



IJEAST

INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY



VOLUME : 2 ISSUE : 9 Print / Issue Publication Date: 25-Mar-2018



ISSN : 2455-2143



Indexed In



WWW.IJEAST.COM

editor@ijeast.com



QUANTITATIVE AND QUALITATIVE ANALYSIS OF ORGANIZATIONAL PERFORMANCE

Prof. Ramesh S. Naik

Assistant Professor

Dept. Of Mechanical Engineering

Basaveshwar Engineering

College (Autonomous)

Bagalkot- 587102

Dr. Geetanjali V. Patil

Professor

Dept. Of Mechanical Engineering

B.L.D.E.A's V.P Dr.P.G.

Halakatti College Of Engineering

& Technology

Bijapur

Dr. V. S. Puranik

Professor

Dept. Of Industrial & Production

Engineering

Basaveshwar Engineering

College (Autonomous)

Bagalkot - 587102

ABSTRACT

Purpose: A qualitative research and analysis has to be done in examining the implementation of the changing economy of Human Resource Management in the new economy. Important concepts involved and models related in this study are Human Resources Management (HRM), Knowledge Management (KM) and Intellectual Capital(IC). The study provides the model or the framework for the role of human resources management, Knowledge Management, Intellectual Capital and Human Capital. Another initiative concerns in the present study involves the development of the role of Human Resource Management in new economy by focusing on the integration of the Intellectual Capital, Human Capital and Knowledge Management in the strategies of the organization, analysis the field of Knowledge Management and Intellectual Capital with respect to Human Resource Management in the new economy. Qualitative and quantitative analysis of the key drivers of the new economy has to be identified and analyzed. Organizational performance is also analyzed.

Keywords— are Human Resources Management (HRM), Knowledge Management (KM) and Intellectual Capital(IC).

I. INTRODUCTION

In order to understand the organizational performance, the qualitative parameters are to be identified. As per [1] Bounds at all, 2005; Robbins, 2000, Common measures of the organizational performance are effectiveness and efficiency. according to [2]Mouzas (2006), each of these terms have their own distinct meaning. Most organizations assess their performance in terms of effectiveness. Their main focus is to achieve their mission, goals and vision. [3] At the same time, there is plethora of organizations, which value their performance in terms of their efficiency, which relates to the

optimal use of resources to achieve the desired output (Chavan, 2009).

II. LITERATURE REVIEW

[4]. Nunnally and Bernstein (1994), McIver and Carmines (1981), and Spector (1992) discuss the reasons for using multi-item measures instead of a single item for measuring psychological attributes. They identify the following: First, individual items have considerable random measurement error, i.e. are unreliable. Nunnally and Bernstein (1994) state, "Measurement error averages out when individual scores are summed to obtain a total score" (p. 67). Second, an individual item can only categorize people into a relatively small number of groups. An individual item cannot discriminate among fine degrees of an attribute. For example, with a dichotomously scored item one can only distinguish between two levels of the attribute, i.e. they lack precision. Third, individual items lack scope. McIver and Carmines (1981) say, "It is very unlikely that a single item can fully represent a complex theoretical concept or any specific attribute for that matter" (p. 15). They go on to say, The most fundamental problem with single item measures is not merely that they tend to be less valid, less accurate, and less reliable than their multi item equivalents. It is rather, that the social scientist rarely has sufficient information to estimate their measurement properties. Thus their degree of validity, accuracy, and reliability is often unknowable.(p. 15). [5] Blalock (1970) has observed, "With a single measure of each variable, one can remain blissfully unaware of the possibility of measurement [error], but in no sense will this make his inferences more valid" (p. 111). [6] Common measures of the organizational performance are effectiveness and efficiency (Bounds at all, 2005; Robbins, 2000). For managers, suppliers and investors these two terms might look synonymous, yet, [7] according to Mouzas (2006), each of these terms have their own distinct meaning. Most



organizations assess their performance in terms of effectiveness. Their main focus is to achieve their mission, goals and vision. At the same time, there is plethora of organizations, which value their performance in terms of their efficiency, which relates to the optimal use of resources to achieve the desired output (Chavan, 2009) [8]. [9]The question is, whether there is a difference if the organization is effective yet inefficient and vis-a-vis versa. Also, is it important for the entities to understand the disparity?

