

Relationship between dimensions of HRM (employee training, motivation and Process Control) technology Innovation and firm Performance: Empirical Evidence from Telecommunication and manufacturing industries of Lahore in Pakistan

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Abstract- Purpose: Human resource management (HRM) is seen as crucial for innovation and organization's performance in Pakistan. This study aims to carry out an empirical research to investigate the effects of main dimensions of HRM on technological innovation as well as firm's performance.

Methodology: Researcher used seven-point Likert scale in questionnaire. The research uses a sample of 250 high-tech firms surveyed in Pakistan, Lahore. 300 questionnaires were administered out of which 250 questionnaires received back.

Findings: This research finds that employee training, material, immaterial motivation and process control and outcome control have positive effects on technological innovation, It is also found that technological innovation is positively related with performance.

Research limitations: This study does not consider the different influence of every HRM dimension affecting different innovation types. This should be a future research topic. Practical implications: This study provides useful managerial implication for managers. First, Employee training is needed to develop employees' knowledge. Second process control should be emphasized more than outcome control in high-tech firms.

Significance: This study demonstrated that the HRM significantly contributed to technological innovation and firm performance. This study demonstrates that high-tech firms' HRM has an important influence on technological innovation, and lead to firm's superior performance.

Index Terms- Human resource management, Motivation, Innovation, Organizational performance, Pakistan.

I. INTRODUCTION

The connection amongst HRM and firm execution has become amazing thought from HRM investigators and development masters as of late. A perpetual research has exhibited the positive relationship amidst HRM and a given firm execution (Schuler and Jackson 1987). Look into has moreover been done on the connection between mechanical development and firm execution (Hill and Rothaermel 2003); (Tripsas and Gavetti 2000). In any case, a couple crevice (Liu, Xiao et al. 2006) in this exploration field remain. At first, few reviews analyzed the way in which the

relative components in human asset administration impact firm Innovation hypothesis holds that firm advancement can help firms seize openings in unverifiable circumstances, secure upper hands over adversaries, and essentially affect firms' long haul execution (Hitt, Hoskisson et al. 1997). Of course, couple of researchers on advancement can discover correctly where development originates from (Damanpour and Gopalakrishnan 1998).

1.2 Problem Statement

The connection amongst HRM and firm execution has gotten significant consideration from HRM analysts as of late. A few crevices have stayed in researcher field, for example, few reviews have looked into the route in which relative variables of HRM impacts firm execution in mechanical advancement. In history numerous innovative firms have been set up in Pakistan. These organizations must not be disregarded on the grounds that they assume a critical part in monetary and social advancement of the nation. Keeping in mind the end goal to address these noteworthy holes, this review would research connection between HRM rehearses, mechanical advancement and company's execution by utilizing theoretical structure.

1.3 Research Questions

- In what way workers preparing can improve their employee execution by utilizing the innovation development, the country like Pakistan?
- In Pakistan, is there a relationship between Innovation, HRM and extinction that can adequate and usable.
- In HRM is there any role of administrative management and innovation in the sector of organizational of Pakistan.

1.4 Objectives of the study

In an organization HRM is viewed as vital for advancement and firm execution. Innovation technology has turned into a key issue in connection to the solid rivalry between HRM and company's execution. The exploration means to complete an experimental research to examine the impacts of fundamental measurements Employee Training, Immaterial Motivation and Process Control of HRM on innovation technology and additionally authoritative execution.

So fundamental destinations of this exploration are as per the following.

- Examine the effect of preparing and inspiration and control the process on the association's execution.
- Have a look at the part of HRM performance in improvement of worker's
- Know the connection amongst HRM and innovation development and association's execution.
- Find the outcomes in significant way that can help the associations in forthcoming.

1.5 Significance of the study

This review exhibited that the Human Resource Management essentially added to innovation technology and organization execution. So it reviews exhibits that cutting edge organizations' Human Resource Management has a vital impact on innovation technology, and prompt company's unrivaled execution. Asset based hypothesis and development speculations have affirmed the significance of both Human Resource Management and innovation technology on a company's execution. This review, our commitments concentrate on the working of a reasonable system that illuminates the connection between Human Resource Management, innovation technology and firm execution, and we look at the impacts of cutting edge Company's Human Resource Management on innovative technology and firm execution. Laying-out on asset based hypothesis and development hypothesis, this review exhibits that a cutting edge company's Human Resource Management has an imperative impact on innovative technology, which prompts that association's unrivaled execution. Past giving a rich depiction of the connection between Human Resource Management, innovative technology and execution.

