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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

### EDITORIAL

In the name of Almighty Allah (SWT), we bow down our heads to seek his ever blessings and Darood-o-Salam onto last of his Prophets Muhammad (SAWS), in bringing out this 9<sup>th</sup> volume (No.9), 2017, with the status of ISSN, On-Line, encoded-2521-8697, with a supportive and encouraging positive response from France, Pak. JLSc, has now been made available On-Line since 2009. Simultaneously, the subsidiary of our endeavor, National Indexing and Abstracting Services (NIABS) was also ISSN-Registered encoded 2521-5647, Volume-III of which is being published in 2017, as approved in the 11<sup>th</sup> meeting of the Editorial Board, September, 2017.

We have received, got evaluated from the respective Referees and included Ten (10) out of Eleven (11) Research Articles in this Vol-IX (No.09), 2017. One on Livestock, Two on Agriculture, Two on Rural Development, Two on Employee Empowerment and One on Brucellosis. While Two pertain to Organizational and Self efficiency case studies, in Pakistan. One particular article was specifically evident from SAARC Counties on the subject of use of FDI and its impact on Agricultural Sector.

The Editorial Board passed the condolence Resolution to our beloved kind and popular Patron-in-Chief of Livestock Development Foundation (LDF) Regd. Mashook Ali Bhutto, a Competent Patron of Pak. JLSc. Since 2004 and 2008 respectively. Allah Almighty (SWT) Bless him rest in peace (Ameen).

The newly Elected member, EB, Shakira Ghazanfar (Biotechnology) is welcomed to our team. We stand committed to this sacred task of publishing this, with dedication, disseminating Research knowledge to all concerned, with the Blessings of Allah (SWT), in the days to come.

**(Dr. Muhammad Hafeez)**  
Chief Editor

## CONDOLENCE

إِنَّا لِلَّهِ وَإِنَّا إِلَيْهِ رَاجِعُونَ

With great reverence, grief and heavy hearted sadness the Editorial Board and myself, together with all the respected Referees of Pak.JLSc. express our Deepest Condolence on the occasion of the departing of our beloved, kind and ever respected, Patron-in-Chief of Livestock Development Foundation (LDF), Registered and a patron and guide to all of us, Dr. Mashook Ali Bhutto, who expired in May-2017 Ex-Advisor to Prime Minister of Pakistan on Livestock, who left this world.

We all pray to Almighty Allah (SWT) bless him rest in peace and shower his blessings on to him, till the Day of Judgement with recommended blessings of last of his Prophets Muhammad (SAWS), and sympathize our heartfelt sorrows with the bereaved family members.

**(Dr. Muhammad Hafeez)**  
Chief Editor

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**Dr. Muhammad Hafeez**

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**RECENT INSTRUCTIONS/GUIDE LINES FOR CONTRIBUTORS**

1. The original Articles/Research papers be sent on A-4 size paper with one inch margin on both right and left sides. The text should be on Font No.11.
2. The standard format should be abstract, introduction, review of literature, material and methods, result, discussion, conclusions and recommendations followed by references/literature cited (in alphabetical order). Reference must appear in the text and preferably for the last 10 years.
3. Number of tables be restricted to minimum possible.
4. Two printed (hard copies) and a CD (soft copy) may also be enclosed to quicken the process of References evaluation(s).
5. Colour prints, photographs, if indispensable, (include 200 prints/200 photographs with colour scheme advised). This is negotiable.
6. Reference be kept limited (Not more than ten) preferably for the last 5-10 years. Standard format be adopted.
7. Contribution of Rs.3000/- (three thousand only)/article/paper be enclosed upto four pages. Each extra page will cost Rs.1000/- (one thousand only).
8. Abstracts be limited to one para of 100-150 words in between the A-4 paper supported in separate line, with key words for example.  
Microbiology: Coliform bacilli; E-coli; incidence of food contamination, Pakistan.  
Chemistry; Physico–Chemical analysis; algae, lotus lake water – Pakistan.
9. First screening of the papers will be within one month and acceptance/or other wise will be communicated after a period of 30 (THIRTY) days.
10. Changes/Amendments/Reviewers comments and advises must be attended by the contributor(s) authors and final draft with CDs, be re-submitted to the Chief Editor within 14 days (hard copies of course).
11. Duplications be avoided.
12. Advertisements be sent according to subscribed rates.
13. Selected Scientific paper/Articles will be subjected to PEER REVIEWING simultaneously by the local as well as Foreign Referees, in accordance with the guidelines of HEC Islamabad Pakistan.
14. Year Schedule of Processing Articles of Each Volume is also enclosed.
15. Publishing P.J.L.Sc. upto this Volume-IX (No.09), 2017 is on Annual basis. The Editorial Board in its 8<sup>th</sup> and 9<sup>th</sup> meeting agreed to publish P.J.L.Sc. Twice a year (on Bi-Annual Basis), immediate after the formal approval of HEC is obtained, with possible Financial Assistance.
16. We are now available on [www.Pak.JLSc.Org](http://www.Pak.JLSc.Org) as well as On-Line, URL-  
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**PROPOSED ANNUAL SCHEDULE OF PROCESSING ARTICLES**  
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## AN OVERVIEW OF THE “POULTRY INDUSTRY” COURSE BOOK-AIOU

Shahid Javaid<sup>1</sup> and Tabinda Khawaja<sup>2</sup>

### ABSTRACT

A recent effort made by the author for Poultry Assistant's Diploma course/FA level, for AIOU student in Urdu spread over nine Units (01-09) chapters comprising 225 pages, is an endeavor with recent information supported with Poultry Production data of 2013-14 and 2014-15. Unit one, spread over 35 pages (09-45) indicates the importance of the course, the Poultry Industry, data on Poultry farms, the Poultry Population (Desi commercial) poultry meat and eggs produced in the country. This unit also includes information of allied industries namely poultry feed, medicines and vaccines. Unit Two spread over 35 pages (45-78), describes poultry farms (broilers, layers and breeders), feed mills, preparation of feeds with recent economical formulae, and market rates with description of raw material, consisting of starches, proteins, vitamins, minerals procurement of hatching eggs alongwith function of hatcheries. The Third unit, spread over 20 pages, describes the poultry sheds, the housing requirements and feed management including poultry house equipments. Unit Four (23 pages) deals with healthy poultry meat and eggs production for human consumption with human requirements of animal proteins (per capita) alongwith, recent data. Unit Five spread over 26 pages describes other poultry birds rearing, namely turkey, ducks, guinea, fowl, pea fowls, pigeons, ostriches and geese etc while unit Six (43 pages) describes free range poultry of exotic and desi birds (for meat and eggs production) specially reared in rural areas. Unit Seven (16 pages) describes rural poultry alongwith rural poultry program executed in Punjab Poultry Development Department, in sixtees seventees and eightees. This unit also includes other birds as well. Unit Eight (20 pages) deals with poultry extension education and the duties of poultry extension workers. This unit describes difficulties and problems of extension personnel and farmers with possible and reasonable suggestions for solving these problems. The last Unit 09, spread over 20 pages, comprise the future prospects of poultry industry of Pakistan, as such, and alongwith the allied industries namely the poultry feed, the medicines, vaccines and eggs business, specially various poultry meat varieties, value add products (food products) of egg and poultry meat mixes and premise, available in market, are discussed with future hopes of contribution of such an important industry of our country with ample potential of prosperity. The book is supported by recent literature and self assessment questions with correct answers by the end of each unit.

**Key Words:** Poultry Industry, Pakistan.

### INTRODUCTION:

The Livestock and Poultry personnel, the teachers/ Assistant Professor and the Committee of Courses of the Department of Agricultural Sciences (DAS) of Allama Iqbal Open University (AIOU) decided to start of post Matric Poultry Assistant's Diploma Course (PADC) of FA level. This course book “Poultry Industry” being the one to be taught in first semester. The importance of this course is quite understood, with the objectives mainly to create skilled and moderately qualified youth manpower to assist veterinarians, Poultry Productionists in the poultry farms, hatcheries, feed mills, and poultry related allied

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industries in the country.

