Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 11, Issue 2, June 2020: 422-431

# A Comparative Study of Manpower Productivity of Cooperative Banks for Human Resource Development in Kannur and Trivandrum Districts of Kerala

**Mr. Krishna Kumar Padhi and Dr. Nikita Dholakia**

## Abstract

Human resource development (HRD) is concerned with the provision of learning and development opportunities that support the achievement of business strategies and improvement of organizational, team and individual performance. This is an overall feeling that is conveyed by the physical layout, the way employees interact and the way members of the organization contact themselves with outsiders. (It is provided by an organization). Many researchers have conducted studies and found that HRD climate affects the performance of the employees.

In a plethora of literature, it is found that the impact analysis of HRD programs generally related to performance or productivity or profitability enhancement programs of the organization. But the perception based analysis for finding out the factors affecting the process of undertaking HRD programmes and relating those for policy planning of HRD programmes which will ultimately have positive impact on the organizational goal has so far been found far and few. Thus, an attempt has been made in this study to identify and analyze the factors affecting the process (needs, feedback and outcomes of training) of HRD programmes based on perceptions of the employees on each of the aspects so as to provide factor inputs to the planners of the organization under study for designing the optimal programmes which will ultimately be resulted positively for the CCBs of Kunnur and Trivandrum district of Kerala.

**Keywords**: Human Resource Department, Productivity measurement, Performance.

## Introduction

The business organizations are attaching greater importance to human resources because, human resources are the biggest source of competitive advantage and have the capability of converting all the other resources into Product/Services. Thus, the better the Perceptions of the human resource on the Prevailing HRD climate of the organization, the effective will be their Performance and higher will be the Productivity of the organization and vise versa. Thus, the management of human resources with a conducive HRD climate is an important aspect attributing significantly to the study of the Productivity management of the organization. The study of HRD climate hence very important for all the organizations and banking sector is not an exception especially in the present situation of financial recession. Productivity measurement is relevant in evaluating the overall performance of any economic system, firm, industry or economy, the technique may also be useful for analyzing the nature of growth of the economic system whether input intensive as distinct from input extensive. Average productivity, partial productivity, total factor productivity or total productivity measures are usually arrived at for this purpose. The word productivity carries a

multitude of meanings, to some it measures the personal efficiency of labour, to other it is the output derived out of a composite handle of resources, to be more philosophic it is almost synonymous with welfare and in one extreme case it is identified with time. The problem in productivity measurement becomes difficult due to the fact that the analytical frame work to measure both input and output has limitations. So only some of the factors of input and output can only be measured. It can be stated that while the inputs and outputs are real phenomena the relationship between the two is only an abstract one while real phenomena are amenable to techniques of observation and quantitative verification, abstract phenomena can only be realized. An unbiased realization of the phenomena requires, in turn, full details of the universe from where the productivity relationships are abstracted. In view of the facts stated above the present study limits its discussion to one major input i.e. manpower. The inputs in traditional sense are manpower and material. However, during the course of time and development of the subject matter of productivity analysis the list of inputs has also been expanded to include financial, technical, managerial skill, socio political environment, business decision of government etc. these inputs have found their place in the empirical measurement and interpretive analysis of productivity management. Not all of them can be measured. This is due to the absence of suitable measures to represent these concepts of inputs or required data on such inputs from the sources. Keeping this in view an attempt was made to measure the manpower productivity of the banks. There have been many, such approaches varying from the methods of measuring partial productivity of individual inputs to the techniques of measuring total productivity.

## Objective of the study

The present study aimed at productivity measurement of two District Central Cooperative Banks (DCCBs) of Kerala viz. Kannur CCB and Trivandrum CCB located in two extreme of Kerala state using productivity accounting model (PAM). This model is chosen for the following reasons.

(i) It is based on common accounting

(ii) The model uses data from the annual financial report of the banks. So, the secondary data can be used in the model for analysis and monitoring the efficiency.