II. LITERATURE REVIEW

2.1 Human Resource Management

HRM characterize as a business' key destinations is to augment worker execution in administration which is capacity of Human Resource Management (Damanpour and Gopalakrishnan 1998). HR is basically connected with the organization of people inside the association, focusing on plans and on structures (Collings, Scullion et al. 2009). Human Resource offices and units in associations conventionally endeavor different activities, including agent favorable circumstances arrange, specialist enlistment, "preparing and advancement", execution examination, and fulfilling e.g., overseeing pay and advantage systems (Paauwe and Boon 2009).

2.2 Training

Preparing is an arranged exertion by an organization to encourage learning of occupation related abilities, information, aptitudes and practices by representative (Aubert, Barate et al. 2006). It includes procedure of changing representative conduct and states of mind to build the likelihood of objective achievement (Aubert, Barate et al. 2006). The worker can all the more quickly secure new information and further capabilities by training and create advancement (Aubert, Barate et al. 2006).

2.3 Motivation

The word motivation is the implementation or arrangement of presenting an objective that beginning stage of a person to achieve some achievement (Aubert, Barate et al. 2006). The concept of motivation has gotten from "motive", means a reason of acting, impulse or effect to proceed for fulfilling the need (Kamalian, Yaghoubi et al. 2010). The inspiration which is also known as motivation of the delegate has coordinate effect on technological advancement, through there are ,as it is not ignoring, various outcomes from particular researchers (Kamalian, Yaghoubi et al. 2010)(Baer, Oldham et al. 2003)

The central power through which individuals distribute push to make and perform innovative contemplations is motivation(Liu, Cao et al. 2006). Then again, working employees are quite recently convinced to go past their allocate out part and get incorporated into unconstrained and inventive activities if they have a strong recognizing evidence with the affiliation. Various leveled society expect an essential part in rousing creative direct, as it can make obligation among people from a relationship to the extent confiding being developed as a legitimate regard and enduring progression related benchmarks dominating within the association (Dulaimi and Hartmann 2006)

2.4 Innovational technology

By the performance that innovation technology is a method ran with high peril, it is essential to use fruitful controls to diminishing possibility and redesign capability. There are two types of important inward controls associated with an affiliation's mechanical improvement: result control and get ready control .Outcome control focuses on last performance and includes action criteria, for instance, level of benefit to appraise (Hitt, Hoskisson et al. 1996). Handle control includes subjective and on occasion instinctual criteria for appraisal and highlights the whole deal performance of organization (Bahl, Ritzman et al. 1987).

2.5 Training of employee and innovation technology

The training is consider an arranged exertion by an organization to encourage learning of occupation related capabilities, information, aptitudes and practices by worker (Kolisch and Hartmann 2006). It includes procedure of changing representative conduct and states of mind to build the likelihood of objective fulfillment (Antwi, Analoui et al. 2007). The worker can all the more quickly secure new learning and further create development and skills through training (Chi, Bassok et al. 1989)and(Sabella and Analoui 2015).

2.6 Motivation of employee and innovation technology

The motivation is an execution or methodology of displaying an aim that inception a man to catch some accomplishment (Messias, Castro et al. 2011). Motivation has gotten from "propel", intends to move, push or impact to continue for satisfying a need (Kamalian, Yaghoubi et al. 2010).Motivation of the worker has coordinate impact on mechanical advancement, through there are ,as it is unavoidable, diverse outcomes from various researchers (Amabile, Hennessey et al. 1986),(Baer, Oldham et al. 2003).

2.7 Control and innovation technology

Everlasting noteworthy way to deal with work headway is to fulfill various leveled viability through innovation development and performance based key HRM intercessions (Osman-Gani and Zidan 2001); (Aggarwal, Han et al. 2003). The snappy authoritative re-sorting out and comprehensively disseminated building have required the prerequisites for composed systems and the better methodologies for Human Resource Management in propelling innovation technology, various leveled change and business (Chung 2002) Numerous masters in this way focused their work on the key issues of incorporated technological innovation -HRM procedures and predominant development work (Wang and Wang 2005).