This technical, written up in Urdu, spread over more than 220 pages, comprises nine (09) units (01 to 09) highlights the chapter wise/unit wise contents, with a set format of AIOU book's pattern. The book carries Half Credit (HC) when weight age is given to evaluation for examination. The writer, Dr. Muhammad hafeez is an experienced Administrator, a University teacher and a Researcher partially been involved in the subject of Livestock and Poultry, since 1972 while the course reviewer is Shahid Javed, an experienced teacher of AIOU. The book is supported with recent data of poultry sector, in the country and hoped to provide private sector information on poultry population, production of poultry meat, broilers feed and feedings, and eggs produced in the year 2013-14 and 2014-15 along with detailed technical information, supported with references, in the end of each unit/chapter of the book. More inside matter will be highlighted when we visit each unit of the book.

#### **BRIEF REVIEWED LITERATURE:**

The author has not only supported each unit/each chapter with a format of academic material in the form of Self Assessment Questions with their correct answers but also added the recent literature/references which are presented below:-

Ejaz Wasti (2011-12), (2012-13) and (2014-15) has been excessively been referred for Livestock and Poultry Sectors data on population, its production, poultry meat, day old chicks and eggs produced in the country, Pak. Economic Survey Reports, Government of Pakistan (GoP), the latest figers are introduced to this book.

Livestock Wing 2011-12, 2012-13, 2013-14 and 2014-15 has been referred in most of the units for updates of detailed category of desi and commercial poultry, the number of day old chicks, the number of table eggs and hatching eggs and number of registered farmers (broilers, layers, breeders) reported excessively. Directorate of Poultry Research Institute (PRI) for 2011-12, 2012-13, 2013-14 and 2015-16 updated figers on number of farms (broilers, layers breeders) eggs produced in Punjab province and of the country, Reported excessively. Pakistan

Bureau of Statistics (PBS) 2011-12, 2012-13, 2013-14 and 2014-15 the figures and data on Livestock, Poultry and their products.

Muhammad Hafeez 2006, 2008, 2009, 2011, 2015, these books and training manuals 2006-2015 are the personal endeavors of the author on Livestock and Poultry sector. The 2008 efforts is a text book of graduate students, Code-782 entitled “Livestock Industry” AIOU book series (2009) is a business oriented book entitled “Investment in Livestock Sector”: a real business in Pakistan” while (2011) effort is an HEC publication entitled “Livestock Industry: Livestock and Poultry Production of Pakistan”. Both the training mammals of (2006) and 2015 are “Animal health and production Workers Training Manuals”, all ISBN Registered and full of information on Livestock & Poultry and guidelines on feeding livestock and poultry.

While the author’s effort in 2013 pertain to “Economic Losses due to infectious Disease in Pakistan” describes various Livestock and Poultry Disease, as refereed in this book.

Gel Demron (2013) “How to raise your Chiks” Storey writing, North Adams Mesachusetts, USA is a fundamental poultry book, used everywhere.

S.H. Lover (2000). Write’s Encyclopedia on poultry sciences bio-technology books Delhi pertain to various breed characteristics of poultry and other birds, a voluminous book referred to and used by many researchers, writers, planners and progressive farmers.

Harvey Userly (2011) “Poultry Housing and management of Poultry Farming at a Small Scale”, Calsnia, greenhills, white junction, Vermont US, a concise book for poultry farming, being referred to, in this book and elsewhere.

#### **The text of the book:**

The book is being reviewed from (i) Technical approach (the material on poultry sciences) and (ii) Linking the professional writers with its commercial/industrial side, to bring to our reader(s) frank but critical evaluation, of the writer. Unit wise/chapter wise hence every unit will be deeply visited in the context of introduction and objectives of each:

Unit one spread over 30 pages (09-41) describes an overall introduction to Poultry Industry staring with its history in the country and linking the domestication

of jungle fowl, tracing back to the year 5000 BC, its anodulation to the free range poultry, the backyard poultry and a very recent poultry farming system in many countries as well as in our country Pakistan. The commercial poultry got introduced in the decades of fitees and sixtees as tabulated recently the data of poultry population, production of poultry meat and eggs of two years (2013-14) and (2014-15) have been presented in terms of total broilers, layers, breeding stock, day old chicks and eggs produced are detailed. In the same unit, poultry meat produced its various by products and various allied industries have been briefly narrated such as poultry feed, poultry medicines and vaccines, use of eggs in food chains, value addition and various equipments have been discussed. The unit ends with problems and difficulties faced by poultry farming community and industry personnel with possible remedial suggestions, with self assessment questions and their correct answers.

Unit two, spread over 36 pages (43-78), is a comprehensive and full of information pertaining to first three different kinds of poultry farms (broilers, layers and breeder farms), secondly the feed and feeding of poultry birds with some economical feed formulation while third part of this unit/chapter pertain to procurement of hatching eggs, chicks production in hatcheries comprising various omportant steps in hatching of eggs and day old chicks production. This chapter/unit also describes poultry hygiene at all the steps of eggs procurement, hatcheries and day old chicks produced. The last but not the least is a meat processing aspect of poultry industry, various packings available in the market have been enumerated for the information of students and reader(s) of this book specially, poultry personnel.

Unit three, spread over 17 pages (80-97), describes the poultry shed/poultry house, in a farm. This is limited to the structure (construction) of main shed, with complete facilities of an office, a feed store room, water and feed supply system, power generation room, the utencils and equipments used with essential manpower needed in any farm. The author has written, as felt, the construction of mosque for five time prayers, residential house for farm personnel a poultry farm clinic which are now a requirement. This units also ends with self assessment questions with their correct answers, supported with references.

Unit Four, spread over 09 pages (99-118), pertain to the healthy poultry meat production for human consumption, the eggs produced and used for human food, or in food value added products. The author has categorized various packings and varieties of poultry meat products namely chicken koofta, kabab, minced meat, nuggests, pre-cooked as well as freshly cooked, chicken boneless, tikka, roast, grilled, sajji, Bar-B-Que, small packings such as chicken yakhni, soup, showarma, corn soup, nuddles, cubes, pizza, berger biryani, vegetable and pastia etc. In the last portion of this unit/chapter, meat consumption and possible adverse affects with remedies are suggested. The chapter/unit ends with self assessment questions with correct answers and literature/references, as per format of the book.

Unit five, spread over 25 pages (120-144), deals with other poultry birds, some of which are of too importance, some show birds and some being used by those who are fond of these and some of these are being reared on scientific farming. These other birds are Turkeys, Ducks, Quails, Guinea fowl, pea-fowl, pigeons, geese, Ostrich and Pheasants. The author has described breed characterists and features of both males and females of each breed, possible farming, care and managements (alongwith poultry health care) including their commercial values. The Unit/chapter ends with self assessment questions and correct answers, supported with references.

Unit Six, spread over 14 pages (146-160), is comparatively a smaller writ-up on the subject of Free Range Poultry (FRP). The author has splitted these poultry birds into (i) FRP for eggs production and (ii) FRP for poultry meat purposes. Various imported/Exotic breeds of poultry, as well as locally available Desi birds, have been included. Low cost/economical feed formulae have been included with market rates, of Rawalpindi-Islamabad twin cities (the rates were of 2015) A short account of some prevalent diseases endemic, have been incorporated. The Unit ended with self assessment questions with correct answers and references.

Unit Seven, spread over 15 pages (162-177) is again a smaller unit describing the subject of Rural Poultry in the country and elsewhere. Some particular breeds, kept in the rural areas which is not included in

commercial/organized farming system. Two cross breed Dokki Fayyarmi and Lyelpul Silver Black One Exotic and Two Desi breeds specially, Aseel and Kulangi have been discussed in detail. In this unit other poultry birds have also been included for those who can keep/or they are fond of rearing other birds, for show purposes or commercial business. The unit ends with self assessment questions and supported with references, as per format.