Productivity accounting is a technique of measuring and analyzing productivity with respect to total output to total input after both have been revalued to some appropriate scale of constant prices and it is grounded on basic accounts of a firm.

## Research methodology

Methodology or philosophy of research process includes the assumption and values that serves as a rationale for research and the standard or criteria a researcher uses for interpreting data and deriving the conclusions. The present study includes introduction of the model, collection of data, selection of base year, importance of comparison testing hypothesis through Chi square test and Kruskal Wallis one way analysis of variance test. A brief description of all these are as follows.

### *Introduction of the models and data base*

Originally propagated by Davis 1955, this model defines productivity as a ratio of output to input. The model suggests that the output and input should be valued in monetary unit as to avoid the quantitative measurement of the variables and problem of representing them by a single unit of measurement. To avoid the inflation of monetary unit the output and input can be revalued in term of a common base year price.

***Data collection***

The data collection has been collected from secondary sources i.e. Annual financial reports and published financial statements of the banks to estimate the manpower productivity aspects of the two selected DCCBs viz. Kannur DCCB and Trivandrum CCB. The year 2005-06 has been assumed arbitrarily as the base year to analyze the productivity level in order to know the performance of the banks under study. The data for the year 2005-06 to 2017-18 were collected.

***Importance of comparison***

The importance of comparison is established due to the fact that through comparison only, one can gain insight into the trends and make intelligent interpretation of data. Comparison may be either interbank or intra banks. The interbank comparison helps the organization to

(i) Keep business policies and operations under constant review and to determine steps towards improvement.

(ii) Reflect the level of success and efficiency of competitors.

(iii) Judge relative performance under different managerial setup and economic condition.

(iv) Measure performance results on the basis of norms developed by the interbank comparisons.

***Revaluation of variables***

The revaluation of the variables is done by index number adjustment. All analysis has been done after revaluating the variables. Since this model do not use quantitative information, the revaluation is done by application of price indices with reference to base year.

***Hypotheses of the study***

The two following hypothesis have been tested with two corresponding alternative hypothesis for the purpose of analyzing man power indices of the banks.

**Hypothesis-I:** Whether the man power productivity indices can be represented as a straight-line trend.

**Hypothesis-II:** Whether there is any significant difference between the man power productivity of the banks.

The hypotheses have been framed as follows:

**First**

**Null Hypothesis ($H_0$):**

The man power productivity indices can be represented by the line of the best fit.

**Alternative hypothesis ($H_a$):**

The indices cannot be represented by the line of the best fit.

Level of significance: 5%

Statistical test: Chi Square Test

Critical value: To be obtained from Chi Square Table

**Decision rule**

If Chi square value calculated is less than the critical value than accept the null hypothesis else reject the null hypothesis and accept the alternative hypothesis.

**Second**

**Null hypothesis ($H_0$):** There is no significant difference between the man power productivity ratios of the banks.

**Alternative Hypothesis ($H_a$):**

There is significant difference between he an power productivity ratios of the banks.

If H calculated ≤ H critical than accept ($H_0$) else reject ($H_0$) or accept ($H_a$)

Level of significance = 5%

Statistical test = Kruskal-Wallis Test

H (critical) = 3.84 from the Table with 1 df

Degrees of freedom, symbolized as **df**= **k**—1 = 2—1=1 where **k=** number of groups

**Decision Rule:** If H (Calculated) is less than or equal to H (Critical) than accept the Null Hypothesis or else reject the Null Hypothesis and accept the alternative Hypothesis.

## Findings and discussions

The man power productivity and the result of the statistical analysis are recorded in each table of both the banks. Statistical analysis has been carried out and the trend value of the indices has been calculated by linear regression to develop the trend equation (OLS method).

### Man power productivity in Kannur CCB (KCCB)

The total income of KCCB as revealed form the table shows a rise over 13 years span from Rs. 46947000.00 in 2005-06 to Rs.632000000.00 in 2017-18 while man power input rose from Rs. 31064948.00 in 2005-06 (Base year) to Rs. 321000000.00 in the year 2017-18.