2.8 Control and Motivation

The inspiration which is also known as motivation of the specialists has coordinate effect on innovation technology, through there are, as it is inevitable, unmistakable outcomes from different analysts (Amabile 1988), (Eisenberger, Armeli et al. 1998). The concept of motivation is the essential power through which individuals relegated push to deliver and complete innovative considerations. Then again, representatives are quite recently spurred that they go into past doled out part and get included in intentional and imaginative exercises in the event that they have a strong conspicuous confirmation with the firm. Hierarchical culture assumes a crucial part in propelling inventive conduct, so it is the duty among people from an association to the extent having confidence in development as an authoritative values and tolerating headway related principles regular within the firm (Dulaimi and Hartmann 2006).

2.9 Performance of the firm technological innovation

Consider has shown that improvement has a close-by association with authoritative execution, as well as advancement is a component which can impact progressive execution (Damanpour 1991); (Han, Kim et al. 1998); (Yeung, Lai et al. 2007). The essential results of specialists development are point of fact the movements in various leveled advancement, the change of publicizing technique, thing upgrades and the headway of administration strategy means and methodologies; while there are movements offer conditions, resources and probabilities of results for high advantages and it improve the execution of big business. Wares advancement can make endeavors construct the open entryways for improvement and expansion; innovative conduct and activities will pass on the fundamentals of contentions to the affiliation. Albeit speculatively most scientists trust that development must have a section on improving the firm execution, there is every so often exact support in certifiable research.

III. METHODOLOGY

3.1 Method for data collection

The sort and amount of information to be gathered relies on the way of the review together with its exploration objective. There are distinctive information gathering strategies that are being utilized as a part of the examination, understanding. The part of specialist set the phase for discourse of issues required in gathering information (Trotter 2012). Analyst chooses the appropriate information gathering strategy as per study impediment. These are depicting howl (Hair, Wolfinbarger et al.) also (Samouel, Money et al. 2003), Essentials of Business Research Methods, John Wiley and Sons Inc., New York. Corsten, D. also, (Kumar and Phrommathed 2005) "Do Suppliers Benefit from Collaborative Relationships with Large Retailers? An Empirical Investigation of Efficient Consumer Response Adoption", (Balmer, van Riel et al. 1997).

3.2 Primary

Essential source gives the direct data to researcher. The numerous systems which be utilized to gather the essential information. The selection of procedures relies on the reason for the review (Kumar and Phrommathed 2005). Overviews on telephones, PC exchange, mail catches, and fax study and up close and personal meetings are the essential information accumulation strategy. Taking after is the rundown of sorts of Primary information gathering strategy.

1. Different people interviews
2. Filled questionnaires
3. Observing respondents

3.3 Secondary

The second technique for the collection of data comprises on organization records, assessing concentrates distributed by outer sources and looking at the physical draw, for example, elimination and growth (Albaum and Smith 2005). The data which is based on secondary as of now exist inside the association or outside the association by means of email, web, fax or past reports and overviews. An opportunity to get to the data which is secondary is generally short and may not be issue particular (Wegner 2010). Taking after is the rundown of sorts of Secondary information accumulation strategy: (Treiblmaier and Filzmoser 2011), Fundamentals of advertising examination, Sage Publication, London, Applied Business Statistics Typesetter, Lebon Publishing Service, USA.

3.4 Research Model

As this review is examining the connection Between features of HRM (Training of Employee , Motivation which is Immaterial and Control in Process), Innovation Technology and Performance therefor, incentive material demonstrates that worker preparing, material impetuses, result evaluation and control, non-material motivators, handle examination and control are variables which are independent, the mediating variable is innovation technology and variable which is dependent is performance .

