

# INFLUENCE OF EMPLOYER'S PROVIDED ON-THE-JOB TRAINING ON EMPLOYEES' WAGE GROWTH AND JOB PERFORMANCE: AN EMPIRICAL EVIDENCE OF TELECOMMUNICATION INDUSTRY OF PAKISTAN\*

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## ABSTRACT

*This study examines the impact of on-the-job training (OJT) on job performance. Variables were selected from existing research studies to assess the effects of OJT on job performance of employees. The researcher uses database of 10 telecom companies situated in Islamabad region for analysis and determines that training has both a positive and a significant effect on both wage growth and change in job performance scores of workers. As implied by the model, employer-financed training is positively related to wage growth and job performance which shows the robustness of the relationship between training and worker productivity. OJT increases the skill level of workers and become more productive by which they deserve higher demand in the market. Organizations offer higher wages to hire them because of their higher skill levels. This research finding provides several important indicators that will influence the way economists and managers think about the relationships between OJT and wages and job performance.*

**Keywords:** OJT, Job Performance, Wage growth

## INTRODUCTION

Employees training contribution from economic context has been researched and proved significant results on the performance of organizations but in telecommunication industry of Pakistan, it is very new and therefore very limited studies have been conducted. The effort to quantify this factor has prompted many researches and attracted the attention of the business community. The Telecom Sector in Pakistan is expanding and after the deregulation policy in 1996 of Pakistan Telecom, a number of new companies were established. With the promulgation of Telecommunication (Re-Organization) Act 1996, Pakistan Tele-communication Authority was established as the Telecom Regulatory body. According to PTA report of 2005, the level of Teledensity of Pakistan is reported as 13.67% and currently in Pakistan there are 9 long distance operators and 6 are cellular companies which shows that market is opportunistic for this field of business. This study is an attempt of introducing the effects of on-the-job training of employees on the job performances or productivity in terms of wage growth.

**On-the-Job training:** An important prediction of basic human capital theory is that workers pay for their entire general and part of their specific on-the-job training in the form of lower starting wage and realize a return to this investment in the form of higher wage growth over time<sup>1</sup>.

According to the theory of human capital, investments in training lead to increases in worker productivity (Mincer, 1974). There is a direct link between on-the-job (OJT) and the employees' wages (Lillard & Tan, 1986; Barron, Black & Loewenstein, 1989; Brown, 1989; Holzer, 1990; Mincer, 199; Lynch, 1992; Bartel & Sicherman, 1994). That is, a firm that develops people internally

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may be able to enjoy productivity returns that do not require making investments in human strategic factors in open competitive markets (Barney, 1986).

Bartel (1995) proposes in the theory of human capital that investment in OJT leads to increases worker productivity is the focus of this study. The ultimate goal of company provided training opportunities to its employees is only to enhance job performance or productivity of employees which in return brings increase revenue generation from the least resources consumption.

According to Economists Approach about Human Capital labor is a measure of the work done by human beings. Wage is a basic compensation for labor and the compensation for labor per period of time is referred to the wage rate. The employees satisfaction by wage growth is another part of this study in which it reflects that how it is positively related to the job performance. Studies of researchers show that increase in wages is the only motivating factor in employees for getting high performance. Company will invest as long as the Present Value Benefits are greater than or equal to Present Value Costs [ $PV_{Benefits} \geq PV_{Costs}$ ]. Through OJT makes employees experienced and skillful in return their market demand increases which causes increasing in wages and also they become more productive.

<sup>1</sup> *the actual division of the cost and benefits of specific training between employer and employee has received considerable attention since* Becker (1962), Oi (1962). *Papers analyzing this include* Kuranti (1973), Mortensen (1978), Hashimoto (1981), Arnott & Stiglitz (1985).

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Under the theory of human capital, Bartel (1995) uses data of a large manufacturing company on investments in training and on-the-job productivity and determines that training has both a positive and a significant effect on both wage growth and change in job performance scores of worker. Medoff *et al.*, (1981) uses the human capital model on computerized personnel data of OJT made available to him by a large U.S. manufacturing firm and empirically testifies that there is a positive relationship between high wages and high productivity because of the on-the-job training. The impact of training on the individual's performance score can be compared to training effect on wages in order to test the strength of the measured relationship between training and productivity on the job.