[10] According to 2013 -2014 Baldrige Performance Excellence Program, it is crucial for organizations to self-assess their performance, since it can help the organization to achieve the excellence in their operations. [11] Achieving high levels of organizational performance is a multidimensional process. Knowledge, associated with self-assessment is not enough to assure high performance of the organization. The challenge that most managers are facing in today's rapidly changing economy is to address right tools to evaluate their own performance against rival results (Villegas and Valldares, 2005). [12] According to American Management Association Global Study of Current Trends and Future Possibilities 2007-2017, a high performance organization maintains consistent strategies that closely bind with organization's philosophy and believes. Such organizations implement strong customer oriented policies (American Management Association, 2007). [13] Customer information is the main factor for developing new products Khademfar and Amiri (2013) suggest a model of high performance organization, which maintains five major approaches: Strategic, Customer, Leadership, Processes and Structure and, Values and Beliefs. Strategic approach takes the organization to a higher plane of maturity with a clear vision where the entity is going. Customer approach strives for client loyalty, whether Leadership approach is associated with management knowledge to transfer the strategy to employee level, which will have a direct impact on their behavior and believes. The fourth block is associated with organization's processes and structure. High performance organization should strive for implementing innovative policies to support the strategy. The last component of the model is Value and Beliefs which translates into organizations ability to implement the strategy. All pieces are linked to each other, since change to one provides changes in the others.

IV. Design/methodology/approach: Research methodology consists of research design, sample design, sources of data, selection of data, various designs and techniques, activities, methods and procedure used for analyzing the data. Vital objective of the present research is to study the extent of implementation of defined HR method, procedure. The objective of research design is to determine which activities, methods, techniques and procedure is acceptable and preferred in evaluating the Human Resource Management.

V. Findings: Organizational performance was analyzed by using SPSS tool. The two indicators used are efficiency and effectiveness. The various items used for organizational

performance were analyzed and the quantitative values obtained are acceptable. All the items which are considered for regression analysis are good correlated.

III. METHODOLOGY FOR THE ANALYSIS OF ORGANIZATIONAL ASSESSMENT:

Regression is carried out based on the Likerts five point scale for each and every activity technique, for the assessment of HRM and for the economical development of organization with respect to human capital and knowledge management For carrying out test the statistical tool is used and following are the steps involved in carrying out the analysis. [14] Reliability analysis allows to study the properties of measurement scales and the items that compose the scales. The Reliability Analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale. Intra class correlation coefficients can be used to compute inter-rater reliability estimates.

Using reliability analysis, we can determine the extent to which the items in your questionnaire are related to each other, you can get an overall index of the repeatability or internal consistency of the scale as a whole, and you can identify problem items that should be excluded from the scale.

Statistics. Descriptives for each variable and for the scale, summary statistics across items, inter-item correlations and covariances, reliability estimates, ANOVA table, intra class correlation coefficients, Hotelling's T₂, and Tukey's test of additivity.

Models. The following models of reliability are available:

- Alpha (Cronbach). This model is

Cronbach's alpha (Cronbach, 1951) is a measure of reliability. More specifically, alpha is a lower bound for the true reliability of the survey. Mathematically, reliability is defined as the proportion of the variability in the responses to the survey that is the result of differences in the respondents. That is, answers to a reliable survey will differ because respondents have different opinions, not because the survey is confusing or has multiple interpretations. The computation of Cronbach's alpha is based on the number of items on the survey (k) and the ratio of the average inter-item covariance to the average item variance. $\alpha = \frac{k(\text{cov}/\text{var})}{1+(k-1)(\text{cov}/\text{var})}$

Under the assumption that the item variances are all equal, this ratio simplifies to the average inter-item correlation, and the result is known as the Standardized item alpha (or Spearman-Brown stepped-up reliability coefficient).

$$\alpha = \frac{kr}{1+(k-1)r}$$



The value of Cronbach's alpha is reported in the Reliability Statistics table. Notice that the Standardized item alpha is computed only if inter-item statistics are specified. And remember, the coefficient of 0.898 reported for these items is an estimate of the true alpha, which in turn is a lower bound for the true reliability. For comparison, several other reliability measures are available.