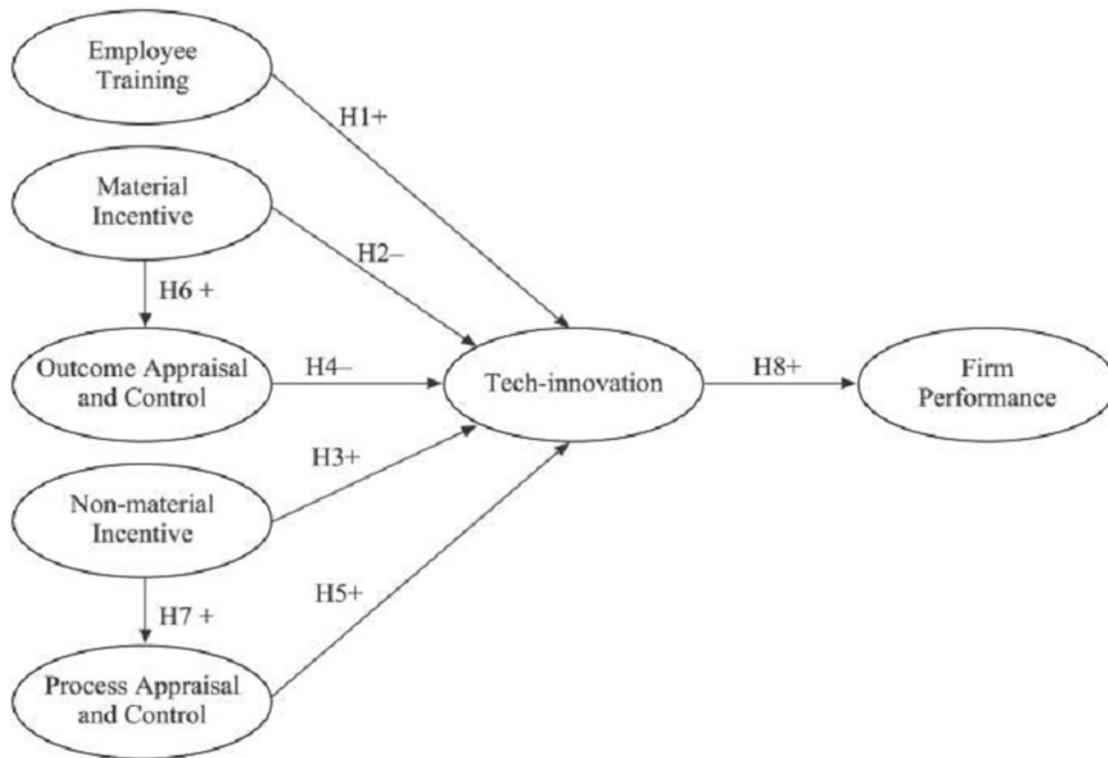


Figure 1 Framework

3.5 Research Design

Most imperative piece of this section is to build up the design of the research due to which every last basic part of research is produced such that is most suitable to issue under thought. The research configuration make less demanding for the specialist to execute the analyst procedure while it additionally serves in research of minimization endeavors as it evacuates ambiguities in setting of research sort, test choice, information gathering and the process of analysis.

3.6 Nature of the study

Essentially of that review is of four unique structures exploratory, co-relation, study which is casual due to environment and descriptive. Current reviews are in nature explanatory and descriptive with respect to achievement of the objectives.

3.7 Type of investigation

In research, various types of examination like case study, method of survey and experimental, and observational. These all are altogether led in fundamentally two sorts of settings first is thought up setting and second is non-created setting. At the point when information is gathered through most extreme obstruction at work put it will be viewed as research has done in devised .On the other hand examine finished with negligible impedence at work environment will be viewed as non-thought up setting. In current review data was gathered through overview technique which is method of survey.

3.8 Time Horizon

By utilizing the method of survey data can gathered in two courses either at one purpose of time that is viewed as a study of

cross sectional or gathering the data some other way than one purpose of time that is viewed as study which is longitudinal . Now this study is longitudinal.

3.9 Instruments

For the collection of data questionnaire technique is used of 30 questions are utilized. From these 30 questions 5 of them are based on the respondents demographics of respondents, 25 questions are significant to 7 factors being researched to study. All inquiries incorporated into the survey are created to 5 options based on scale which are Likert and with the help of study based on various topics questionnaire is taken (Deelman, Callaghan et al. 2006).

IV. ANALYSIS AND RESULTS

This section introduces the data analysis. The main part talks about the respondent's statistic profiles and show the summery based on descriptive including standard deviations and mean for variables. Second part clarifies the evaluated aftereffects of validity and reliability of estimations of builds. The third part displays the consequences of analysis which is regression. Hypothesis relationship is explained in the conceptual model which examinesthe hypothesis test in an order.

4.1 Descriptive statistics

4.1.1 Respondents demographic profile

The questionnaires were distributed to various industries such as engineering,telecom and manufacturing. Total numbers of questionnaires were 305 out of which 250 were received back

with 82% of appropriate response Table 1. Shows the respondents profile of demographic. The table consists on information of all respondents such as age, gender, how many employees and in which sector they are working.