Unit Eight, spread over 20 pages (179-199), pertain to Poultry Extension Education. The chapter/unit encompasses its importance, guiding principles, poultry development program, poultry produced under this program specially in Punjab province. This chapter/unit also envisages the problems and difficulties of broiler farmers, layer farmers, hatchery men, eggs business, personnel poultry meat producers, Poultry feed millers, people related with poultry medicines and vaccines. After having enumerated the problems/difficulties the author has suggested some of the solutions and recommendations to the Government authorities, to pay attention. A short training program for poultry attendants and poultry extension workers is also proposed. The unit ends with self assessment questions and correct answers, supported with references.

Unit Nine, the last one, spread over 22 pages (201-222), describes the future prospects of Poultry Industry, based on its potentials, in the years to come. This last chapter/unit, to our frank opinion is the real out come in understanding that poultry industry is a great and growing pillar of our country. Supported with facts and figers and tabulated, stating that more than 1.5 million people are involved in this industry. The consumption of poultry meat (different varieties) and eggs for our national requirements, the authors is confident that this sector will grow. The unit ends with self assessment questions, their correct answers and supported with references and color plates/of photographs of various entities of poultry sector.

### **Our Frank Opinion:**

This is a new effort with recent information, written in Urdu, and developed on the text book pattern will help students, teachers, farmers and all stakeholders of poultry industry, in the country and abroad. The author needs appreciation for such an endeavor, in livestock sector, specially Poultry sub-sector of Pakistan.

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## LEADERSHIP AND EMPLOYEE CREATIVITY: EXPLAINING MEDIATING ROLE OF PERSONAL INITIATIVE

Usman Javed<sup>1</sup>, Muhammad Ilyas<sup>2</sup> and Fouzia Jamshaid<sup>3</sup>

### ABSTRACT

The objective of this study was basically two fold. First to reveal the mediating effects of personal initiative between leadership styles and employee creativity. Second to collect data from real respondents working in different growing sectors who can give true feedback to survey questionnaire and the findings could practically help out organizations to boost up employee creativity. In this study, the effect of personal initiatives checked which were found to be mediated positive relationship between leadership and employee creativity. It is thus concluded that transformational leadership had better positive effects on employee creativity with the mediating role of personal initiatives as compared to transitional leadership. This was in line with the earlier study in which leadership effect was examined on employee creativity where the moderating roles of personal initiatives, strengthen their effects.

**Keywords:** Leadership, Employee Creativity, Personal Initiative.

### INTRODUCTION:

Evidence from past research has clearly demonstrated that employee creativity has made a visible contribution towards organizational success (Gumusluoglu and Ilsev, 2009). Creativity is considered as the key to success in today's dynamic era because turbulent environment needs continuous improvement to set benchmarks as well as to remain competitive in the market. Organizations have realized the importance of the human resource through which objectives can be met effectively and remaining competitive at the same time, so firms have started efforts to nourish creativity in their organizations (Tichy, 2006) (Nawaz and Danish, 2011). Personal initiatives, the inner spark that initiates productive actions, (taken by the intention to increase creativity) can play important role. It was proved in prior studies that personal initiatives had direct significant relationship on employee creativity (Felfe and Hermann, 2014).

In case of Pakistan, financial institutions especially telecom industry are growing rapidly since last 15 years. Previously cellular subscribers were spending 65 million per annum for using these services while currently it was around 112 million (Pakistan Economic Survey, 2014). This study examines the mediating effects of personal initiatives effect that how it can boost employee creativity, in the current scenario of rapid growth. Personal initiatives moderating effect was examined, earlier and proved strengthening effects on employee creativity

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(Hermann & Felfe, 2013). In this study, personal initiatives are taken into account to check mediating effect on employee creativity while leaders are affecting at same time (Felfe & Hermann, 2014). This research provided addition in literature on personal initiative effect when mediating variable was examined, first time ever. Moreover it also helped out policy makers to formulate policies considering the mediating effect of personal initiatives. To conduct this study, these working hypotheses were formulated. (i) There is a positive relationship between personal initiatives and employee creativity. (ii) There is a positive relationship of leadership styles and employee creativity with the mediating role of personal initiatives. (iii) There is a positive relationship of transformational leadership and employee creativity. (iv) There is a positive relationship of transactional leadership and employee creativity.

#### **MATERIAL AND METHODS:**

This study, of explanatory nature, in which leadership effect was examined on employees' creativity through mediation effect of personal initiatives. Data was collected through survey, and also adapted from various studies with significant value of Cronbach alpha. All responses were measured, using 5 point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree). To measure leadership (Bruce J. Avolio, 1995), multifactor leadership questionnaire (MLQ Form 5X) was used to measure transformational and transactional leadership style. This MLQ tool mean each dimension of leadership, included four items and labeled on 5 point Likert scale. Similarly personal initiatives questions also adapted from the work done by Frese and Fay (2001) with Cronbach alpha 0.70. Five items were adapted to measure qualitative creativity and five items were adapted to measure quantitative creativity.

Transformational leadership questionnaire used total 16 items, four for each item to measure it individually as per MLQ 5X. First of all, four items were adapted for intellectual stimulation from (Terry, 2013). Similarly, four items were adapted for individualized consideration from (Vet, 2014), for inspirational motivation and for idealized influence (Satpathy, 2008). Just like transformational leadership, transactional leadership questionnaire used total 16 items, four for each item to measure it individually as per MLQ 5X. First of all, four items were adapted for contingent rewards from (Tetrault, 1991). Similarly, four items were adapted for

active management from (Brown, 2003), for passive management (Kynga, 2006) and for laissez faire (Schriesheim, 2008). Personal initiatives questionnaire used total 12 items, four for each item to measure it individually. Here, all items were adapted from a single study (Almut and *et al.*, 1997) with Cronbach alpha 0.74. Employee creativity questionnaire used total 10 items, five for qualitative and five for quantitative dimensions. Five items were adapted for qualitative creativity from (Anderson and Burckhardt, 2003) with 0.77@ and five items were adapted for quantitative creativity from (Muijen, 1999) with 0.76.

### **Data and Sampling**

The total population of this study was telecom industry including cellular companies and other internet provider companies, like Nayatel telecom. Moreover, financial institutions included Waseela bank and Bank Alflah (pvt.) limited. The sampling procedure used in this study were convenience sampling strategy. Unit of analysis for this research work were employees working on different positions. Different companies in telecom and financial sectors were selected to fill up the questionnaires.

To measure the validity of the variables adapted from different studies, the Cronbach alpha test was conducted. Correlation analysis is used to confirm the relationship between different variables. Similarly regression was also used to measure the total change in depending variable due to predictor (independent) variable. To check mediation effect of personal initiatives, Andrew F. Hayes mediation process (model 4) was used. All statistical tests applied, using SPSS- (2007) version.

## **RESULTS:**

### **Descriptive statistics**

The mean value for transformational leadership (TFL) was 3.45 with standard deviation 0.73. Minimum value of TFL was 1.75 and its maximum value was 4.38. Similarly mean value of transactional leadership (TRL) was 3.43, with minimum value 1.81 and maximum value 4.44. Next, the mean value of mediating construct, personal initiatives (PI) was 3.37 with standard deviation 0.74. Its minimum value was 1.50 and maximum value was 4.25. Finally, the mean value of dependent variable, employee creativity (EC) was 3.36 with standard deviation 0.72. Its minimum value was 1.40 and maximum value was 4.60 respectively,

presented in table No.1 below:-

**Table 1: Shows the Descriptive statistics**

Variables	N	Minimum	Maximum	Mean	Std. Deviation
TFL	170	1.75	4.38	3.45	0.733
TRL	170	1.81	4.44	3.43	0.700
PI	170	1.50	4.25	3.37	0.737
EC	170	1.40	4.60	3.36	0.721

Source: Calculated by authors.