Since input increased less in proportion to the output during these years, the man power productivity ratio as well as productivity indices showed a upward trend after 2008. The man power productivity ratio was 1.511 in the year 2005-06 and in the year 2017-18 increased to 1.969. It was lowest in the year 2008 with the value 1.182. The input of labour or man power productivity shows a declining trend from 2005-06 to 2008-09 and then shows an upward trend. From the analysis the man power productivity index remained as low as 88.54 over the base year registering a decline of 11.46% over the base year in the year 2008-09. The average man power productivity index increased to 110.85% of the base year i.e., 2005-06 and thus registering a rise of 10.85% of the base year.

The chi square value calculated is 42.76 which is much more than the critical value, 21.03 with 5% significance and 12 degree of freedom. Hence the null hypothesis is rejected.

Therefore the man power productivity indices cannot be represented by the lest square straight-line trend. The trend equation is found to be $Y_c$ = 110-85+ 4.18 X

Where X = t (1,2,3,4… 13) where trend base is $7^{th}$ year.

$Y_c$ = Trend value of productive index

T = Financial year for which trend values calculated

Here the equation shown a positive productivity growth as depicted by its + 4.18 coefficient value of X.

In general, it can be predicted from the man power productivity analysis of the bank that the performance with respect to man power productivity has been better than the base year standard.

This performance may be attributed to proportion of rise in actual wages and increase in man power expenditure with respect to the increase in total income, resulting in increase of productivity ratio with respect to the base year. The increase in wages has been 10.3 times with respect to the base year. While increase in total income has been 13.5 times with respect to the base year.

It is suggested that employment generation in the bank should be in accordance with the rise of productivity ratio and productivity index. The time study and other optimizing tools may be used to reduce idle time and thought should be given in the management level to utilize existing man power more efficiently.

**Table-1 Manpower productivity in KCCB**
**(2005-06 to 2017-18)**

| **Year** | **Output** | **Input** | **Productivity Ratio** | **Productivity index** | **Trend values of productivity Index ($Y_c$)** |
|---|---|---|---|---|---|
| 1 | 46947000 | 31064948 | 1.511 | 100 | 56.52 |
| 2 | 51278000 | 35210983 | 1.456 | 96.38 | 60.7 |
| 3 | 59666000 | 39953804 | 1.493 | 98.83 | 64.88 |
| 4 | 63831000 | 47709689 | 1.338 | 88.54 | 69.06 |
| 5 | 63545000 | 53768760 | 1.182 | 78.21 | 73.24 |
| 6 | 90939000 | 60612667 | 1.500 | 99.29 | 77.42 |
| 7 | 107334000 | 67730322 | 1.585 | 104.88 | 81.6 |
| 8 | 131566000 | 77857000 | 1.690 | 111.84 | 85.78 |
| 9 | 139136000 | 83947000 | 1.657 | 109.69 | 89.96 |
| 10 | 228429000 | 103437000 | 2.208 | 146.15 | 94.14 |
| 11 | 269449000 | 100732000 | 2.675 | 177.03 | 98.32 |
| 12 | 253186000 | 167699000 | 1.510 | 99.92 | 102.5 |
| 13 | 632000000 | 321000000 | 1.969 | 130.30 | 106.68 |
| $\chi^2$ | 42.76 | | | | |
| **A** | 110.85 | | | | |
| **B** | 4.18 | | | | |

**N.B:**

1. Y = 110.85+ 4.18X $\rightarrow$ Trend Line Equation
2. Trend Base = 7$^{th}$ Year, X $\rightarrow$ Time period for Trend
3. a = Constant
4. b= Coefficient
5. Year under study – 13 years (2005-06 to 2017-18)
6. $\chi^2$ calculated Chi square value.