Table 1 Respondents profile of demographic

Demographics	Frequency	%
Gender (N = 250)		
Male	196	76
Female	52	21
Age (N = 250)		
20-29	86	35
30-39	117	47
40-49	35	14
50-59	12	15
Employees		
50 or less	64	25
51 – 200	52	21
201 – 500	63	25
1000 or more	71	28
Sector		
Telecommunication	65	26
Engineering	58	23
Manufacturing	127	50

1st table demonstrates that received back questionnaires were 250 which are based on 196 males and 52 females, while 2 respondents did not give any data with respect to their sexual orientation. According to age there were 86 respondents within the age of 20 to 29. From the age of 30 to 39 the numbers of respondents were 117. From the age of 40 to 49 the numbers of respondents were 35. From the age of 50 to 59 the numbers of respondents were 12. Most of the respondents are less than the age of 50; this demonstrates a large portion of respondents in this review are below than 50. Respondents from the total of 305, 250 provided the information that head of number of employees based of 64 industries are working with fewer than 50 employees, 52 ventures are locked in with 51-200 number of employees and 71 enterprises are more than 1000 workers. From the response of 250, 65 are working with the sector of telecom, 58 are working with the sector of engineering and 127 are working with the sector of manufacturing.

4.2 Analysis and results

4.2.1 Reliability test

The second table shows the evaluated estimations of Cronbach's coefficient alpha that analyze for measurement of the internal consistency and reliability. For the current specimen,

estimations of Cronbach's alpha change from 0.874 to 0.898 which shows the every multi-thing develop have high possess reliability: the training of employee (alpha = 0.898), incentive material (alpha = 0.881), incentive non-material (alpha = 0.894), control on process(alpha = 0.881), control on outcome(alpha = 0.874), innovation technology (alpha = 0.876) and performance of firm (alpha = 0.877) have high possess reliability. The high Cronbach's alpha incentive for each build suggests that they are inside reliable. Facilitate, things of each develop measure a similar substance all around. In a nutshell, the higher the Cronbach's estimation of a develop, the higher the reliability is of measuring a similar build.

Table 2 Measurement of reliability

Constructs	Valid N	Number of Items	Cronbach's Alpha
The training of employee	250	3	.898
Incentives Material	250	3	.881
Incentives Non material	250	3	.894
Control on Process	250	3	.881
Control on Outcome	250	3	.874
Innovation Technology	250	5	.876
Performance of Firm	250	4	.877

4.2.2 Regressing analysis

The analysis of regression has been utilized to decide the impact of variable which is independent (i.e. training of employee, incentive material, incentive non-material, control on process and control on outcome) on variable which is mediating i.e. innovation technology and to decide the mediating factor on variable which is dependent (performance of firm) then incentive material impact on control in outcomes and incentive non-material impact on control on process. As appeared in Figure below 2. Now by the help of results we can demonstrate a there is a positive significant outcome of training employees on innovation technology ($\beta = 0.495, P < 0.001$), incentive material on innovation technology ($\beta = 0.556, P < 0.001$), incentive non-material impetus on innovation technology ($\beta = 0.504, P < 0.001$) control process on innovation technology ($\beta = 0.663, P < 0.001$) and control outcome on innovation technology ($\beta = 0.664, p < 0.001$). Incentive Material and control outcome ($\beta = 0.688, P < 0.001$) and incentive non-material and control process ($\beta = 0.504, P < 0.001$). This demonstrates that innovation technology catches the most extreme impact of control outcome and innovation technology catches minimal impact of training employee.

Likewise, the variable which is mediating has a positive huge impact on performance of firm: innovation technology on performance of firm ($\beta = 0.711, p < 0.001$). Comes about unmistakably represent that innovation technology greatly influence performance of firm.

