

Impact of Moderating Role of e-Administration on Training, Performance Appraisal and Organizational Performance

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Abstract—In this age of information technology, organizations are revisiting their approach in great deal. E-administration is the most popular area to proceed with. Organizations in order to excel over their competitors are spending a substantial chunk of its resources on E-Administration as it is the most effective, transparent and efficient way to achieve their short term as well as long term organizational goals. E-administration being a tool of ICT plays a significant role towards effective management of HR practices resulting into optimal performance of an organization. The present research was carried out to analyze the impact of moderating role of e-administration in the relationships training and performance appraisal aligned with perceived organizational performance. The study is based on RBV and AMO theories, advocating that use of latest technology in execution of human resource (HR) functions enables an organization to achieve and sustain competitive advantage which leads to optimal firm performance.

Keywords—Human resource management, HR function, e-administration, performance appraisal, training, organizational performance.

I. INTRODUCTION

THE primary concern of today's organizations is to develop and keep the competitiveness on high priority. Adoption of innovative measures in performing business functions help organizations to achieve and sustain competitive advantage in the industry. Being core business function, the strengthening of human capital with advanced human resource management (HRM) techniques can play vital role in establishing the competitive advantage.

Aggarwal & Kapoor [1] and Eris & Ozer [15] have demonstrated that e-administration of HR functions have proven very effective in yielding higher organizational performance in modern business world. Convincingly, the firms aiming to achieve and sustain competitive advantage through developing competent human capital are adopting innovative technologies.

Pauwe & Boselie [39] asserted that Resource Based View (RBV) and Ability Motivation Opportunity (AMO) theories

can help organizations to achieve and sustain competitive advantage. The proponents of RBV theory advocate that organizations can improve overall performance by strengthening internal resources whereas, AMO theory asserts the motivated employees perform better. These theories emphasize that professional HR function ensure the effective functioning of organizations by formulating policies, philosophies to attract, motivate and retain the talented employees [47]. Such practices also play an influential role to exhibit favorable attitudes and behaviors required to implement and support the competitive strategy of an organization resulting in improved performance [22].

The determination of organizational performance factors remained complex phenomena. Hansen and Wernerfelt [20] identified two major models to ascertain factors as determinants of firm performance; the economic factors model and the organizational factors model. The economic model covers factors of competitiveness in industry and the quality of organizations' resources. On the other hand, organizational model referred the factors of organizational culture, climate, innovation, leadership and information management [11]. Though, both the models were supported by researchers but Trovik and McGivern [49] indicated that organizational factors contribute more in performance than economic factors.

Eris and Ozer [15] and Ravichandran and Lertwongsatein [41] demonstrated that information system has potential to improve firm's performance when its capabilities are channeled to develop distinctive firm competencies. Companies aiming to achieve and sustain competitive advantage are continually adopting ERP systems to gain benefit of information based decision making. Lengnick-Hall and Moritz [31] established E-administration augments HR functions in organizational effectiveness by creating new avenues like knowledge management, social and intellectual capital. Aggarwal and Kapoor [1] also asserted the importance and strategic role of E-administration of HR functions towards business competitiveness.

Various researchers have analyzed the indirect and direct connections between HR functions and organizational performance [7], [25], [27], [47]. According to Lengnick-Hall & Moritz [31], still the literature lacks the knowledge regarding moderating role of E-administration in the relations between HR functions and organizational performance. The current study, following the RBV and AMO theories, focused on two constructs of training & performance appraisal and

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organizational performance, viz-a-viz examining the role of e-administration of HR functions as moderating concept.

II. ORGANIZATIONAL PERFORMANCE

Daft [12] had tried to define the organizational performance as it is the ability to achieve organizational goals by managing the resources in an effective and efficient ways. It can be classified into two forms: Financial measures and non-financial measures. Financial measures follow the economic model relating to sales, market shares and profit, whereas, non-financial metric adopts the organizational model which refers to commitment, recognition, retention, work quality, behavioural aspects etc. According to Perotti and Javier [40], firm performance relates to efficiency, effectiveness and economy of an activity or program. Ricardo and Wade [42] demonstrated that the core competency of an organization is the achieving and sustaining competitive advantage which helps firm to improve overall performance.

Hoskisson, Eden, Lau and Wright [23] highlighted various issues in measuring the performance with financial data. The most general problems are dearth of market based and lucidity in financial coverage and fabricated financial market data, insufficient regulatory methods about financial exposure.