George Loewenstein *et al.* (1991) correlate wages and market experience of the worker. Wage growth should be equivalent to the returns to investment in on-the-job training plus the change (reduction) in the investment from period minus depreciation of the stock of human capital. James (1989) analyzes that how firm-specific wage growth occurs exclusively during periods of on-the-job training. It is suggested that within-firm wage growth must be determined at the same time when productivity growth should be determined. Human capital model is used in this study which shows that skills grow continuously at a constant proportional rate during each year of on-the-job training, and that wages rise in proportion to skills. Further it shows that in the absence of productivity growth, there is no cause of wage growth.

Lisa (1992) analyzes that private sector training plays a significant role in the determination of wages and wage-growth of the 70% of young workers in the United States who do not graduate from colleges. After getting on-the-job training, the worker's wages and wage-profiles slope goes upward. This upward-sloping wage profile occurs as human capital or skill increases with experience. David Knoke & Ishio (1994) explain that employers through job-training practices can enhance skills of their employees from basic literacy to interpersonal sensitivity. Training is an integral part of the employer-employee relationship. Large establishments with high formalization provide more on-the-job training. Extensive job ladders and promotion procedures are introduced in these organizations that are why they provide more comprehensive and generous on-the-job training to their employees.

Daron Acemoglu *et al.*, (1999) correlates the skills of the labor force (human capital) with the economic performance. Study reveals that most lines of business require specific skills which can not be provided by the general purpose education. New technologies and organizations require continuous learning by workforce training. Further the authors noted down from the study that training of workers is a prerequisite for industrialization. Lisa & Sandra (1998) correlate the on-the-job training

with the size of organization. The authors analyze that smaller employers are much less likely to provide formal training programs than employers in larger establishment. Results show that high-performance oriented organizations focuses on R & D (capital intensive) and prefer to hire qualified workers. Ramon Valle *et al.*, (2000) analyze that human resources are being considered as a significant factor of sustained competitive advantage for the company.

Mincer (1974) correlates investment in on-the-job training with performance of and wage growth of employees. He hypothesizes that those individuals in company who receives training experienced significant increases in wage growth. He further says that training provides a unique opportunity of increasing performance of employees apart from wages. Result shows that training has a positive and significant effect on job performance by which it shows relationship between training and productivity. Becker & Mincer (1962) suggest through the human capital model that an individual's decision to invest in training is based on an examination of the net present value of the costs and benefits of such an investment. Investment is made on individuals training during the initial period and receives returns to the investment in subsequent periods. John *et al.*, (1989) analyze that on-the-job (OJT) is an important activity during the early months of employment. Approximately 30% of a newly hired employee's time is typically spent in OJT activities during the first 3 months of employment. Therefore, OJT constitutes a significant investment by worker and employer.

Richard & Frank (1994) analyze that deficiencies in the cognitive skills of work-force may be significant obstacle to improve productivity by restructuring job and by increasing individual workforce's responsibilities for product and service quality. On-the-job training investments require additional short-run outlays that will only be recouped later on if the training actually increases worker skills and the new skills result in cost savings, increased output, and improved quality. Result shows that by improving information flow about the potential value of training, about how to actually train, and about how to pay for training then a training system can encourage firms under competitive pressure to invest in their workers.

### **Relationship between On-The-Job Training, Wage Growth and Job Performance**

#### ***Hypothesis#1***

OJT and WG: The literature maintains that there is a possible positive relationship between the two components i.e. "OJT" and "wage growth". The organization with higher investment in on-the-job training would also have higher skilled employees who are more productive in returns to the company therefore company will pay them higher.

H<sub>01</sub>: There is no correlation between on-the-job training and wage growth.

H<sub>01</sub>:p=0

H<sub>11</sub>: There is relationship between on-the-job training and wage growth.

H<sub>11</sub>:p≠0

#### ***Hypothesis#2***

OJT and JP: The researcher assumes that there is a possible positive relationship between the two components i.e "on-the-job training" and "job performance" of employees. The organization with higher investment in human capital stock of training will in return generate skillful workforce who will be more productive.

H<sub>02</sub>: There is no correlation between on-the-job training and job performance.

H<sub>02</sub>:p=0

H<sub>12</sub>: There is relationship between on-the-job training and job performance.