The item-analysis output from SPSS for the multi-item scale of various activities of HRM, organizational performance and knowledge management. A description of the sections and related terms are as follows:

1. Statistics for Scale—These are summary statistics for the items comprising the scale.
2. Item means—These are summary statistics for the individual item means.
3. Item Variances—These are summary statistics for the individual item variances.
4. Inter-Item Correlations—This is descriptive information about the correlation of each item with the sum of all remaining items. In the example, there are 10 correlations computed: the correlation between the first item and the sum of the other seven items, the correlation between the second item and the sum of the other ten items, and so forth. The mean of the inter-item correlations (.3824) is the r in the $r = rk / [1 + (k - 1)r]$ formula where k is the number of items considered.
5. Item-total Statistics—This is the section where one needs to direct primary attention. The items in this section are as follows:
 - a. Scale Mean if Item Deleted—Excluding the individual item listed, all other scale items are summed for all individuals and the mean of the summated items is given
 - b. Scale Variance if Item Deleted—Excluding the individual item listed, all other scale items are summed for all individuals and the variance of the unsummed items is given.
 - c. Corrected Item-Total Correlation—This is the correlation of the item designated with the summated score for all other items. A rule-of-thumb is that these values should be at least.
 - d. Squared Multiple Correlation—This is the predicted Multiple Correlation Coefficient squared obtained by regressing the identified individual item on all the remaining items.
 - e. Alpha if Item Deleted—This is probably the most important column in the table. This represents the scale's Cronbach's alpha reliability coefficient for internal consistency if the individual item is removed from the scale. In Table 2, the scale's Cronbach's alpha would be .7988 if item 2 were removed for the scale. This value is then compared to the Alpha coefficient value at the bottom of the table to see if one wants to delete the item. As one might have noted, the present scale has only 8 items where the original scale had 10 items. Using the above information, removing items 1 and 2 resulted in an increase in Cronbach's alpha from .7708 to .8240.
 - f. Alpha—The Cronbach's alpha coefficient of internal consistency. This is the most

frequently used Cronbach's alpha coefficient. g. Standardized Item Alpha—The Cronbach's alpha coefficient of internal consistency when all scale items have been standardized. This coefficient is used only when the individual scale items are not scaled the same. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. Based upon the formula $r = rk / [1 + (k - 1)r]$ where k is the number of items considered and r is the mean of the inter-item correlations the size of alpha is determined by both the number of items in the scale and the mean inter-item correlations. George and Mallery (2003) provide the following rules of thumb: " $r > .9$ – Excellent, $r > .8$ – Good, $r > .7$ – Acceptable, $r > .6$ – Questionable, $r > .5$ – Poor, and $r < .5$ – Unacceptable" (p. 231). While increasing the value of alpha is partially dependent upon the number of items in the scale, it should be noted that this has diminishing returns. It should also be noted that an alpha of .8 is probably a reasonable goal. It should also be noted that while a high value for Cronbach's alpha indicates good internal consistency of the items in the scale, it does not mean that the scale is one-dimensional. Total about 33 items were taken for the analysis of organizational performance some of them which are mentioned are as follows Organization Performance, Measuring Efficiency, Business efficiency, Performance of input out ratio, identification of efficient process to convert input output,

The Hypothesis defined for organizational performance

Hypothesis: organizational performance excellence has to be checked, Organizational performance excellence can be checked by two indicator efficiency and Effectiveness. Effectiveness performance indications measures company's progress towards goals achievement, mission fulfillment and overall performance of organization. Efficiency is another performance indicator which measure organization relations pertaining to input, output, successful conversion of input to out put.

Reliability Statistics for fifteenth activity i.e organizational performance Cronbach's Alpha =0.533, Cronbach's Alpha Based On Standardized Items = 0.431, N of Items = 33. As we see the values in Item-Total Statistics chart, Cronbach's Alpha for if each item is Deleted from total 33 items, the average Cronbach's Alpha of the remaining 33 items does not have large variation. Cronbach's Alpha is near to 0.533 and 0.431 which is good and acceptable. As per Reliability Statistics, Item Statistics (Mean=4, SD< 1), Inter-Item Correlation Matrix (Correlation = < 1 and + correlated between inter item), Summary Item Statistics, Item-Total Statistics and Scale Statistics. All the 33 items which are considered for regression analysis are good correlated. Some of the items are excluded i.e Organization Performance, Performance of input out ratio, Management and business



system building, motivation of staff and all other items are accepted.