### Reliability test

The values of Cronbach alpha, for instruments adapted are given in table 2. Cronbach alpha for TFL was 0.867 representing that highly consistent response achieved. TF had total 16 items, four questions of each dimension. Usually, Cronbach alpha greater than 0.7 was considered acceptable in social sciences. Similarly Cronbach alpha for TRL is 0.841 which was also good and it had total 16 items too like TF. Each dimension of leadership included 4 questions and this tool was named as Multifactor leadership questionnaire. Further, mediating construct PI's reliability coefficient was 0.811 > 0.7 which was also good and it had 12 items to measure PI. Finally the depending variable EC has 0.753 Cronbach alpha and had 10 items, to measure the results.

**Table No. 2 Showing the Reliability Test**

Variables	Cronbach's Alpha	N of items
TFL	0.867	16
TRL	0.841	16
PI	0.811	12
EC	0.753	10

Source: Calculated by authors.

### Correlation Analysis

Correlation measured the association and its direction (positive or negative) between two variables. In table 3, TFL was positively correlated with PI as Pearson's r value was 0.436. Similarly value of TFL correlation coefficient with EC was 0.431. Further, PI's correlation with EC was 0.370 and TRL is positively correlated with PI, as Pearson's r value was 0.387. Similarly TRL correlation coefficient with EC was found as 0.360. Finally, PI's correlation coefficient with EC had value of 0.370.

**Table No. 3 Showing Correlation among TFL, TRL, PI and EC**

	TFL	TRL	PI	EC
TFL	1.000			
TRL	0.397**	1.000		
PI	0.436**	0.387**	1.000	
EC	0.431**	0.360**	0.370**	1.000

Source: Calculated by authors.\*\* Correlation is significant at the 0.01 level (2-tailed)

### Regression Analysis for TFL

To analyze the mediating effect of PI, Andrew F. Hayes (2013) process was used in this study; the effect of TFL was examined on employee creativity with the mediating role of personal initiatives, through direct and indirect regression analysis. Three different outputs were generated through this process, two of them were direct effects i.e. TFL to PI, PI to EC and one had the indirect effect of TFL on EC with the mediating role of PI.

As it can be observed from given table-4 that R square value being 0.23 means that total change in EC was explained by the PI and TFL was around 23 percent. Moreover the change in EC due to TF and PI was confirmed by the F-value, was 24.41>5 and significant too at 0.000. Coefficients of PI and TF were significant, as their p values significant at (p < 0.05). Moreover, total effect of TFL along with mediating variable PI is 0.4237 which was greater effect, as compared to the direct of TFL on EC that was 0.3273.

So, hypothetical statement (2) proved true that there was a significant relationship of transformational leadership and employee creativity with the mediating role of personal initiatives.

$$EC = \beta_0 + \beta_1(TFL) + \beta_2(PI) + \mu$$

**Table No. 4 Showing Mediation Analysis for TFL**

	$\beta$	Std. error	t	p
Constant	1.4877	0.2732	5.4491	0.0000
PI	0.2198	0.0741	2.9684	0.0034
TFL	0.3273	0.0744	4.3965	0.0000

Source: Calculated by authors.

Note: N = 170, R square = 0.226, F - value = 24.4157, p = 0.000  
Dependent variable = EC, Predictor = TFL, PI

**Table No.5 Showing Direct and Indirect Effects of TFL on EC**

	$\beta =$	SE	t	P
<b>Effects</b>				
Total effect of TFL on EC	0.4237	0.0685	6.1843	0.0000
Direct effect of TFL on EC	0.3273	0.0744	4.3965	0.0000

Source: Calculated by authors.

### Regression Analysis for TRL

There was a significant relationship of transactional leadership and employee creativity with the mediating role of personal initiatives. Three different outputs were generated through Andrew f. Hayes mediation process; two of them were direct effects i.e. TRL to PI, PI to EC and one was indirect effect of TRL on

EC with the mediating role of PI. As it can be observed from given table that R square value was 0.1923 which meant that total change in EC was explained by the PI and TR was almost 19 percent.

Further, this change due to R square value was confirmed by the F-value which was 19.88 > 5 and significant too at 0.000. The coefficients of PI and TR were significant as their t value was greater than 2 and p value was less than 0.05. So, hypothetical statement 2 proved true that there was a positive relationship of transactional leadership and employee creativity with the mediating role of personal initiatives. Moreover, total effect of TRL along with mediating variable PI was 0.3709 which was greater effect as compared to the direct of TRL on EC, that was 0.2632.

$$EC = \beta_0 + \beta_1(TRL) + \beta_2(PI) + \mu$$

**Table No. 6 Showing Mediation Analysis for TRL**

	B (Beta)	Std. error	t – value	p – value
Constant	1.5640	0.2896	5.4007	0.0000
PI	0.2651	0.0783	3.5911	0.0004
TRL	0.2632	0.0776	3.3911	0.0009

Source: Calculated by authors.

Note:  $N = 170$ ,  $R \text{ square} = 0.1923$ ,  $F - \text{value} = 19.8828$ ,  $p = 0.0000$   
*dependent variable = EC, predictor = TR, PI*

**Table No. 7 Showing Direct and Indirect Effects of TRL on EC**

	Effect	SE	t – value	p – value
Total effect of TRL on EC	0.3709	0.0741	5.0093	0.0000
Direct effect of TRL on EC	0.2632	0.0776	3.3911	0.0009

Source: Calculated by authors.

All hypotheses were proved to be true, of this study, the mediating effect of personal initiatives checked for the first time as expected the hypothesized statement proved true that personal initiatives mediated the positive relationship between leadership and employee creativity. This mediation analysis was done using Andrew F. Hayes, methodology by looking at R square of TFL to EC with media-tor,PI. TFL predicted 22 percent EC with the mediating role of PI. Meanwhile by looking at R square of TRL to EC with mediator PI, it stated that TRL was predicting 19 percent EC with the mediating role of PI. So, it can be concluded that transformational leadership have better positive effects on employee creativity with the mediating role of personal initiatives as compared to

transactional leadership. This is in line with the earlier study in which leadership effect was examined on employee creativity where the moderating roles of personal initiatives, strengthen their effects (Hermann & Felfe, 2013).

## **CONCLUSION AND RECOMMENDATIONS:**

### **CONCLUSION:**

In this study, direct effects of leadership styles, transformational leadership and transactional leadership on employee creativity have been compared with that of the same analysis in the presence of a mediator PI.

- These direct effects show the significant positive relationship among these two leadership styles and employee creativity. This was in line with earlier studies (Shah and Ali, 2012) (Kahai, Sosik and Avolio, 2003) (Boerne, 2013) (Bosiok, Sad and Serbia, 2013) and (Hermann & Felfe, 2013).
- Moreover, PI direct effect examined on employee creativity found true as hypothesized that personal initiatives have positive effects on employee creativity (Felfe & Hermann, 2014).
- The mediating effect of personal initiatives was checked for the first time as it had not been tested earlier, as suggested by (Felfe & Hermann, 2014).
- As expected the hypothesized statement proved true that personal initiatives mediated the positive relationship between leadership and employee creativity. Transformational leadership had better positive effects on employee creativity, with the mediating role of personal initiatives as compared to that of transactional leadership. This was in line with the earlier study in which leadership effect was examined on employee creativity, where the moderating roles of personal initiatives strengthen their effects (Hermann & Felfe, 2013).

### **RECOMMENDATIONS:**

- This study may help the policy makers' especially top management to concentrate on the improvement of PI through proper training workshops.
- HR departments of organizations must consider the importance of personal initiatives and they must prefer those personnel's who have good quality of taking personal initiatives, in bringing creative ideas.
- TFL should be emphasized more than that of TRL to get EC to a greater extent.