**Source: Annual reports KCCB.**

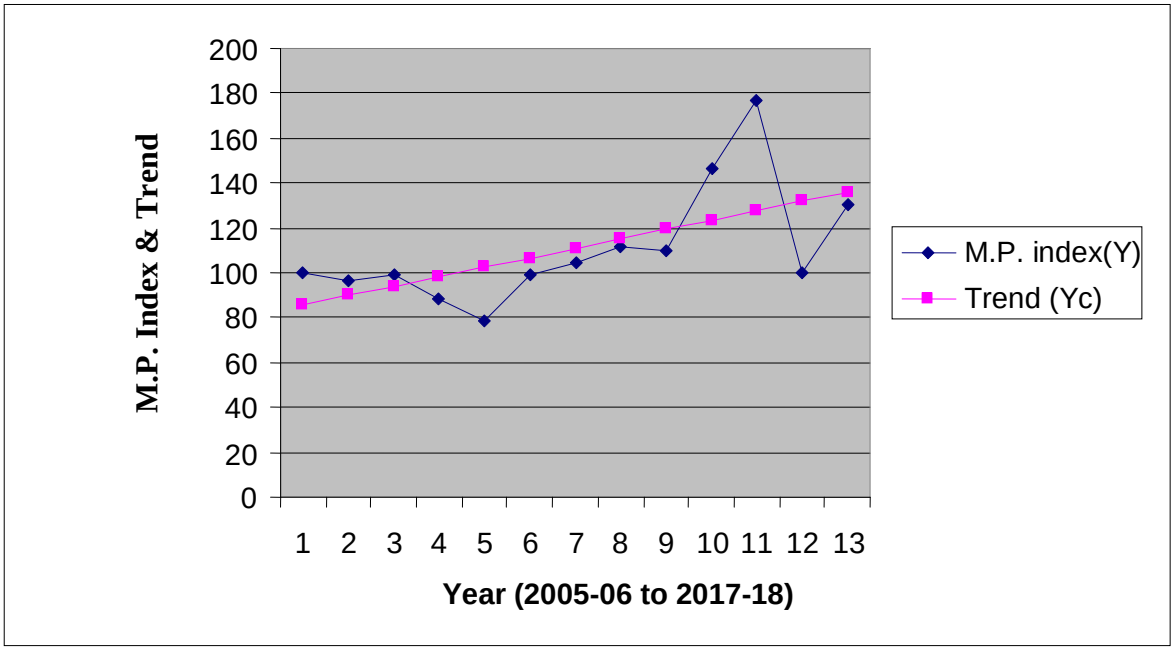



**Figure-1 KCCB**

### 4.2 Man Power Productivity in Trivandrum CCB (TCCB)

The man power productivity and results obtained by statistical analysis is depicted in table

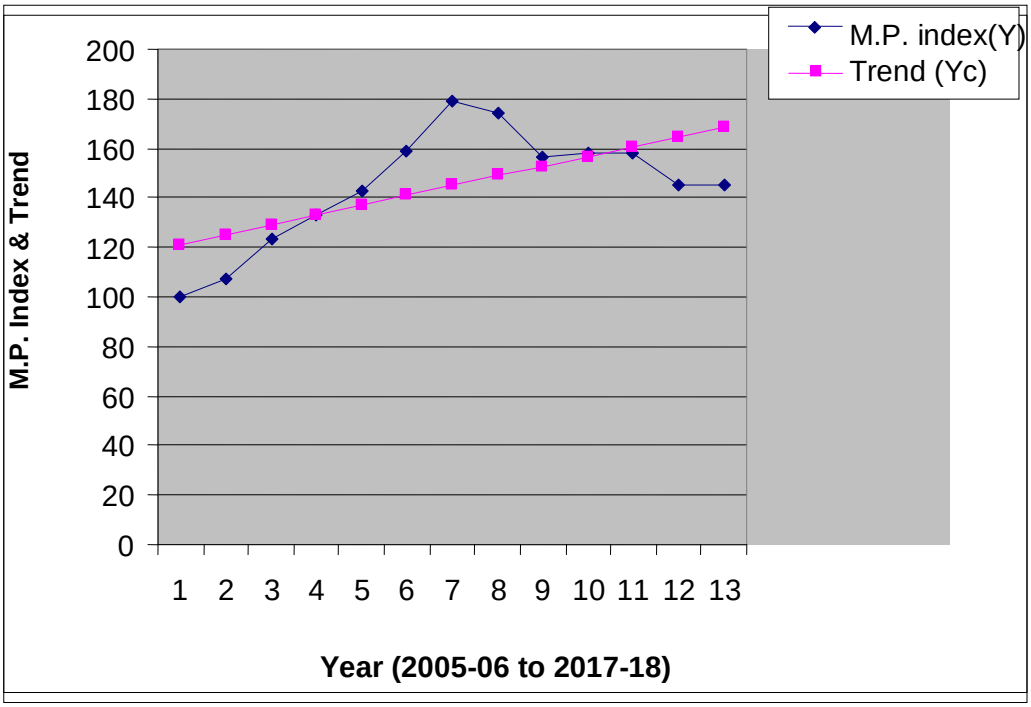
**Manpower productivity in TCCB**
**(2005-06 to 2017-18)**