H<sub>12</sub>:p≠0

### Hypothesis#3

WG and JP: The researcher assumes that there is a possible positive relationship between the two components i.e. “” wage growth” and “job performance” of employees. Higher salaries receiving employees’ means they are more productive to organization.

H<sub>03</sub>: There is no correlation between wage growth and job performance.

H<sub>03</sub>:p=0

H<sub>13</sub>: There is relationship between wage growth and job performance.

H<sub>13</sub>:p≠0

### Hypothesis#4

OJT, WG and JP: The researcher believes that there is a causal relationship between the independent variables (on-the-job training and wage growth) and the dependent variable job performance of employee. The intent is to identify the extent to which the independent variables can predict the variance in the dependent variable.

H<sub>04</sub>: The independent variables (on-the-job training, wage growth) will not significantly explain the variance in the job performance of employee.

H<sub>04</sub>:p=0

H<sub>14</sub>: The independent variables (on-the-job training, wage growth) will significantly explain the variance in the job performance of employee.

H<sub>14</sub>:p≠0

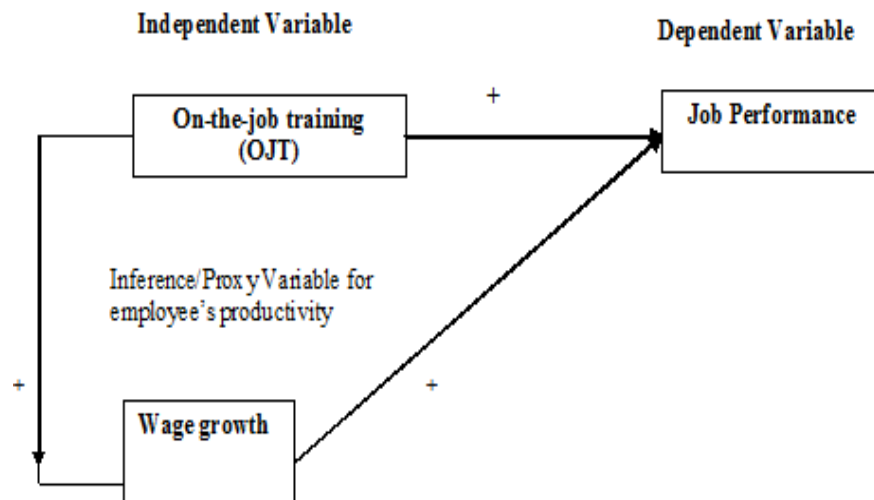


Figure 1.

## METHOD

### Participants and Procedure

Participants were 120 operational level employees of 10 different telecom companies operating in Islamabad and each organization would have 8 to 10 employees’ participation in the survey. Most of the respondents have to be in management positions from corporate employees’ development departments and technical departments. For deciding on the design and the size of sample, we started with seeking permission for data collection through mail to all 10 different telecom companies operating in Islamabad. Moreover, the permission was subject to the ultimate willingness of the

concerned employees. This was done because of busy schedule of employees. Thus, keeping in view certain constraints such as employees' involvement in administration, participation in national or international training workshops and unwillingness to respond due to some personal reasons, participants were approached in their offices by the first author. Participants were briefed about the survey completion time, i.e., maximum 15 minutes, the study purpose and confidentiality.

For drawing the sample, we used the proportionate stratified random sampling technique with no stepping random sheet. We collected information about the total number of employees of corporate employee development departments and technical departments from the respective websites of selected telecom companies of the Islamabad.

As regards sample size, we used the table developed by Krejcie and Morgan (1970) (cited in Sekaran, 2003, p. 294). According to them, with 95% confidence interval and 5% margin of error, for population equal to 800 the sample size should have been 260 and for  $N = 900$ , size of 269 was considered sufficient. Thus, corresponding to the present study's population, i.e., 861, the interpolated sample size approximated to 266. Each telecom company was considered as a stratum (see Table 1). Out of 266 distributed questionnaires, we received back a total of 138 questionnaires with a response rate of 52%. However, 18 were found to be having more than 25% blank responses. Therefore, 120 questionnaires were found to be useable for further analysis. Table 2 reveals the overall profile of the participants.