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## EFFECTS OF SOCIO-ECONOMIC FACTORS AND NUTRITION ON COGNITIVE SKILLS: A CASE STUDY OF RURAL AREAS OF KHYBER PAKHTUNKHWA

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### ABSTRACT

This study attempts to explore the scope of diverse elements in cognitive achievements. Pakistan lags far behind the Millennium Development Goals of literacy and quality, with some exceptions. This study examines the role of explicit factors like socioeconomics, nutrition, health and family inputs in the educational process. For measurement of nutrition status and Body Mass Index (BMI) was estimated, given the age of individuals. Education being a complex multifaceted process, a number of input variables were explored for their impact and consistency. Study seeks to identify the learning gaps at national, regional and gender levels through Partial Least Squares (PLS) approach of Structural Equation Modelling (SEM). Parental literacy, age, Intelligent Quotient (IQ), good health and nutrition positively improved learning capacities. Whereas, school distance, poor living conditions, lack of sanitation and other facilities reduced the achievement scores. The findings, of the study, indicated the need to take initiatives for marginalized i.e. female, rural and poor individuals in particular while policies for health and nutrition were needed, as support to students, can be very effective for quality goals.

**Key Words:** Body Mass Index (BMI), PLS- SEM, Discriminate Validity, Bootstrap t- Statistics.

### INTRODUCTION:

Educational investment by global development agencies and many developing economies have consistently focused on equal access to education in terms of enrolment and grades completion in order to attain economic welfare. A number of countries chased 100% literacy almost successfully but momentum of learning quality has not been kept during this whole process (Glewwe et al., 2011; UNESCO, 2014). Completing levels of education and reducing dropouts has conflicted with quality of education. Economies like Mexico, Ghana and Sri Lanka despite being very close to achieve universal primary education failed to train students in essentials of literacy and numeracy, even after the completion of primary schooling. Thus, quality of education is emphasized to be the central element of every education plan (Filmer et al., 2006; Glewwe, 2007).

In case of Pakistan, conventional debate on educational outcomes and cognitive achievements has discussed monetary contribution of quality and cognitive skills (Nasir and Nazli, 2000; Behrman et al., 2008; Kingdon and Söderbom, 2007; Aslam et al., 2009 and 2012). Studies in that era did not pay much attention to factors and environment out of school. Later on, estimation of education production function by Arif and Saqib (2003) incorporated the role of

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SES to determine cognitive skills. Parental literacy and home support found to enhance test scores. Many other studies for KPK districts also supported positive impact of family back ground on secondary school scores (Ahmed and Khan, 2012; Shah et al., 2012; Ghazi et al., 2013).

Household income is one of most relevant family variable, as it improves educational expenditure per child and facilitates access to other supportive materials, transport facilities and better nutrition. Parental literacy, father's occupation and dwelling environment also improve performance of students. Education of parents is more pertinent factor in Pakistan than father's profession. Parental support in study and learning aids like computer and internet access at home are much imperative for better educational achievement (Farooq et al., 2011; Shah et al., 2012).

Little focus on school facilities in education reform programs and policies for Pakistan has placed negative effect on implementation and realization (UNESCO, 2001; Smith, 2011). Besides this, many other significant inputs like support at home particularly in popular form of private tuitions, part time work during education, nutrition and health status have not been incorporated for Pakistan so far. Most of the investigations for Pakistan economy have involved linear function to assess the contribution of educational inputs. But linear estimation is not appropriate approach when a wide range of indicators is to be analyzed (Savalei and Bentler, 2010; Hair, 2011). Exclusion of important variables and choice of improper evaluation technique is more likely to result in having unreliable estimates. It urges the need to adopt suitable approach and inclusion of all important factors, with theoretical support, to measure differentials of cognitive skills and their inputs. It can draw further support in development of policies for equitable provision of education at least at school level besides geographical access for all locales and income groups.

#### **MATERIAL AND METHODS:**

Sampling structure, universal size of sample and choice of sample units, is well developed. The Province was divided in i) Northern, ii) Central and iii) Southern regions. Districts of a) Swat, b) Charsadda and c) Haripur were selected from the northern, central and southern regions of KPK respectively.

Researchers gathered the relevant information, covered 1100 households and 8752 individuals, based on the survey conducted, following the sampling frame of the Pakistan Bureau of Statistics. developed in the year 2003. Rural sampling was carried out for a list of villages (published after population census of 1998). One primary unit of sampling was selected from rural areas of KPK. One secondary level household was chosen at random from primary units, given the proportion of total households likely to belong to each unit.

### **Description of Variables**

Manifest variables for both endogenous and exogenous indicators were constructed by their relevant observed variables. Cognitive skills were measured as a function of multiple variables of education function. Latent construct for cognitive skills was composed of literacy and numeracy test scores. These tests are five categories i.e. i) short literacy test, ii) long literacy test, iii) short math test, iv) long math test and v) English test, respectively.

Exogenous variables namely, socioeconomic background, nutrition and health status, individual attributes, physical facilities at school and teaching support. The socioeconomic background comprised of monthly expenditure of household, major source of livelihood, type of dwelling, ownership of dwelling, availability and source of drinking water, facility of toilet at home, electricity, source of energy, occupied share of dwelling, computer facility at home, listening to radio, watching TV, reading newspaper, father's education, mother's education, maternal grandfather education, number of siblings (as a proxy to family size), completed education of closest sibling in age (either brother or sister), and any part time work done during school.

Nutrition and health status is comprised of four variables illness, namely i) in past one year, ii) accident or injury in past one month, iii) disability (in hearing, listening, seeing, speaking, walking and personal care) and iv) Body Mass Index (BMI) (Ivanovic, 2004). BMI was used to measure the nutrition status, and was computed according to World Health Organization WHO, (2000) and in line with the work done by Bhatti et al, (2011).

Individual attributes were measured by age, completed years of education, professional training and IQ measured by Ravens Progressive Test (RPT) as a standard to measure inherent ability independent of educational background and

learning abilities of individual (Bhatti et al, 2011). School facilities variable was constructed by type of school administration (i.e. public, private, NGO or other), school fee, distance from home to school in meters, permanent classroom, drinking water availability, useable toilet facility, furniture in class. Teaching Support consists of medium of instruction, use of blackboard, provision of separate instructor for teaching and class size. Variables on teachers' qualification and experience were not available in the survey.

### **Estimation Process**

Partial Least Square Model, estimated as joint interaction of measurement and inner models, with their corresponding weights. Standardized values of latent variables were estimated through a linear function composed of respective manifest variables independent of the type of outer model. Weight relations were estimated for either direction of measurement model.

### **RESULTS:**

Outer model assessment involved reliability of indicators and latent variables. All tests, IQ, educational attainment, BMI and immunization exhibited a very good level of indicator reliability above 0.7. Furniture and toilet facility at school, class size, dwelling, sanitation at home, newspaper reading, father's literacy and sister's literacy all have good reliability level to compose the latent variable and lie between 0.4 to 0.7. Training, age, accidents, school distance, electricity at home, medium of instruction, separate teacher for each class, maternal literacy, maternal grand-father literacy and brother's education level are sufficiently reliable with a reliability value above 0.2. All other variables could not reach the sufficient reliability value and their role is subject to significance and relevance to indicators.

Discriminant validity is a measure to represent the relevance of indicators with their corresponding constructs. Cross loadings of all variables indicates their relevance with their own constructs. Further correlation matrix of latent variables along with square root of AVE is enough to witness the fulfillment of discriminant validity of measurement model (see Table 1).

**Table No. 1 Showing the Discriminant Validity of Constructs KPK (Rural)**

Constructs	S	-S		n (a)	n (b)		ES	SQRT (AVE)
<b>CS</b>								0.882
<b>F_S</b>	.612							0.495
<b>H</b>	.227	.258						0.752
<b>In (a)</b>	.768	.413	.245					0.789
<b>In (b)</b>	.476	.389	.371	.417				0.738
<b>N</b>	0.013	.043	0.146	.003	0.106			1.000
<b>S</b>	.325	.356	.171	.334	.203	0.005		0.458
<b>SES</b>	0.358	0.438	0.100	0.389	0.169	0.148	0.315	0.502
<b>T</b>	.170	.115	.051	.137	.091	.025	.311	0.119

CS- Cognitive Skill

H – Health

In (b) – Individual characteristics (b)

S – School facilities

T – Teaching support

F-S-Family Support in learning

In (a) – Individual characteristics (a)

N – Nutrition

SES –Socio-Economic Status

Source: Authors' calculation.