| Year | Output | Input | Productivity Ratio | Productivity index | Trend value of productivity index (Yc) |
|---|---|---|---|---|---|
| 1 | 51129931 | 9982450 | 5.122 | 100 | 93.4 |
| 2 | 65039062 | 11810570 | 5.507 | 107.51 | 97.36 |
| 3 | 84930796 | 13427017 | 6.325 | 123.49 | 101.32 |
| 4 | 111755884 | 16398273 | 6.815 | 133.06 | 105.28 |
| 5 | 146302639 | 20056950 | 7.294 | 142.41 | 109.24 |
| 6 | 199076431 | 24447318 | 8.143 | 158.98 | 113.2 |
| 7 | 234366274 | 25540056 | 9.176 | 179.16 | 117.16 |
| 8 | 278130946 | 31149223 | 8.929 | 174.33 | 121.12 |
| 9 | 312180154 | 38889110 | 8.027 | 156.72 | 125.08 |
| 10 | 363172096 | 44766418 | 8.113 | 158.39 | 129.04 |
| 11 | 392323157 | 48355877 | 8.113 | 158.40 | 133 |
| 12 | 365333100 | 49000000 | 7.456 | 145.56 | 136.96 |
| 13 | 400333100 | 53900000 | 7.427 | 145.01 | 140.92 |
| | | | | **1883.03** | |
| $\chi^2$ | 27.08 | | | | |
| **A** | 144.85 | | | | |
| **B** | 3.96 | | | | |

**N**.B.:

1. Y = 144.85+ 3.96X → Trend Line Equation
2. Trend Base = 7th Year, X → Time period for Trend
3. a = Constant
4. b= Coefficient
5. Year under study – 13 years (2005-06 – 2017-18)
6. $\chi^2$ calculated Chi square value.

**Source: Annual reports TCCB**




**TCCB**

The increase in the output of the bank is about 7.83 times over a period of 13 years. In the base year 2005-06 for calculation the output is Rs. 51129931.00 and in the year 2017-18 it is recorded to be Rs. 400333100.00. It is observed from the table that the output has an increasing trend up to the year 2010-11 and then it decreases. The man power productivity ratio was 5.121 in the base year 2005-06 and it has increased to 9.176 in the year 2010-11. There is a decrease form 9.176 in the year 2010-11 to 7.257 in the year 2017-18. The man power productivity indices show an increasing trend and the rise is 79.16% over a period of seven years from the base year after that it falls and finally in the year 2017-18 the rise is 45.01% from the base year. The average productivity indices are calculated to be 144.848% over the base year 2005-06.

The Chi square value calculated is equal to 27.08 and the critical value of chi square with 5% significance with degree of freedom is found to be 21.03 from the table. So 27.08 is greater than 21.03 critical value. Hence, the null hypothesis is rejected. The result shows that the productivity indices cannot be represented by the least square straight line turned. The equation is found to be

$Y_c = 144.85 + 3.96\ X$

The coefficient of trend equation is positive. So, it shows as increasing trend.