**Table 1. Population and Sample**

Telecom Companies / Organizations	Total employees	Proportion of each stratum	Participants Approached	Participants Responded	Response Rate (%)	Useable Cases (N)
1-Dialog	061	08	30	16	54	11
2-Insta	084	12	36	15	42	11
3-Mobilink	165	10	30	15	50	10
4-Nokia	032	04	10	08	80	08
5-Paktel	050	09	30	20	67	20
6-Siemens	102	10	30	20	67	17
7-Telenor	110	15	19	06	32	13
8-Ufone	047	12	36	13	36	12
9-Warid	124	12	30	15	50	11
10-ZTE	086	08	15	10	67	07
Total	861	100	266	138	52	120

Table 2. Participants' Profile

N = 120		
Gender	f	%
Male	76	63.3
Female	44	36.7
Employee's Department		
Technical and Operational Level	89	74.2
Corporate Employee Development	31	25.8
Education of Employees		
Graduation	44	36.7
Master	76	63.3
Exposure to Type of Organization		
Cellular	97	80.8
Non Cellular	23	19.2
Experience		
1-3 years	34	28.3
4-6 years	32	26.7
7-10 years	18	15.0
More than 10 years	36	30.0
Employee's Age		
Between 20.0 to 25.0 years	41	34.2
Between 25.1 to 30.0 years	25	20.8
Between 30.1 to 35.0 years	24	20.0
Between 35.1 to 40.0 years	6	05.0
Between 40.1 to 50.0 years	14	11.7
Between 50.1 to 60.0 years	10	08.3

### Measures

For adapting measures, we considered two aspects, i.e., ensuring the consistency between measures included in the survey questionnaire and the respective construct of interest and incorporating slight modifications to help participants acclimatize with the study. Moreover, for managing the complexity in Structural Equation Modeling, we reduced each construct to a number of items revealing the acceptable factor loadings. This was done using confirmatory factor analysis. Details are summarized in Table 3.

Table 3. Measures, Descriptive Statistics, Inter-item Consistency and Standardized Factor Loadings

	M	SD	Standardized Factor Loadings*	
N = 120				
Measures	Rating scale‡; Item example			
<b>On-the-Job Training</b>				
OJT1.	3.11	1.027	0.669	How often on-the-job training program is offered you by your organization?
OJT2.	2.84	1.012	0.756	
OJT3.	2.92	0.992	0.537	
OJT4.	2.95	1.060	0.561	
OJT5.	2.98	1.069	0.694	
OJT6.	2.93	1.083	0.669	
OJT7.	3.88	1.045	0.999	
<b>Wage growth</b>				
WG1	2.78	1.030	0.782	Do you think that your salary is higher than other peers on the same job category because of on-the-job training you received?
WG2	2.73	1.045	0.673	
WG3	2.96	1.091	0.589	
WG4	2.77	1.044	0.523	
<b>Job Performance</b>				
JP1.	3.88	1.012	0.956	Do you think that employees become more productive after receiving on-the-job training?
JP2.	2.99	1.033	0.671	
JP3.	3.98	0.949	0.867	
JP4.	3.67	1.044	0.823	
JP5.	3.88	1.022	0.778	
JP6.	3.95	1.051	0.619	

\* all factor loadings are significant at  $p < 0.001$

‡ A → 5 = Very Often, 4 = Often, 3 = Sometimes, 2 = Almost Never, 1 = Never.

B → 5 = Strongly Agree, 4 = Agree, 3 = Not Sure, 2 = Disagree, 1 = Strongly Disagree.

### Reliability and Validity

Since, items were reduced and slight modifications were made in the included ones, therefore, we ensured the inter-item consistency coefficients and demonstrated the construct reliability and validity (see Table 4). All inter-item consistency coefficients were well above 0.60 (Tang, 2008) and all composite reliability measures approached or crossed the threshold of 0.70 (Lee *et al.*, 2007). For validating constructs, we confirmed convergent and divergent validities. The standardized loadings



well above the threshold of 0.5 at  $p < 0.05$  provided evidence of convergent validity (Fraj, Martinez, & Montaner, 2006). Moreover, the square root of each construct's average variance extracted ( $\sqrt{AVE}$ ) was found to be larger than its corresponding correlation coefficients. This revealed evidence of divergent validity (Lee *et al.*, 2007). For details see Table 4.