### Structural Model Evaluation

Inner model is evaluated by its good fit presented through R-square. It has a value 0.64 and presents a substantial effect of structural model constructs for explaining the endogenous latent variable. Goodness of fit is calculated by commonality and R-square value, it is 0.71 that represents the strength of model fit.

### Significance of Model using Bootstrap Estimates

All indicators have significant values of bootstrap estimates for rural samples except classroom structure, water availability at school and indicators of teaching support. All structural paths have a significant t value from bootstrap resampling procedure at 5% level except nutrition in rural areas (see Table 2).

**Table No. 2 Showing the Bootstrap T Statistics for structural Path Coefficients KPK (Rural)**

Constructs	Original Sample (O)	Sample Mean (M)	SD	SE	T Statistics ( O/STERR )
<b>F_S -&gt; CS</b>	0.1578	0.1582	0.017	0.017	9.278*
<b>H-&gt; CS</b>	-0.0288	-0.0283	0.0112	0.0112	2.582*
<b>In (a) -&gt; CS</b>	0.5783	0.5777	0.0167	0.0167	34.55*
<b>In (b) -&gt; CS</b>	0.1696	0.1688	0.0134	0.0134	12.62*
<b>N -&gt; CS</b>	-0.0129	-0.0133	0.0103	0.0103	1.2556
<b>S -&gt; CS</b>	0.0221	0.0235	0.0113	0.0113	1.965*
<b>SES -&gt; CS</b>	-0.0274	-0.0279	0.0122	0.0122	2.240*
<b>T -&gt; CS</b>	0.0488	0.0501	0.0118	0.0118	4.135*

\* Significance at 5% level for t-value greater than 1.96.

\*\* Significance at 10% level for t-value greater than 1.65.

## CONCLUSION:

Mechanism of learning progress relies on appropriate interaction of multiple inputs. Study seeks to probe the conceptual framework of learning status in rural areas of KPK, Pakistan.

Quality was confined to cognitive outcomes that are measurable through tests on educational skills. Elements of social, personal, and school environment are evaluated at provincial level, regional level and for both genders.

Health and nutrition of individuals was also included as a vital factor to ensure efficient learning. PLS-SEM approach is adopted to construct the latent indicators and estimate their influence on achievement.

In rural areas, poor health status was more significant than nutrition level of pupils. Class size had a positive sign in rural areas of KPK. In many schools, good results attracted more students that creates illusion of positive association of class size with quality (Glewwe et al., 2011).

## RECOMMENDATIONS:

On broad level, teacher's potential more dynamically influences the results and skills. Teacher's education, subject knowledge and appropriate training are very effective inputs (Glewwe et al., 2011; Barrett et al., 2006). However, in public schools of Pakistan, teachers are equipped with more training, education and experience but have poor performance of students (Andrabi et al., 2007). This requires efficient policies for teacher incentives and reinforcement. Head teacher and administration role is very important for having a closer inspection of poor teaching.

Policies for child health need improvement to attain better skills particularly at village level, where kids are more frequently immunized against diseases. Nutrition is never included in national educational policies. It is one of very vital source for performance thus, needs to probe in detail for practical steps.

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## EFFECTS OF TRANSFORMATIONAL LEADERSHIP ON EMPLOYEE CREATIVITY: A CASE STUDY OF FINANCIAL AND TELECOM SECTORS IN ISLAMABAD

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### ABSTRACT

Although from the past two decades, lot of research work has been done on leadership styles, yet it needs further exploration as realized that organizations need superior leadership qualities which ultimately leads employees to think creatively. In this study, direct effect of leadership styles, transformational leadership and transactional leadership on employee creativity was examined. These direct effects show a significant relationship among these two leadership styles and employee creativity, in line with earlier studies.

**Keywords:** Transformational Leadership, Transactional Leadership, Employees Creativity.

### INTRODUCTION:

Creativity defined as introducing new working approaches that are useful, make effective use of optimum resources so that best out of best outcome could be achieved (Amabile, 1996). Evidence clearly demonstrated that employee creativity has made a visible contribution towards organizational success (Gumusluoglu and Ilsev, 2009). Transformational leaders use individual consideration for their followers to understand each individual by being mentor and giving them proper attention whenever they needed (Boerner, 2013). In Pakistan, banks and telecom industry are growing rapidly, since last 10- 15 years. Only cellular companies of Pakistan have achieved immense success since last few years. About five years ago, cellular mobile company's market share was around 40 percent, but currently this market share is around 65 percent with the introduction of 3G and 4G technology last year. Previously cellular subscribers were spending 65 million per annum for using these services while currently it is around 112 million [Economic Survey of Pakistan (2014)].

Previous researches carried out in artificial environment where respondents were trained employees of the organization. This artificial setup hindered actual response and such results could not be generalized widely. This study aims to explore the effects of transformational viz a viz transactional leadership on employee creativity in corporate sector of Pakistan. Moreover, it will also help out policy makers to formulate policies for producing transformational leadership.

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Following the objectives, this study formulated the following working hypotheses. (1) Transformational leadership is positively related to employee creativity. (2) Transactional leadership is positively related to employee creativity. (3) The effect of transformational leadership is greater than that of transactional leadership on employee creativity.

#### **MATERIAL AND METHODS:**

This study being explanatory type, in which leadership effect was examined on employee creativity. Data is collected through survey, adapted from various studies, with Cronbach alpha greater than 0.70. All responses were measured using 5 point likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). To measure leadership as per methodology detailed by Avolio and Jung (1999), multifactor leadership questionnaire (MLQ Form 5X) devised and used to measure transformational and transactional leadership styles. This MLQ tool comprised each dimension of leadership including four items and labeled on 5 point Likert scale.

Transformational leadership questionnaire used total 16 items, four for each item to measure individually, as per MLQ 5X. First of all, four items adapted for intellectual stimulation from (Terry, 2013). Similarly, four items, adapted for individualized consideration from (Vet, 2014), for inspirational motivation (Shia, 1998) and for idealized influence (Satpathy, 2008). Just like transformational leadership, transactional leadership questionnaire used total 16 items, four for each item to measure it individually, as per MLQ 5X. First of all, four items adapted for contingent rewards from (Tetrault, 1991). Similarly, four items adapted for active management from (Brown, 2003), for passive management (Kynga, 2006) and for laissez faire (Schriesheim, 2008). Employee creativity questionnaire uses total 10 items, five for qualitative and five for quantitative dimension. Five items adapted for qualitative creativity from Anderson and Burckhardt (2003) with 0.77@ and five items adapted for quantitative creativity from Muijen (1999) with 0.76@.

The main concern of this research had been to focus on rapidly growing sectors where employees needed to be maximum creative so that such firms could remain competitive. Population for this study is telecom industry, including cellular companies and other internet provider companies like Nayatel telecom.



Moreover, financial institutions included were Waseela bank and Bank Alflah. The sampling procedure used in this study is convenience sampling strategy. Unit of analysis for this research work being employees working on different positions in telecom and financial sectors. The first author contacted them via personal contacts and through other sibling's references for filling up the questionnaire. Statistical tests were applied using SPSS 20 version.

## RESULTS:

### *Descriptive statistics*

Mean value for transformational leadership (TFL) was 3.46 with standard deviation 0.73. Minimum value of TFL is 1.75 and maximum value was 4.38. Similarly, mean value of transactional leadership (TRL) was 3.43 with minimum value 1.81 and maximum value 4.44 and standard deviation 0.70. Finally, mean value of dependent variable, Employee Creativity (EC), was 3.36 with standard deviation 0.72 and having minimum value 1.40 and maximum value 4.60 respectively as presented in table No.1.