$Y_c$= Trend value of the productivity index

T = the year for which trend value is calculated
X = (1,2,3,4,5,6, …… 13)
Trend base is $7^{th}$ year.
The increase in the productivity ratio and indices over the KCCB shows that there is an efficient utilization of the human resources in the TCCB than the KCCB. The management is somewhat efficient in employing the human power to increase the output as well as the productivity of the bank in comparison to KCCB.

**A Comparative Study of Man Power Productivity of both the Banks**

The man power productivity data of both the banks studied are shown in Table It is clear from the table that the average man power productivity ratio of KCCB is 1.675 which is much less than the mean man power productivity ratio of 7.419 of TCCB.
So far as the achievement in man power productivity are concerned these may be observed form the man power productivity indices. Progress made during the period in man power productivity indices. Progress made during the period in man power productivity as revealed by the indices is the highest 179.16 of the TCCB where as in the same year (2005-06) KCCB had a productivity index of 104.88 only.

The null hypothesis having straight line assumption has been rejected for both the banks. But the productivity index of TCCB seems to be much better than KCCB.

It may be said finally that the average man power productivity ratio during the period covered in this study is highest for the TCCB where as the KCCB showed poor performance. The highest value of productivity ratio of KCCB 2.675 is less than minimum productivity ratio of TCCB i.e. 5.121. On the whole the man power productivity picture for the KCCB is quite gloomy. The management should view this seriously and new management techniques like SSI (Short interval scheduling) and Brain storming should be applied to improve the situation. Quality circles should be encouraged to get better solutions to the prevailing situation.

In this era of competition and with the presence of private banks the target and goal can be achieved through proper utilization of man power and serious participation of the management to attain the same. The management should set the goal and monitor it properly. The efficiency should be suitably rewarded and inefficiency should be viewed seriously. Each employee should be made serious about his responsibility and should be allowed to participate whole heartedly to achieve the goal.

**Table-2 Manpower Productivity Ratio of Banks**
**Kruskal Wallis Test**

| Years | KCCB Man Power Productivity Ratio | KCCB Man Power Productivity Ratio Ranked | TCCB Man Power Productivity Ratio | TCCB Man Power Productivity Ratio Ranked | Combined Rank |
|---|---|---|---|---|---|
| 2005-06 | 1.511 | 7 | 5.121 | 14 | |
| 2006-07 | 1.456 | 3 | 6.515 | 16 | |
| 2007-08 | 1.493 | 4 | 6.325 | 15 | |

| | | | | | |
|---|---|---|---|---|---|
| 2008-09 | 1.338 | 2 | 6.815 | 17 | |
| 2009-10 | 1.182 | 1 | 7.29 | 20 | |
| 2010-11 | 1.500 | 5 | 8.14 | 24 | |
| 2011-12 | 1.585 | 8 | 9.176 | 26 | |
| 2012-13 | 1.690 | 10 | 8.92 | 25 | |
| 2013-14 | 1.657 | 9 | 8.027 | 21 | |
| 2014-15 | 2.208 | 12 | 8.112 | 22 | |
| 2015-16 | 2.675 | 13 | 8.113 | 23 | |
| 2016-17 | 1.510 | 6 | 7.271 | 19 | |
| 2017-18 | 1.969 | 11 | 7.257 | 18 | |
| | | **Total of Ranks= 91** | | **Total of Ranks= 260** | **91+260= 351** |
| | **Average Rank** | **7** | | **20** | **351/26= 13.5** |

**Source: Annual reports TCCB & KCCB.**

**N.B;**

$H = [12 / \{N(N+1)\} \times (\Sigma(\mathbf{T_g})^2 / n_g] - 3(N+1)$

**H=** $12/26(26+1)\ [(91)^2/13 + (260)^2/13] - 3(26+1) = 18.77$

The SPSS package has been used in calculating the Kruskal Wallis one way variance value (H). The calculated value of (H) works out at 18.77; the critical value of H is 3.841 with one degree of freedom and at 5% significance level.