Considering the subjective metric, the strategic managers have become able to measure the performance in broader way multifactors perspective. Despite some constraints in selecting non-financial approach but the merits overshadow these. Khandawalla [28] pointed out the organizational factors for measuring firm performance such as product or service quality; productivity of HR; market image; growth level; revenue earning and goodwill. Persuasively, subjective measures are adopted to gauge the firm performance.

III. HR FUNCTIONS

Human capital is recognized as sustainable core asset of competitive advantage [13]. To cope with the today's knowledge economy, the organizations develop and nurture HR through honing skills, abilities, knowledge & interpersonal associations to achieve and sustain core competency.

Minbaeva [34] defined HR functions/practices as the formal policies and procedures adopted by an organization to manage human resources and to develop organization specific core competency, deal with innovation and keep up complex social setup to sustain competitive advantage. The previous literature revealed four approaches to build up HRM practices: Contingency approach [44]; strategic approach [14]; configuration approach and universal approach [24]. Universal approach has been found the most plausible and globally accepted mechanism. Based on this, the training and performance appraisal HR functions are chosen in the current study.

Training is one of the major functions of HRM portraying a pivotal role in developing and retaining human capital to achieve competitive advantage. The training increases the ability and skills of employees to perform their jobs in an effective and efficient manner. Gordon [17, p.235] defines

“training is a type of activity which is planned, systematic and it results into enhanced level of skill, knowledge and competency that are necessary to perform work effectively.” Effective training techniques help the employees to equip with the latest skills and knowledge which would enable them to perform better and bring innovation in business processes [29]. The other benefits associated with training of employees include increase in morale, confidence and motivation; lowers cost of production & turnover and improvement in work quality.

According to Tharenou, Alan and Celia [48] and Aguinis and Kraiger [2], the main objectives of training is to enhance the overall organizational productivity, profitability and revenues. In a study of managers from Cambodia and Taiwan, Sang [43] validated the positive impact of training on operational performance of organization. Al-Damoe et al. [3] claimed that training can uplift both the financial factors (profit, market share & sale) and non-financial factors (quality of service, productivity, efficiency, and commitment & employees' satisfaction). These patterns can help to posit that:

- *H₁: Exposure to training would enhance the organizational performance.*

In the current study, the other focused factor in HR function is performance appraisal. Grubb [18] described performance appraisal as a procedure to evaluate how individuals are performing and how they can improve their performance and contribute to overall organizational performance. Another author Chang [10] defined the performance evaluation as “a systematic process of measuring a person's performance towards the assigned task.”

Nickels et. al. [36] guided important steps to evaluate performance of employees. These steps comprise of establishing performance standards; communicating those standards; evaluating performance; discussing results with employees; taking corrective actions; and using the results to finalize decisions. According to Atiomo [4], performance appraisal is one of the ultimate objectives to improving performance of employees. Fair and unbiased performance appraisal develops trust and motivates employees to perform their job activities with commitment and satisfaction [8]. Katou and Bedhwar [26] and Nadeem et. al. [35] found training and performance appraisal having positive relationship with firms' performance. Drawing upon the preceding discussion it is hypothesized:

- *H₂: Perception of fair performance appraisals will positively affect the organizational performance.*

In today's business organizations, performance appraisals of employees are being managed through proper E-administration module of performance management system (PMS). These purposely built systems manage and align the organizational resources in order to achieve the highest possible performance.

IV. E-ADMINISTRATION

Progression in IT technologies has brought novel techniques of managing the business functions in the competitive business culture. According to Nasurdin [47], innovative IT

techniques in business functions has influenced the overall performance of firms and it has also added values to the business world. It has proved as strategic weapon. Organizations are trying best to adopt such techniques to improve competitive positioning. E-administration has created value in firms through organizing the complex business functions in an efficient way [50]. Likewise, the HR functions based on such E-admin systems are yielding improved performance.

Gill and Johnson [16] elaborated E-administration as it is a technique that utilizes the IT for effectively managing the human capital. E-administration is a socio-technical integrated tool which pertains to people, procedures and policies to organize the human resources in an organization [21]. E-administration helps organizations to decrease operational expenditures resulting into the improvement of HR functions. Snell et al. [46] highlighted that using IT technologies in HR functions would enhance output, lessen the admin costs and cut down the action times. It is, therefore, posited that:

- *H₃: The implementation of E-administration will help organizations to attain better organizational performance.*

Hendrickson [21] elaborated that in olden times, HR functions were managed by conventional techniques as the required information was limited up to very few particulars of employees. The strategic managers have now realized the importance of innovative solutions for managing HR functions

being very helpful in providing timely information for decision making.