**Table No. 1 Showing Descriptive Statistics**

Variables	N	Minimum	Maximum	Mean	Std. Deviation
TFL	170	1.75	4.38	3.46	0.73
TRL	170	1.81	4.44	3.43	0.70
EC	170	1.40	4.60	3.36	0.72

Source: Calculated by authors.

### *Reliability test*

The value of Cronbach alpha greater than 0.70, revealed that all items in the questionnaire were consistent and reliable as a group. Cronbach alpha for TFL was 0.867 representing highly consistent responded, achieved. TFL had total 16 items, four questions of each dimension. Similarly Cronbach alpha for TRL was 0.841 which was good too (it had) total 16 items like TFL). Each dimension of leadership included 4 questions and this tool was named as multifactor leadership questionnaire. Finally the dependent variable of EC was 0.753 Cronbach alpha and have 10 items to measure. The results, thus obtained have been presented in table 2 below.

**Table No. 2 Showing Reliability Test**

Variables	Cronbach's Alpha	N of items
TFL	0.867	16
TRL	0.841	16
EC	0.753	10

Source: Calculated by authors

### Correlation Analysis

Correlation measured the degree of association and its direction (positive or negative) between two variables. The TFL was positively associated with EC having correlation coefficient of 0.431. The correlation coefficient between TFL and TRL was 0.397. Finally, correlation coefficient between TRL and EC value as 0.360 being less than between TFL and EC. Hence, it can be guessed that TFL has more effective for EC than that of TRL. However, to prove this phenomenon one has to conduct regression analysis given below.

**Table No.3 Correlation Matrix between Different Variables**

	TFL	TRL	EC
TFL	1.000		
TRL	0.397**	1.000	
EC	0.431**	0.360**	1.00

Source: Calculated by author.

\*\* Correlation is significant at the 0.01 level (2-tailed)

### Regression Analysis

Regression analysis was used to measure the change in dependent variable due to independent variable. The main objective of this study was to measure and compare the impacts of Transformational leadership and transactional leadership (independent variables) on employee creativity (dependent variable). The coefficient  $\beta_1$  of TFL was 0.424 meant that 1 unit change in TFL cause 0.424 unit change in EC. Moreover,  $\beta_1$  was significant, as the t-value was greater than 2 (7.84). Similarly  $\beta_2$  coefficient of TRL was 0.371 having t-value greater than 2 (5.01). However, R square value was small i.e. 0.181, which meant that change in employee creativity due to TFL and TRL was 18 percent.

$$EC = \beta_0 + \beta_1(TFL) + \beta_2(TRL) + \mu$$

**Table No. 5 Showing Results of Regression Analysis**

	$\beta$	Std. Error	T	P
$\beta_0$	1.896	0.242	7.842	0.000
$\beta_1$	0.424	0.069	6.184	0.000
$\beta_2$	0.371	0.074	5.009	0.000

Source: Analyzed and calculated by author.

Note:  $N = 170$ , dependent variable = employee creativity, R square = 0.181, Adjusted R square = 0.181, F-value = 38.246,  $p = 0.000$

From the results of above correlation and regression analyses, hypotheses (1) and (2) are proved to be true that there is a significant

positive relationship between leadership (transformational and transactional) and employee creativity. However, larger magnitude of  $\beta_1$  than that of  $\beta_2$  shows that transformational leadership is more effective for bringing creativity in employees than that of transactional leadership, hence proving hypothesis (3) of this study as true.

## **CONCLUSION AND RECOMMENDATIONS:**

### **CONCLUSION:**

In this study, the effect of leadership styles, transformational and transactional, on employee creativity has been examined. The significant positive relationships are found among these two leadership styles and employee creativity in case of financial institutions (banks) and telecom industry of Pakistan. This is in line with earlier studies (Shah and Ali, 2012) (Kahai, Sosik, and Avolio, 2003) (Boerne, 2013) (Bosiok, Sad, and Serbia, 2013) (Hermann and Felfe, 2013). Moreover, transformational leadership has better positive effects on employee creativity as compared to transactional leadership in case of financial institutions (banks) and telecom industry of Pakistan.

### **RECOMMENDATIONS:**

This study has two major managerial implications as suggested by the results discussed above.

- Presence of leadership for employees' creativity should be emphasized in any case (transformational or transactional). It is in line with the statement of rightly guided caliph Hazrat Ali (RTA), that a nation with a head is always better than that of without head.
- Government and private sectors should strive for bringing more transformational leadership for their institutions than that of transactional leadership to improve the sense of creativity in their employees.

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## EFFECTS OF SOCIO-ECONOMIC FACTORS AND NUTRITION ON COGNITIVE SKILLS: AN EXPLORATORY STUDY ON RURAL AREAS OF PUNJAB PROVINCE

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### ABSTRACT

Knowledge profiles are strikingly poor in Pakistan particularly of primary pupils. Severe challenges of learning quality and access gives urgency to serious concerns. Current study closely investigated the skill evolution in the learning process at individual level. It examined the role of explicit factors like socioeconomic, nutrition, health and family inputs in the educational process. For measurement of nutrition status, Body Mass Index (BMI) was estimated given the age of individuals. Since education is a complex multifaceted process, a number of input variables was explored for their impact and consistency. Study sought to identify the learning gaps at national, regional and gender levels through Partial Least Squares (PLS) approach of Structural Equation Modelling (SEM). Parental literacy, age, IQ, good health and nutrition positively improved learning capacities. Whereas, school distance, poor living conditions, lack of sanitation and other facilities reduced the achievement scores. Findings of the study indicated the need to take initiatives for marginalized, females, rural and poor individuals in particular. Thus, study brings forth the need to include background characteristics of students and development of educational plans in consideration of gaps in various segments of economy, of the country.

**Key Words:** Body Mass Index (BMI), PLS- SEM, Discriminate Validity, Bootstrap t-Statistics.

### INTRODUCTION:

Educational investment by global development agencies and many developing economies have consistently focused on equal access to education in terms of enrolment and grade completion, in order to attain economic welfare. A number of countries chased 100% literacy almost successfully but momentum of learning quality has not been kept during whole process (Glewwe et al., 2011; UNESCO, 2014). Completing levels of education and reducing dropouts has been conflicted with quality of education. Economies such as Mexico, Ghana and Sri Lanka despite being very close to achieve universal primary education, failed to train students in essentials of literacy and numeracy, even after the completion of primary schooling. Thus, quality of education was emphasized to be the central element of every education plan (Filmer et al., 2006; Glewwe, 2005).

In Pakistan, conventionally debate on educational outcomes/achievements discussed monetary contribution of quality and cognitive skills (Nasir and Nazli, 2000; Behrman et al., 2008; Kingdon and Söderbom, 2007; Aslam et al., 2009; 2012). Quality perspective in terms of learning gap came into notice after 1990s when share of private sector in school education increased many-folds. Large

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disparity in students' resulted, following that revolution, required to concentrate its underlying reasons.

In this context, extensive evaluation has been for school administration's role. Skill acquisition is claimed to vary with school management i.e. public, private, NGO and madrassa etc. In spite of employing more educated and well trained teachers in public schools, students remained far behind in basic subjects. Poor infrastructure, environment and lack of physical facilities in schools remain likely to be significant causes. Schools under control of private and NGO administration have better facilities and practice good instructional techniques being claimed as tools to embed better education skills in students (Das et al., 2006; Arif and Saqib, 2003; Andrabi et al., 2007).

Studies in that era did not pay much attention to the factors and environment out of school. Later on, estimation of education production function by Arif and Saqib (2003) incorporated the role of SES to determine cognitive skills. Parental literacy and home support was found to enhance test scores. Studies carried out in KPK districts also supported positive impact of family back ground on secondary school scores (Ahmed and Khan, 2012; Shah et al., 2012; Ghazi et al., 2013) who concluded that household income was one of the most relevant family variable which improved educational expenditure, per child, and facilitated access to other supportive materials, namely transport facilities and better nutrition. Parental literacy (father's occupation and dwelling environment) also improved performance of students. Education of parents was found to be a more pertinent factor in Pakistan than father's profession. Parental support in study and learning aids, like computer and internet access at home were regarded much imperative for better educational achievement as deliberated by Farooq et al., (2011) and Shah et al., (2012).