**Table 4. Pearson's Correlation Coefficients, Inter-Item Consistency, and Construct Reliability and Validity**

Constructs	Cronbach's $\alpha$	Composite Reliability	Correlations		
			1	2	3
On-the-job training	0.811	0.804	1 N = 120	<b>0.516<sup>a</sup></b> N = 120	<b>0.504<sup>c</sup></b> N = 120
Wage growth	0.787	0.731	<b>0.516<sup>a</sup></b> N = 120	1 N = 120	<b>0.633<sup>b</sup></b> N = 120
Job Performance	0.728	0.722	<b>0.504<sup>c</sup></b> N = 120	<b>0.633<sup>b</sup></b> N = 120	1 N = 120
$\sqrt{AVE}$			0.652	0.678	0.745

<sup>a</sup>  $p < 0.10$ , <sup>b</sup>  $p < 0.05$ , <sup>c</sup>  $p < 0.01$

**Data Analysis Approach**

Statistical Package for Social Sciences (SPSS) vs.16 has been used for calculation and analysis of the data gathered through questionnaires. This part of data analysis consists of quantitative analysis for which three methods are used:

- a) Correlation analysis
- b) Regression analysis

**RESULTS**

For hypothesis testing, data are analyzed using Pearson's correlation coefficients (see Table 4). There is a strong positive relationship between on-the-job training and wage growth. The relationship value is .516 and is significant ( $p < 0.10$ ). Which means that the both these variables co-vary ( $H_{11}$  is accepted). It shows that employees' are highly skilled when they get training and market demand is increased and they are offered high salaries inside and outside the organizations. There is a strong positive relationship between on-the-job training and job performance. The relationship value is .504 and is significant ( $p < 0.01$ ). What it means that these two variables co-vary ( $H_{12}$  is accepted). The organizations which provide higher on-the-job training facilities would also show high performances of employees. There is a strong positive relationship between wage growth and job performance. The relationship value is .633 and is significant ( $p < 0.05$ ). This shows that both the variables co-vary ( $H_{13}$  is accepted). This means that employees who get higher wages have higher job performances.

The regression run on the model i.e. the Job Performance of an employee is dependent on On-the-job Training and Wage growth (see Table 5) and it is evident from the results that the Beta received of on-the-job training is .544 and the Beta received on wage growth is .153 it shows that the contribution of on-the-job training is more as compared to wage growth.

**Table 5. Regression Coefficients**

	Beta Coefficient	t-value	Sig
Constant	.798	2.001	.049
On-the-job Training	.544	1.221	.000
Wage growth	.153	3.867	.000



Dependent Variable: Job Performance

Independent Variables: On-the-job training, Wage growth

\*\*Correlation is significant at the 0.001 level (2-tailed)

The ANOVA test is used to determine the impact independent variables have on the dependent variable in a regression analysis (see Table 6). The value of R-Square received is .439 which shows that the variables bring about 44% variations in the job performance of an employee. Which indicates that these variables bring sufficient variation in the dependent variable, only 56% variation is caused by other variables. Results of the F-test shows that the overall model is statistically significant and these two variables i.e. on-the-job training and wage growth predicts the variation in the dependent variable ( $H_{14}$  is accepted). These findings reconfirm the previous studies and models presented by researchers such as Ann P. Bartel (1995), James L. Medoff et. al. (1981), James N. Brown (1989).

**Table 6. Analysis of Variance (ANOVA)**

	Value	Sig
R Square	.439	
F	16.988	.000

## DISCUSSION

This research's major finding is that well-trained and highly skilled employees are more effective in their performances. In this research it has been established that there is a positive relationship between on-the-job training and wage growth (see hypotheses # 1). This research has also established that there is a positive relationship between on-the-job training and job performance (see hypotheses # 2). In this research it has been established that there is a positive relationship between wage growth and job performance (see hypotheses # 3). The Beta received of on-the-job training is greater than wage growth; it shows that the contribution of on-the-job training is more as compared to wage growth. The research has also proved that job performance of an employee can be predicted through on-the-job training and wage growth hence substantiating hypothesis # 4. Approximately 44% variation in the job performance of an employee can be predicted through the on-the-job training and wage growth of an employee. The overall model was significant at .049 level. The results in this study will be helpful for top managers and supervisors to understand why on-the-job training is important for employees and how well-trained workforce to contribute in the output of organization. Managers should be aware of effect of on-the-job training on job performance of an employee. In addition, this research helps that project managers/ team supervisors will try to create opportunities of on-the-job training for the workforce.

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