It is posited that E-administration of HR functions strengthens the cross functional integration and optimum utilization of resources facilitating organizations to sustain core competency in market and consequently it testifies the RBV theory. Aggarwal and Kapoor [1] demonstrated that the E-administration of HR functions facilitates the actively provision of valuable information regarding training and performance appraisal. Besides this, PMS a module of E-administration helps implement fair performance appraisals which resultantly motivate the employees to perform better. Chang and Chen [9] conducted study in Taiwanese high tech firms and concluded that HR functions including training & development and performance appraisal have significant influence on productivity of organization. Obisi [37] found that better performance be attained when employees are appraised and evaluated fairly. Arguably, the inability of organization to install effective performance appraisal system may hinder from achieving competitive advantage. Establishing the role of E-administration in selected HR functions and outcome, anticipation is drawn:

- *H₄: The deployment of E-administration will play moderating role, so that the effect of training and performance appraisal on organizational performance will enhance.*

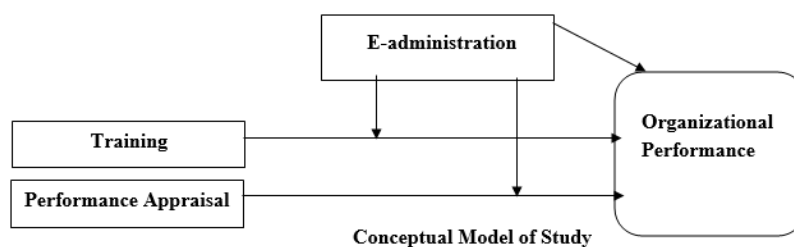


Fig. 1 Conceptual Model of Study

TABLE I
 PROFILES OF SPECIFIC CONTRIBUTING INDUSTRY (N=220)

Sector	Freq	% age	Cumulative. % age
Cash & Carry	08	04	62
Hotel	06	03	22
Electronics	11	05	39
Pharmaceutical	06	03	79
Health	05	02	24
FMCG	47	21	100
Telecom	22	10	49
Banking	43	19	19
Education	09	04	76
Engineering	21	10	34
Power	20	09	58
Petroleum	22	10	72
Total	220	100	-

V. METHODOLOGY

Population of the current study comprised of employees working in companies where E-administration modules were in place. A total of 25 companies; 11 (44%) from service and 14 (56%) from manufacturing industry were identified for the study. Based on probability/simple random design, 245 employees were sampled for the study. A total of 220 employees responded the structured questionnaire, with response rate of 81% (Table I).

Table II shows the profile of participating industries depicting FMCG sector on the top (21%), whereas, health, pharmaceutical and hotel remained on lower side representations.

A. Measurement and Instrument

The instruments used to measure the variables were adopted from the scales authenticated and used in previous studies. The items related to training were taken from [45] while the performance appraisal's items were used from [33]. These

measures were rated on the five-point Likert scale, ranging from 1 as strongly disagree to 5 as strongly agree. The Cronbach's coefficients for training and performance appraisal scales were 0.89 and 0.87 respectively.

The organizational performance construct was measured with 13 items from [51] and [28] with feedback drawn as 1 very low to 5 as very high. The Cronbach's alpha for the scale in current study remained 0.88. Six items related to the variable of E-administration were adopted from [5] with Cronbach's alpha value 0.88.

The values of Cronbach's alpha in Table II had established the reliability of the instrument. Likewise, Inter-Correlation Matrix as shown in Table II also revealed the theoretically based construct validity of instruments.

TABLE II
VALIDITY ANALYSIS INTER-CORRELATION MATRIX (N=220)

Variables	I	II	III	IV
I Training	0.89			
II Performance Appraisal	.60**	0.87		
III Org. Performance	.55**	.57**	0.88	
IV E-Administration	.50**	.57**	.58**	0.88

** $p < .01$; Correlation is significant at 0.01 level (two tailed), Boldface show the Cronbach's Values

The correlation value between training, performance appraisal and organizational performance is significantly on positive side as ($r = .60$; $p < .01$) and ($r = .56$; $p < .01$). Likewise, the correlations between E-administration and organizational performance is also positive ($r = .58$; $p < .01$).