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.697	4.400	4.800	.400	1.091	.220	33
Inter-Item Correlations	.022	-.612	1.000	1.612	-1.633	-.267	33

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MeasuringEfficiency	150.2000	19.7000	.151	-	.524
BusinessEfficiency	150.2000	19.2000	.281	-	.511
Identificationofefficientprocessesforinputoutput	150.2000	19.2000	.281	-	.511
efficientconversionofinputoutput	150.2000	18.7000	.414	-	.497
usingoptionalprocessimplementation	150.6000	17.3000	.323	-	.489
Tomaintainoutputofproductivity/maintainancysystem	150.6000	16.3000	.471	-	.486
Supplimentservices	150.6000	17.8000	.252	-	.505
reducedyieldfromstartuptostableproduction	150.4000	22.3000	-.405	-	.588
processdefects	150.4000	19.8000	.082	-	.532
reducedspeed	150.4000	19.7000	.151	-	.524
idingandminorstoppages	150.4000	19.8000	.082	-	.532
setupandadjustment	150.4000	24.2000	-.896	-	.619
Organizationefficiency	150.2000	17.8000	.519	-	.476
organizationstructurecult	150.2000	18.7000	.414	-	.497
uncommunity	150.2000	19.2000	.281	-	.511
productivity/profitabilityqual	150.4000	17.8000	.519	-	.476
measuringorganisationefficiency	150.2000	19.2000	.281	-	.511
Organizationstrategy	150.4000	19.8000	.082	-	.532
corporatestructure/design	150.2000	19.2000	.281	-	.511
developmentofcompandem	150.2000	21.7000	-.336	-	.571
pytask	150.2000	21.7000	-.336	-	.571
EFFECTIVENESS	150.2000	21.7000	-.336	-	.571
effectivenessofinputoutput	150.2000	19.2000	.281	-	.511
outcomeImpact	150.2000	19.2000	.281	-	.511
impactionsaleandcreativ	150.2000	19.2000	.281	-	.511
advertisingtoconduct	150.2000	19.2000	.281	-	.511
effectoforgancheck	150.2000	19.7000	.151	-	.524
dyTE	150.4000	19.8000	.082	-	.532
productivity	150.4000	19.8000	.082	-	.532
quality	150.2000	21.7000	-.336	-	.571
deliverable	150.6000	17.3000	.323	-	.489
safety/social/responsible	150.2000	21.7000	-.336	-	.571
TOTALMAINTAINENNCES	150.2000	24.2000	-.896	-	.619
SYSTEM	150.2000	18.7000	.414	-	.497
maintainance	150.2000	18.7000	.414	-	.497
preventionsystem	150.4000	17.8000	.519	-	.476

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
maintainability/improvement	150.4000	17.8000	.519	-	.476
TOTALPARTICIPATIONOF EMPLOYEE	150.2000	19.2000	.281	-	.511

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
1.5500E2	20.500	4.52769	33

```
SPSS DATA LIST FILE=C:\Users\user\Desktop\orginal\orginal.sav.
BEGIN LIST.
(ORGANIZATION)PERFORMANCE #measuringEfficiency BusinessEfficiency Identificationofefficientprocessesforinputoutput
efficientconversionofinputoutput usingoptionalprocessimplementation Tomaintainoutputofproductivity/maintainancysystem
Supplimentservices reducedyieldfromstartuptostableproduction processdefects reducedspeed idingandminorstoppages
Organizationefficiency organizationstructurecult uncommunity productivity/profitabilityqual
measuringorganisationefficiency Organizationstrategy corporatestructure/design developmentofcompandem
pytask
EFFECTIVENESS
effectivenessofinputoutput outcomeImpact
impactionsaleandcreativ
advertisingtoconduct
effectoforgancheck
dyTE
productivity
quality
deliverable
safety/social/responsible
TOTALMAINTAINENNCES
SYSTEM
maintainance
preventionsystem
END LIST.
```

Reliability

Warnings

Each of the following component variables has zero variance and is removed from the scale: OrganizationPerformance, Performanceofinputoutratio, Managementandbusinesssystembuilding, motivationofstaff
 The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	5	100.0
	Excluded ^a	0	0
	Total	5	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.533	.431	33

IV. CONCLUSION

Reliability Statistics for fifteenth activity i.e organisational performance Cronbach's Alpha =0.533, Cronbach's Alpha Based On Standardized Items = 0 .431, N of Items = 33. As we see the values in Item-Total Statistics chart, Cronbach's Alpha for if each item is Deleted from total 33 items, the average Cronbach's Alpha of the remaining 33 items does not have large variation. Cronbach's Alpha is near to 0.533 and 0 .431 which is good and acceptable. As per Reliability Statistics, Item Statistics (Mean=4 ,SD< 1), Inter-Item Correlation Matrix(Correlation = < 1 and + correlated between inter item), Summary Item Statistics, Item-Total Statistics and Scale Statistics. All the 33 items which are considered for regression analysis are good correlated. Some of the items are excluded i.e Organization Performance, Performance of input out ratio, Management and business system building, motivation of staff and all other items are accepted.

