Human Capital and Performance of Firms: An Empirical Study on IT and ITES Industries

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ABSTRACT
The original aim of the study is to perform monetary and performance measures to the level of human capital for a selected set of Indian firms.

This research proposal addresses this issue by examining the statistical relationship between human capital and performance levels across firms operating in the IT & ITES sectors in India during the time period 2004–2009. These two sectors are important for India (their share in the national pie is not small and they grew fast). Human capital is directly embodied in the employee classifications based on gender and work experience. Thus interesting measures and useful hypotheses are setup and tested. In order to obtain these measures, a system adapted by Scholz, Stein and Muller is adapted and used. It eventually became apparent that this general analysis offers a unified explanation of a wide range of empirical phenomena which have either been given, ad hoc interpretations.

Keywords---- Human capital, FTE, Value

I. INTRODUCTION
The world we live in today is almost a one-dimensional dot shrunk by rapid advances in information and communication technologies. Consequently, most organizations face intense competition devoid of almost all barriers. To establish and maintain a competitive edge over others, in such a situation, is indeed a Herculean task. Earlier studies on this issue suggest that [1] human capital be given the hero’s role in order to enhance productivity and competitive edge.

II. SIGNIFICANCE OF THE STUDY
An empirical study of this nature will be useful by itself. Moreover, its utility and significance improves by forming sub groups and making interesting comparisons. Obviously the two sectors can be compared. Further, since human capital is directly embodied in the employees classifications based on gender and work experience will also be taken up. Thus interesting and useful hypotheses are setup and tested.

III. OBJECTIVES OF THE STUDY
• Provide monetary measure of the level of human capital that a firm has at its command at two time points say 2004 & 2009 for a selected set of Indian IT & ITES firms.
• Provide performance measures for the same set of firms for 2004 & 2009.
• Make use of simple statistical methods to summarize the quantitative information obtained about the two variables i.e., level of human capital and firm performance level, also to examine the direction, strength and nature of relationship between these two variables.
• Examine the relation between the rate of change of human capital during this period and corresponding firm performance measures.

IV. TESTABLE HYPOTHESES ARISING OUT OF THE STUDY
• A higher level of investment leading to higher levels of human capital among female employees relative to male employees is more rewarding in terms of firm performance.
• Higher levels of investments leading to higher levels of human capital among the group of raw recruits relative to experienced employees is more rewarding in terms of firm performance levels.

[1] Frank & Bemanke (2007) define that human capital is ‘an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker's marginal product’.
V. METHODOLOGICAL ISSUES

To obtain monetary measures of human capital, a system used by Scholz, Stein and Muller is adapted and used. They identify four essential components and combine them in a systematic way to spell out their system for generating monetary measures of human capital. All the four components are expressed in monetary terms and combined by means of a simple formula to get the monetary measure of human capital for an organization.

The four basic components are:

a) Value base - Value base is the product of following two sub components for each employee summed over all employees of the firm:
   • The total number of employees converted to full time equivalent employees (FTE) is the quantity component
   • The price component is the market wage rate for each category of employees (W)

b) Value depreciation - Value depreciation arises out of two time processes that alter the value base of an employee. Each employee comes to the firm endowed with a stock of knowledge (K) but over time this gets depleted and becomes obsolete. At the same time the practical knowledge level of an experienced employee increases over time (t). These are combined and expressed as a function \( F(K,t) \) and converted into monetary terms giving value depreciation.

c) Value compensation - The third component is the compensation to knowledge depletion by way of personal development measures taken by the employees (PD). Cost of personal development gives the required monetary measure.

d) Value adjustment - Value adjustment is an adjustment made to the value base for differences in the motivation levels called motivational adjustment factor (MA). The MA factor depends on the individual employee's commitment, work atmosphere and her plans to stay in the firm or quit.

\[^{[2]}\] A human capital measurement system is relevant for human capital management if it shows that intensified human resource management activities lead to increased human capital values and further more to increase corporate performance

\[^{[3]}\] The monetary value of the human capital is calculated according to the so called ‘Saarbrucken Formula’

\[
HC = \sum_{l>1} \left( [FTE_l \times \frac{W_l}{b_l} + PE_l] \times M_l \right)
\]

The next step is to combine these components. Using the simple formula:

HC = Value base - Value depreciation + Value compensation + Value adjustment. In order to compare HC value across firms or sectors all these measurements have to be standardized. Moreover this measure will be effective only when the set of underlying assumptions are valid. The author’s test for validity of these assumptions empirically for their sample of firms. It will be necessary to test their validity in the Indian context once again.

To obtain measures of the performance of the firms it will be necessary to select one or more appropriate measures from a very large set of such measure available in the literature. One is EBITDA meaning earnings before interest, tax, depreciation and amortization as a measure of cash flow. Another is return on investment of human capital

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HC\ ROI = \text{Revenue} - \left[ (\text{Operating Expenses} - (\text{Compensation cost + Benefit cost})) \right] \times (\text{Compensation cost + Benefit cost})
\]

Guided by a statistical expert the sample of firms will be selected from the population of firms operating in the two sectors IT and ITES. Then using both primary and secondary sources of information we obtain numerical data on all the variables viz., FTE, W, K, t, PD, and MA. Univariate analysis of these variables will be followed by appropriate bivariate and multivariate analytical measures such as correlation and regression models to throw light on the direction, strength and nature of the interrelations among these variables. With this data base and using suitable nonparametric and parametric testing procedures the two research hypotheses and other crucial assumptions of the model will be verified. Standard diagnostic checks to ensure suitability of the regression model will also be performed.

VI. CONCLUSION

Globalization has drastically altered the rules of the game. What then should be the response to such a challenge? A successful strategy is to emphasize the human side of the enterprise treating it as a crucial factor in winning and retaining a competitive edge in the global economy. So much so that a firm is forced to depend upon increasing the quantity and quality of human capital. Knowledge, learning, imagination and technical competence are the new raw materials the stock of which needs to be expanded rapidly and continuously to ensure prosperity.

REFERENCES