VI. RESULTS AND ANALYSIS

All hypotheses were tested based on the developed theories. The collected data were analyzed through multiple and moderated regressions, correlations and relevant descriptive statistics using SPSS version 21.

Table III identifies the average scores with Min and Max statistics collected from different respondents. The S.D and skewness values have been assessed in satisfactory range

TABLE III
DESCRIPTIVE STATISTICS OF VARIABLES (N=220)

Variables	Minimum	Maximum	Avg	SD	Skewness
Training	4.00	20.00	12.95	4.28	-.51
Performance Appraisal	15.00	55.00	39.47	7.64	-.53
Organizational Performance	14.00	54.00	39.72	7.47	-.73
E-administration	6.00	30.00	22.08	4.51	-.76

Table IV depicts the results of regression analysis showing cumulative impact of training, performance appraisal and E-administration variables on organizational performance.

The analysis revealed $R^2 = 0.45$ with ($p < .05$, $F = 60.94$) showing 45% variation in firm performance by performance appraisal, training and E-administration. The results further revealed that all of the factors contributed significantly with E-admin contributing highest scores ($\beta = .32$).

TABLE IV
REGRESSION ANALYSIS FOR INDEPENDENT VARIABLES WITH ORGANIZATIONAL PERFORMANCE (N=220)

	B	SE	β	T
Constant	13.22	2.17	-	6.08
Training	.44	.11	.25	4.00*
Performance Appraisal	.23	.07	.24	3.45*
E-administration	.53	.10	.32	5.11*
$R^2 = 0.45$				
Adjusted $R^2 = 0.46$				
$F = 60.94^*$; $df: 3, 216$				

* $p < .05$

TABLE V
E-ADMINISTRATION MODERATION FOR TRAINING AND ORGANIZATIONAL PERFORMANCE (N=220)

Model	R^2	ΔR^2	F	d.f	Significance
1	.31	.30	95.57	1,218	0.00
2	.43	.43	48.52	1,217	0.00

Moderating regression analysis of E-administration in relationships between training & performance appraisal and organizational performance is shown in Tables V and VI. The results showed change in R^2 ($F = 48.52$, $p < .01$) explaining an additional variation of 13% in organizational performance because of the moderating impact. Likewise, Table VI showed the value of $\beta = 0.55$ with ($t = 9.78$, $p < .01$), whereas in model 2 the score of $\beta = .41$ ($t = 6.97$, $p < .001$) demonstrated moderating effect.

TABLE VI
REGRESSION EQUATION COEFFICIENTS FOR EMPLOYEES TRAINING AND OP (N=220)

Model	B	SE	β	T
1 Constant	27.26	1.34	-	20.37
Training	.96	.098	.55	9.78*
2 Constant	31.07	1.33	-	23.36
Training	.63	.10	.36	6.20
Training* E-administration	.25	.035	.41	6.97*

* $p < .05$

TABLE VII
E-ADMIN MODERATION FOR PERFORMANCE APPRAISAL AND ORGANIZATIONAL PERFORMANCE (N=220)

Model	R^2	ΔR^2	F	df	Significance
1	.323	.320	103.87	1,218	0.00
2	.421	.415	36.67	1,217	0.00

TABLE VIII
REGRESSION EQUATION COEFFICIENTS FOR PERFORMANCE APPRAISAL AND OP (N=220)

Model	B	SE	β	T
1 Constant	17.82	2.19	-	8.15
Performance appraisal	.56	.05	.57	10.19*
2 Constant	25.62	2.40	-	10.67
Performance appraisal	.35	.06	.36	5.73
Perf. appraisal* E-administration	.07	.01	.38	6.06

* $p < .05$

In Table VII, the change in R^2 ($\Delta R^2 = 0.9$) through ($p < 0.001$; $F = 36.67$) showed an additional variation of 9% in dependent variable because of the moderating role of E-administration in

performance appraisal and organizational performance relation.

In Table VIII performance appraisal in model 1 is ($\beta = 0.57$, $p < .001$), whereby moderating impact is visible in model-2.

VII. DISCUSSION

HR is an inimitable and imperative source which makes possible for organizations to achieve and sustain competitive advantage in the industry. Gupta and Singhal [19] emphasized that employee not the commodities are the precious resources of an organization. The employees introduce innovative and novel ideas which increase the firm performance.

First and second hypotheses proposed that effective training opportunities for employees and fair appraisal of job performance would increase the overall organizational performance. The hypotheses have been confirmed by Pearson Correlation (Table II) and Regression tests (Table IV); indicating significant positive relations between training and organizational performance. These hypotheses verified in line with previous studies [1], [47].