The calculated value (H = 18.77) is much greater than critical value (3.841) hence, the Ha hypothesis is accepted. Therefore, there is a significant difference between the man power productivity ratios of the banks. It also leads to the conclusion that the individual efficiency of the banks matter more with regard to man power productivity. In our earlier discussion the TCCB bank has shown better man power efficiency than the KCCB. Therefore, the management has the responsibility to create an environment for increasing productivity.

**References**


1. (ICA…reformulated statement of 1995) 13
2. (Whetten and Freeman 2002)
3. Caravan, T. N., Collins, E., &Brady, S. (2003). Results of the 2003 National Survey of Benchmarks. Limerick: CIPD Ireland and Kemmy Business School.
4. Cohen, D. J. 1990). The pertaining environment: A conceptualization of how contextual factors influence participant motivation. Human Resource Development Quarterly, 1, 387-398.
5. Freeman, R. E., & McVea, J. (2001). A stakeholder approach to strategic management. In M.A. Hitt, R. E. Freeman & J. S. Harrison (Eds.), The Blackwell handbook of strategic management (pp. 189-208). Maiden, MA: Blackwell.
6. Guest, 1997; Paauwe and Richardson, 1997; Appelbaum*et al.*, 2000). (proquest 56)
7. Huselid Mark A., Jackson Susan E., Schuler Randall S., Technical and Strategic Human Resources Management Effectiveness as Determinants of Firm Performance, Academy of Management Journal, Vol.40, No.1, 1997 (Published Online: 30 Nov, 2017 https://doi.org/10.5465/257025)

8. Jackson, S. E., &Schuler, R. S. (2003b). Managing human resources through strategic partnerships. Cincinnati, OH: South-Western (8th ed.)
9. Kraiger*et al.*, 1993; Salas and Cannon-Bowers, 2001). Salas, E. and Cannon-Bowers, J.A. (2001), "The science of training: a decade of progress", Annual Review of Psychology, Vol. 52, pp. 471-99
10. Marsden and Richardson (1994) (Proquest 56) page 5
11. Martocchio,J., &Baldwin, T. (1997). The evolution of strategic organizational training. Research in Personnel and Human Resources Management, 15, 1-46
12. May, G. L., Sherlock, J. J., &Mabry, C. K. (2003). The future: The drive for shareholder value and potential implications for HRD. Advances in Developing Human Resources, 5(3), 321-331.)
13. McLagan and Suhado link, Models for HRD practice, Training and Development Journal, January, 1989, Vol. 41, Issue. 9, pp 49-58.
14. N.S. Iyengar, and P. Sudarshan, (1982), "A Method of Classifying Regions from Multivariate Data," *Economic and Political Weekly*, Vol. 17, No. 51, pp. 2047-2052.
15. Nadler, Leonard, Developing Human Resources., *Gulf Publishing Company, Book Publishing Division, Box 2608, Houston, Texas 77001, 1970, pages 272*
16. Paauwe, J. HRM and performance: Achieving long term viability. Oxford: Oxford University Press.2004)
17. Rosenthal *al.*, 1997; Peccei and Rosenthal, 2001) (proquest 56)
18. Sambrook, S. (2005). Factors influencing the context and process of work-related learning: Synthesizing findings from two research projects. Human Resource Development International, 8(1), 101.
19. Swanson, R. A. (2001). Human resource development and its underlying theory. Human Resource Development International, 4(3), 299-313.)
20. Swanson, R., &Holton III, E. (1997). Foundations of human resource development. San Francisco: Berrett-Koehler.
21. Tsui, A.S. "Defining the Activities and Effectiveness of the Human Resource Department: A Multiple Constituencies Approach. "Human Resource Management, 20, 1 (1987), 359.
22. Walton, J. (1999). Strategic human resource development. Harlow, UK: Financial Times Prentice Hall.)
23. Yang, B. (2004), "Can adult learning theory provide a foundation for human resource development?", Advances in Developing Human Resources, Vol. 6 No. 2, pp. 129-45