Research Modal

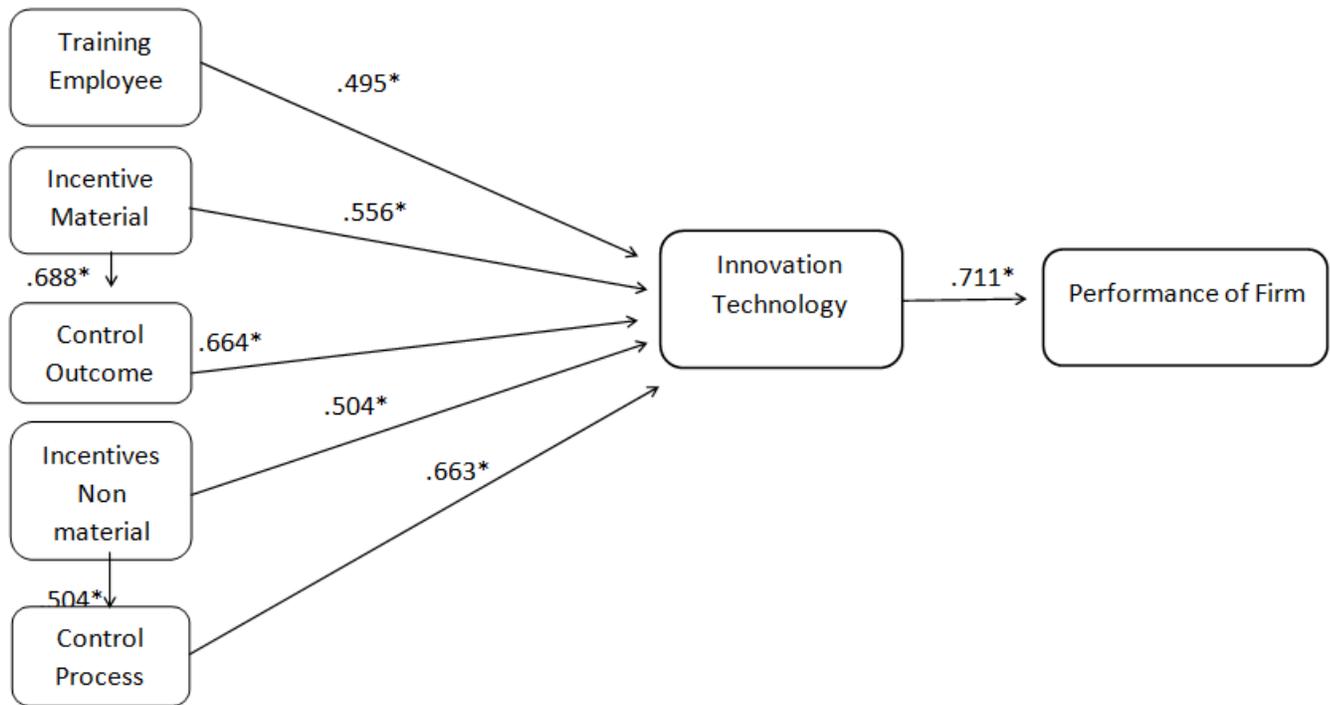


Figure 2 Direct pathway relationships

* = "represents significance |21=9999=evel below 0.001"

4.2.3 Mediating analysis

In this analysis that the immediate impacts of an independent factor on a mediating factor, of a mediating factor on a dependent factor and of an independent factor on dependent factor are consider significant then the mediation might be tried. For the test of a mediating variable, independent factor and mediating factor both are gone into a regression for same purpose from independent factors. On the off chance that coefficients of both factors (i.e. mediation and independent) are noteworthy then it demonstrates the incomplete mediation of intervening variable between dependent factor and independent variable. In some cases that coefficient of the intervening variable stays noteworthy yet the coefficient of independent factor turns irrelevant when both are entered in a regression for same purpose from independent factors, then it indicates full intercession of mediating variable between independent factor and dependent factor. In utilized analysis of regression of employee to decide the centrality of intervention of mediating factors between independent factor and dependent factors.

Figure#02 shows to that there are significant immediate impacts of dependent factors on mediating factor and of intervening variable on dependent factor. Table3 shows to those immediate impacts of independent factors on dependent factors are critical. So the mediation conditions for testing are fulfilled.

Table 3 Direct effects of HR policies on performance

Independent variables	Dependent variable
	Performance of Firm
Training of Employee	.532*
Incentives Material	.584*
Incentives Non material	.472*
Control on Process	.613*
Control on Outcome	.658*

“Note: * represents significance at less than 0.01”

Table 3 demonstrates that training of employee, incentive material, incentive non-material, control on process and control on outcome adds to performance of firm are significantly positive. The results demonstrate that innovation technology comparatively mediates between independent factors (i.e. training of employee, incentive material, incentive non-material, control process and control outcome) and dependent factors. training employee on performance of firm ($\beta = 0.238$, $p < 0.001$), incentive material on performance of firm ($\beta = 0.584$, $p < 0.001$), incentive non-material on performance of employee ($\beta = 0.151$, $p < 0.001$), control process on performance of firm ($\beta = 0.253$, $p < 0.001$) and control outcome on performance of firm ($\beta = 0.332$, $p < 0.001$).