Effective training measures improve the skills, knowledge and abilities of employees that enhance their productivity. Training of employees also helps to improve job quality through reduced errors. Learning about new technologies brings innovation as well as new ideas in existing procedures and practices resulting in novel performance [38]. Li et al. [32] claimed that training programs of a technical firm in China were positively related to technological innovation and performance. Benefits derived from employees' training outweigh the cost. The findings also in line with the RBV and AMO theories to improve the performance.

When the performance is appraised fairly through PMS, the employees feel satisfied. In these systems, performance is linked to SMART goals set annually, biannually or quarterly, with mutual consensus of workers and supervisors. According to [30], systematic monitoring and feedback regarding job performance improves the productivity of employees. The appraisals should be free from errors like leniency, strictness, unbiased and halo effect. Thus, the employees would focus on tasks assigned to them rather than thinking about their undercover annual confidential reports (ACRs).

H_3 explained that the effective execution of E-admin would positively affect the organizational performance. Inter-correlation matrix presented positive correlation between E-administration and organizational performance ($r = 0.58$, $p = 0.03$). Regression analysis (Table IV) also supported to verify the findings. Beckers and Bsat [6] stated that E-administration provides immediate valuable information to strategic managers for decision making. This is the age of information and successful organizations maintain bank of competitive market information through E-administration, in turn leading to improved knowledge management. The results rationalize the importance of training and fair appraisal of job towards enhancement of firm's performance. The organizations are encouraged to focus on effective training and development measures to meet the futuristic

organizational goals. The employees feel intrinsic satisfaction when their performance is assessed in an equitable manner and they focus completely on their assignments. They try with dedication to bring excellence at work.

Fourth hypothesis posited that providing effective training to employees and proper performance appraisal while using IT technologies would enhance the overall performance of an organization. Regression analysis outcomes (Table V) demonstrated an additional variation of (13%) in firm performance ($F = 48.52$, $p < .01$), concluding the moderating role of E-administration. The E-administration plays an important role in training needs analysis, developing skills, knowledge and abilities (SKA). The availability of such data helps the strategists to better assign the tasks and allocate the resources. It is also useful for devising strategies regarding future development needs for incoming projects. Preparedness of employees with respect to new technologies helps the organizations to have competitive advantage over competitors.

Findings (Table VII) further showed an additional variation of 9% in organizational performance ($F = 36.67$, $p < .01$), again concluding that E-administration moderates the relation between performance appraisal and organizational performance. As, e-administration plays vital role in appraising the job performance of employees in transparent manner, it reduces the chances of bias and other errors like leniency or strictness. The PMS ensures the timely completion of assigned tasks which motivates the employees to finish the tasks well before time.

The study realizes the importance of e-administration towards its strategic role in improved organizational performance. Today, information technology is helping out the organizations to improve the efficiency of business processes. E-administration facilitates training need analysis (TNA), rationalization of training programs and facilitating organizations to effectively manage the human capital to achieve and sustaining competitive advantage. Moreover, HR professionals will be able to justify the heavy investment on e-administration in reference to long term benefits to the CEOs, board of directors, entrepreneurs and SMEs and other concerned quarters to assess the strategic importance of e-administration.

Despite some contributions to the existing literature and certain practical applications, the study encounters some limitations that may be addressed in future researches. *First*, the data collected is cross sectional and it does not allow causal inferences. In particular, the HR functions like training and performance appraisal may not have abrupt effects. Therefore, longitudinal study would be appropriate for future results establishment.

Second, in the current study, only the items related to DSS level and MIS are included in the research instrument to analyze the informational and strategic importance of e-administration. In future studies, transactional role of e-administration may also be considered for moderation analysis for robust results. *Third*, data were collected mostly from companies having less than 5000 employees where therein e-administration is somehow in place. However, it has been

observed that e-administration with full modules is deployed in larger firms, limiting its generalizability. The results would be stout in case study is conducted in giant multinational organizations.

Future research area may be expanded by including the financial performance for quantitative information rather than subjective data. Information would be more comprehensive by considering larger sample size related to multiple sectors. Future studies may focus on other personal and organizational factors and comparative studies (before and after) implementation of e-administration may help to achieve more specific results and comparing the efficiency of management for human capital. Furthermore, some other relevant moderators and mediators can be identified and studied.

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