V. REFERENCES

[1]. Robbins S. P.,(2000) Managing today. Prentice Hall, 2000. 651 p. ISBN 0-13-011672-6.
 [2] Mouzas S. (2006). Efficiency versus effectiveness in business networks. Journal of Business Research. Volume 59, Issues 10–11, p.p 1124–113
<http://dx.doi.org/10.1016/j.jbusres.2006.09.018>
 [3] Chavan M., (2009) the balanced scorecard: a new challenge// Journal of Management Development, vol. 28, issue 5, p. 393-406. www.emeraldinsight.com/0262-1711.htm
 [žiurėta 2011-02-24]



- [4]. Joseph A. Glead ,Rosemary R. Gliem “Calculating, Interpreting, and Reporting Cronbach’s Alpha Reliability Coefficient for Likert-Type Scales “2003 Midwest Research to Practice Conference in Adult, Continuing, and Community Education.
- [5] Blalock, H. M., Jr. (1970). Estimating measurement error using multiple indicators and several points in time. *American Sociological Review*, 35(1), 101-111.
- [6] Bounds G.M., (1995). *Management : a total quality perspective* / G. M. Bounds, G.H. Dobbins, O. S. Fowler. Cincinnati, 1995. 760 p. ISBN 0-538-84344-6.
- [7] . Mouzas S. (2006). Efficiency versus effectiveness in business networks. *Journal of Business Research*. Volume 59, Issues 10–11, p.p 1124–113
<http://dx.doi.org/10.1016/j.jbusres.2006.09.018>
- [8] . Chavan M.,(2009) The balanced scorecard: a new challenge// *Journal of Management Development*, vol. 28, issue 5, p. 393-406. www.emeraldinsight.com/0262-1711.htm
[žiūrėta 2011-02-24]
- [9] Joseph A. Gliem ,Rosemary R. Gliem “Calculating, Interpreting, and Reporting Cronbach’s Alpha Reliability Coefficient for Likert-Type Scales “2003 Midwest Research to Practice Conference in Adult, Continuing, and Community Education.
- [10] <http://www.nist.gov/baldrige/publications/criteria.cfm>
- [11] Villegas E. and Valladares E.V.,(2005). Flores J.L.D., Analysis of financial ratios of an intensive dairy enterprise: a case study in the Mexican high plateau // *Veterinaria México*; vol. 36, Issue 1, p. 17,
<http://web.ebscohost.com/ehost/detail?hid=21&sid=de6c31e4-95fe-42fa-bfb8-747114ba5518%40sessionmgr4&vid=4&bdata=JnNpdGU9ZWhvc3QtG12ZQ%3d%3d#db=a9h&AN=16305379>
- [12] American Management Association Global Study of Current Trends and Future Possibilities 2007-2017
<http://www.opm.gov/WIKI/uploads/docs/Wiki/OPM/training/i4cp-coaching.pdf>
- [13] Khademfar M. and Amiri S. A., (2013). The Relationship between Ethical Leadership and Organizational Performance (Small Review on Malaysian Studies. *International Journal of Business and Social Science*. Vol. 4 No. 1;. Available http://www.ijbssnet.com/journals/Vol_4_No_1_January_2013/13.pdf
- [14] Joseph A. Gliem Rosemary R. Gliem “Calculating, Interpreting, and Reporting Cronbach’s Alpha Reliability Coefficient for Likert-Type Scales, 2003 Midwest Research to Practice Conference in Adult, Continuing, and Community Education

IJEAST

INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY

ABOUT IJEAST

International Journal of Engineering Applied Science and Technology (IJEAST) is a peer-reviewed, open access journal that publishes high-quality research papers in the field of Engineering, Applied Science and Technology.

IJEAST aims to provide a platform for researchers, academicians, and professionals to share their innovative ideas, research findings, and practical experiences with the global scientific community.

FOCUS AREAS

- Engineering
- Applied Science
- Technology
- Innovation & Development
- Interdisciplinary Studies



PEER REVIEWED

All submissions are rigorously peer reviewed to ensure quality.



OPEN ACCESS

Free and unrestricted access to research for all.



GLOBAL REACH

Connecting researchers and professionals worldwide.



TIMELY PUBLICATION

We ensure a swift and efficient publication process.



For more information, visit our website

www.ijeast.com



INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY

✉ editor@ijeast.com

🌐 www.ijeast.com

📍 India



2455-2143