644 | .265 |
| VAR00008 | .943 | -.288 | .157 |
| VAR00009 | .716 | .644 | .265 |
| VAR00010 | .780 | -.083 | -.485 |
| VAR00011 | .673 | .586 | -.452 |
| VAR00012 | .545 | -.751 | -.373 |
| VAR00013 | .710 | .622 | .073 |
| VAR00014 | .602 | -.453 | .653 |
| VAR00015 | .943 | -.288 | .157 |
| VAR00016 | .716 | .644 | .265 |
| VAR00017 | .943 | -.288 | .157 |
| VAR00018 | .710 | .622 | .073 |
| VAR00019 | -.910 | .359 | .208 |
| VAR00020 | .502 | -.864 | -.037 |
| VAR00021 | .716 | .644 | .265 |
| VAR00022 | .943 | -.288 | .157 |
| VAR00023 | .673 | .586 | -.452 |
| VAR00024 | .943 | -.288 | .157 |
| VAR00025 | .673 | .586 | -.452 |
| VAR00026 | .716 | .644 | .265 |
| VAR00027 | .765 | -.379 | -.520 |
| VAR00028 | .716 | .644 | .265 |
| VAR00029 | .943 | -.288 | .157 |
| VAR00030 | .673 | .586 | -.452 |

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Table 5: Rotated Component Matrix^b

| | Component | | |
|----------|-----------|-------|-------|
| | 1 | 2 | 3 |
| VAR00001 | .770 | -.030 | .637 |
| VAR00002 | .993 | -.112 | .022 |
| VAR00003 | .805 | .461 | -.333 |
| VAR00004 | .950 | -.311 | -.016 |
| VAR00005 | .008 | .344 | .565 |
| VAR00006 | .993 | -.112 | .022 |
| VAR00007 | .105 | .977 | .179 |
| VAR00008 | .895 | .427 | .114 |
| VAR00009 | .105 | .977 | .179 |
| VAR00010 | .582 | .197 | .688 |
| VAR00011 | .051 | .606 | .794 |
| VAR00012 | .876 | -.351 | .331 |
| VAR00013 | .099 | .876 | .344 |
| VAR00014 | .802 | .325 | -.495 |
| VAR00015 | .895 | .427 | .114 |
| VAR00016 | .105 | .977 | .179 |
| VAR00017 | .895 | .427 | .114 |
| VAR00018 | .099 | .876 | .344 |
| VAR00019 | -.888 | -.203 | -.413 |
| VAR00020 | .950 | -.311 | -.016 |
| VAR00021 | .105 | .977 | .179 |
| VAR00022 | .895 | .427 | .114 |
| VAR00023 | .051 | .606 | .794 |
| VAR00024 | .895 | .427 | .114 |
| VAR00025 | .051 | .606 | .794 |
| VAR00026 | .105 | .977 | .179 |
| VAR00027 | .770 | -.030 | .637 |
| VAR00028 | .105 | .977 | .179 |
| VAR00029 | .895 | .427 | .114 |
| VAR00030 | .051 | .606 | .794 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

6.3 Data Interpretation and Findings

The SPSS software package 21.0 version was used for analyzing the data collected for this study. The central value (mean) of data was calculated through mode and deviation was calculated by the standard deviation method which was 0.5186. Multivariate data analysis has been done for achieving the objective of the study. Before applying factor analysis, data were tested by Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) measures. The Bartlett's Test of Sphericity showed statistically significant number of correlations among the variables (Approx. chi-square = 270.609, df = 28, significance = .000). The calculated value of chi-square was greater than tabulated value at 5% significant level and therefore the null hypothesis was rejected. Kaiser-Meyer-Olkin measure of sampling adequacy was employed for factor analysis. The measured value was 0.838, which was greater than 0.60 that indicated appropriateness of sample. Hence, all of these standards revealed that data was fit for factor analysis.

Principal Component Analysis was employed for extracting factors followed by Varimax rotation. The number of factors to be extracted was finalized on the basis of 'Latent Root Criterion' i.e. factors having Eigenvalues greater than 1 have been selected. All factor loadings greater than 0.40 have been considered for further analysis. Three factors were extracted which accounted for 96.693% of the total variance. These factors were named as excessive use of technological, time, labour. The Eigenvalues of these factors were 16.598, 9.176 and 3.234 respectively. The results of Principal Component Analysis with Varimax rotation are shown in Table 4. At first, it should be known that employees must aware about the technology being used in the company and the technology is being a very strong factor that affects the labour productivity. The survey of 30 respondents revealed that 27 respondents agreed with the statement. The deviation of the sample was very low i.e. 0.5186 derived by standard deviation method, therefore, the calculated central value was more appropriate.

The other part of the analysis was related to the time period that employees have to spend in completing their work or task or assignment. For the purpose, factor analysis with Varimax rotated loadings was used. In this process, two variables were given up due to loading factor standard (0.40). Factor 1 is composed of variables 1, 2, 3, 6, 7, 8, 10, 12, 13 which correlates to technology that has impact on employee productivity whereas factor 2 comprising variables 4, 5, 14, 15, 16, 17, 18, 19, 20, 25 shows time is the very important factor that affect employee productivity and factor 3 comprises of variables 21, 22, 23, 24, 26, 27, 28, 29, 30 emphasize on labour means employees who are working in the company their relation with the higher authority, skills and expertise they have, interpersonal relationship among them, all have great impact on labour productivity. Therefore, company needs to focus on these factors and try to minimize the issues that are problematic, which will be helpful to strengthen, enhance and improve the labour productivity. The factors and related loading factors are given in Table 5.

VII. Conclusion

In today's world, the IT industry is rated as one of the key industry. It helps in developing and achieving the goal of society. Study and knowledge of employee productivity are very important because they influence the economics of the IT industry. Prior knowledge of employee productivity during manufacturing can save money and time. Investments for projects are very high and because of the complexity in design, various factors can highly affect overall productivity, thus the project can end up adding even more time and money in order to be completed. This research is intended to identify the causes of probable factors affecting employee productivity in IT sector. This study investigates all possible factors through a structured questionnaire at **Tata Consultancy Services, Pune Office**. The survey results are subjected to analysis, and the ranking of factors is calculated using the factor analysis. The basic idea of the research is to study various factors affecting employee productivity and their impact on organizational effectiveness.

The three employee productivity affecting factors that emerged out from the study are: *technology, time and labour* and that have significant impact on organizational effectiveness. Moreover, for large companies, *technology factors* are highly effective. While in small and medium companies, *labour and time factors* need special attention because it has high effect on productivity. Practically it is difficult task to improve employee productivity upto 100%. But if you have properly control on above factors, productivity can be improved upto large extent and as a whole organizational effectiveness also increased.

VIII. Suggestions and Recommendations

Suggestion and Recommendations for Improving the Labour Productivity

- 1 Properly training to the employees
 - 1 Motivation to workers towards project completion
 - 2 Properly and in advance material procurement and management
 - 3 On time payment to the workers
 - 4 Systematic flow of work

- 5 Properly , clearly & in time supervision
- 6 Advance site layout
- 7 Maintain work discipline
- 8 Facilities to the labourers
- 9 Clearance of legal documents before starting of work
- 10 Systematic planning of funds in advance
- 11 Premansoon plan to avoid work stop
- 12 Maximum use of machinery and automation system
- 13 Advance equipment planning

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