Table 4 Hypotheses results summary

<i>Hypotheses</i>	<i>Results</i>
H1: There is a positive relationship between training of employee and innovation technology	Supported
H2: There is a positive relationship between incentives non material and innovation technology	Supported
H3: There is a positive relationship between non material and technology innovation	Supported
H4: There is a positive relationship between appraisal and control based on innovation outcome and technology innovation	Supported
H5: There is a positive relationship between appraisal and control based on innovation process and technology innovation	Supported
H6: There is a positive relationship between material incentives and outcome control.	Supported
H7: There is a positive relationship between nonmaterial incentives and process control.	Supported
H8: There is a positive relationship between technology innovation and firm performance	Supported

V. DISCUSSION AND CONCLUSION

5.1 Findings in the study

Based on hypothesis and innovation theories have confirmed significance of both Human Resource Method and mechanical advancement on an association's execution. In this review, our commitment focus on the working of an applied system that clears up that connection between Human Resource Management, innovation technology and firm execution, and we inspect the impacts of cutting edge association's Human Resource Management on innovation technology and firm execution in Pakistan. Drawing on asset based hypothesis and advancement hypothesis, this review demonstrates that a cutting edge association's Human Resource Management vitally affects innovation technology, which prompts that association's prevalent execution. Past giving a rich portrayal of connection between Human Resource Management, innovation technology and firm execution. This review demonstrates a couple of critical discoveries. Right off the bat, we find there is sure immediate effect on innovation technology by worker preparing in cutting edge firms. This result gives the support for asset based hypothesis that always overhauling the way of an association's HR will expands the association's upper hand.

Right when a firm needs to get an upper hand in a dubious financial condition, for instance, Pakistan, there is a necessity for higher quality HR, which can be gained via preparing all workers of the firm. For cutting edge firms in the nations with a creating economy for instance, Pakistan, there are various market openings due to monetary moves and institutional changes. Appropriately, worker preparing helps cutting edge firms to not simply increment inventive progression through extended adapting, furthermore to discover new market openings and to

overhaul their headway limit through data trade and aptitude change.

Our discoveries exhibit that motivational material are specifically identified with innovation technology and that incentive non-material forces are likewise emphatically identified with innovation technology in cutting edge firms. These discoveries bolster the contention of Amabile and her colleagues (Amabile 1988).

Interim, the last finding is likewise predictable with past research comes about that found that stipend of self-development and autonomy in the working environment can improve the innovation technology work of the employees in cutting edge firms (Li, Zhao et al. 2006);(Mumford 2000). The consequences of this review emphatically propose that procedure evaluation and control is decidedly identified with innovation technology, while result examination and control is likewise specifically identified with innovation technology. Our discoveries fortify the work by (DeTienne and Koberg 2002)and analyze the exploration of(Spender and Kessler 1995), both of whom noticed that procedure control is useful to development. Then again, prepare examination and control is of advantage in empowering hazard taking activities of workers. In this manner, our exploration comes about approve the perspective of(Mumford 2000), and furthermore bolster the examination of (Hitt, Hoskisson et al. 1996)and also(Scott 1995). This review looks at the point of view that there is a cozy connection amongst inspiration and control (Bradley and Gelb 1981);(Orpen 1994). Inquire about outcomes propose that incentive material force is emphatically identified with result control, and incentive non-material is decidedly identified with process control. These discoveries propose that cutting edge firms require successful outcomes estimation and evaluation when they underscore incentive material forces.

When underscoring incentive non-material, it is essential to utilize prepare examination and control. These discoveries demonstrate that cutting edge firms ought to pick successful control strategies in light of the workers' requests and the necessities of innovative firms to rouse the employees. In concurrence with many research comes about (Abernathy and Utterback 1978);(Hill and Rothaermel 2003);(Tripsas and Gavetti 2000), we additionally affirm that innovation technology is emphatically identified with firm execution amid the Pakistani financial transitional period. The innovation technology of cutting edge firms has a vital impact on firm execution, and successful Human Resource Management can guarantee manageable innovation technology in innovative firms. Thus, viable Human Resource Management can upgrade the execution of cutting edge firms by expanding innovation technology.

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