Schooling outcomes also vary for gender and across regions, in rural and urban areas of Pakistan. Family background variables originate these differentials along with schools' availability, quality and household schooling demand (Alderman et al., 1996; Behrman et al., 2008). But these studies have measured socio-economic statuses only by parental education and family income that doesn't completely depict the family inputs. Andrabi et al., (2007) viewed that

social status, parental involvement and household wealth were very important and could not be ignored to assess education gaps. They concluded parental literacy as a matter of school choice for their children.

#### **MATERIAL AND METHODS:**

Sampling structure, universal, size of sample and choice of sample units was well developed. Target population consisted of rural areas of Punjab Province divided in (i) Northern, (ii) Central and (iii) Southern regions. Districts of Chakwal and Attock from northern Punjab; Kasur and Sargodha from central Punjab and Khanewal and Rahim Yar Khan from southern Punjab were selected.

Researchers gathered the relevant information covering 1100 households and 8752 individuals. Data generated by survey was reliable for national level policy suggestions, as it represented most populous province of Pakistan. Survey was conducted following the sampling frame of the Pakistan Bureau of Statistics, developed in the year 2003. Rural sampling was carried out for a list of villages published, after population census of 1998.

#### **Description of Variables**

Manifest variables for both endogenous and exogenous indicators was constructed by their relevant observed variables. Cognitive skills was measured as a function of multiple variables of education function. Latent construct for cognitive skills was composed of literacy and numeracy test scores, of five categories i.e. (a) short literacy test, (b) long literacy test, (c) short math test, (d) long math test and (e) English test.

Exogenous variables were (i) socioeconomic background, (ii) nutrition and health status, (iii) individual attributes, (iv) physical facilities at school and (v) teaching support. Here, socioeconomic background comprised of 1) monthly expenditure of household, 2) major source of livelihood, 3) type of dwelling, 4) ownership of dwelling, 5) availability and source of drinking water, 6) facility of toilet at home, 7) electricity, 8) source of energy, 9) occupied share of dwelling, 10) computer facility at home, 11) listening to radio, 12) watching TV, 13) reading newspaper, 14) father's education, 15) mother's education, 16) maternal grand-father education, 17) number of siblings (as a proxy to family size), 18) completed education of closest sibling in age (either brother or sister), and 19) ever done any part time work during school.

Nutrition and health status was constructed by four variables namely, a) illness in past one year, b) accident or injury in past one month, c) disability (in hearing, listening, seeing, speaking, walking and personal care) and d) Body Mass Index (BMI) (Ivanovic, 2004). BMI is used to measure the nutrition status and computed according to World Health Organization (WHO) standards (2000) and Bhatti et al, (2011).

#### **Estimation Process**

- i. Partial Least Square Model was estimated as joint interaction of measurement and inner models with their corresponding body weights.
- ii. Standardized values of latent variables were estimated through a linear function composed of respective manifest variables independent of the type of outer model.
- iii. Weight relations were estimated for either direction of measurement model.

#### **RESULTS AND DISCUSSION:**

- i. Model fulfilled convergence requirement by stopping after four iterations.
- ii. Age puts a negative impact on learning contributing 50% of variation in latent construct.
- iii. For higher age groups there was a decline in score due to many reasons and will be discussed in further detail.
- iv. Individual's inherent ability was measured by a standard IQ test, levels of education and training represent a positive strong impact on performance for rural individuals.
- v. Nutrition being negatively associated with learning, indicated a negative impact of obesity on performance. However, its magnitude was not very large to exhibit a significant contribution. State of poor health is also a barrier to accelerate the educational process besides having a lower magnitude, its contribution was not negligible in quality of performance.
- vi. Distance from home to school being quite a strong variable with 50% of explained variation, had a negative influence on learning besides school attendance.



- vii. Toilet and furniture facility were other most relevant variables having positive role to explain learning differences by school physical environment.
- viii. Drinking water availability along with building infrastructure has least magnitude in this regard.
- ix. School fee and school type had moderate positive impact on students' performance in rural areas.
- x. Class size is found to have apposite relation with learning and its loading coefficient higher in latent variable.
- xi. Separate teacher at primary school and use of black board for instruction was also positively linked indicators.
- xii. Medium of instruction had a negative association indicating poor scores due to the lack of exposure to medium used in tests for literacy and numeracy.
- xiii. Expenditure of household was found to have a negative relation with performance.
- xiv. Simultaneously, residential ownership and better infrastructure was a positive factor.
- xv. Water and sanitation facilities proved also positive elements for educational gain while sanitation had highest magnitude in this context.
- xvi. Father's education was recorded about 20% higher than mother's literacy to improve performance in rural households.
- xvii. Sibling's education was second most important variable with more impact of sister's literacy than brothers' schooling.
- xviii. Exposure to media had, however, a negative influence on school achievement in rural areas.
- xix. Finally the family size (variable) with a negative association had least size to explain the individual scores.

### **Measurement Model Evaluation**

Outer model assessment involved reliability of indicators and latent variables. All tests, namely, a) IQ, b) educational attainment, c) BMI and d) immunization exhibited a very good level of indicator reliability above 0.7. Furniture

and toilet facility at school, class size, dwelling, sanitation at home, newspaper reading, father’s literacy and sister’s literacy all had good reliability level to compose the latent variable and remained between 0.4 to 0.7. Training, age, accidents, school distance, electricity at home, medium of instruction, separate teacher for each class, maternal literacy, maternal grand-father literacy and brother’s education level were sufficiently reliable with a reliability value above 0.2 as presented in Table 1 below:

**Table No. 1 Showing the Discriminate Validity of Constructs Punjab (Rural)**

Const ructs	CS	F_S	H	In (a)	In (b)	N	S	SES	T	SQRT (AVE)
CS	1									0.882
F_S	0.612	1								0.495
H	0.227	0.258	1							0.752
In (a)	0.768	0.413	0.245	1						0.789
In (b)	0.476	0.389	0.371	0.417	1					0.738
N	-0.013	0.043	-0.146	0.003	-0.106	1				1.000
S	0.325	0.356	0.171	0.334	0.203	-0.005	1			0.458
SES	-0.358	-0.438	-0.100	-0.389	-0.169	-0.148	-0.315	1		0.502
T	0.170	0.115	0.051	0.137	0.091	0.025	0.311	-0.119	1	0.533

CS – Cognitive Skill

H – Health

In (b) – Individual characteristics (b)

S – School facilities

T – Teaching support

F\_S – Family Support in learning

In (a) – Individual characteristics (a)

N – Nutrition

SES –Socio-Economic Status

Source: Authors' calculation.

Discriminant validity was a measure to represent the relevance of indicators with their corresponding constructs. Cross loadings of all variables indicates their relevance with their own constructs. Further correlation matrix of latent variables along with square root of AVE was enough to witness the fulfillment of discriminant validity of measurement model. Inner model was evaluated by its good fit presented through R-square having a value of 0.64 and presented a substantial effect of structural model constructs for explaining the endogenous latent variable. Goodness of fit was calculated by commonality and R-square value which appeared 0.71, that represented the strength of model fit.

### Significance of Model using Bootstrap Estimates

All indicators had significant values of bootstrap estimates, for rural sample except classroom structure, water availability at school and indicators of teaching support. All structural paths had a significant t value from bootstrap resampling procedure at 5%level except, nutrition, in rural areas as presented in Table 2.

**Table 2 Showing the Bootstrap t Statistics for structural Path Coefficients Punjab (Rural)**

Constructs	Original Sample (O)	Sample Mean (M)	SD	SE	T Statistics ( O/STERR )
F_S -> CS	0.1578	0.1582	0.017	0.017	9.278*
H-> CS	-0.0288	-0.0283	0.0112	0.0112	2.582*
In (a) -> CS	0.5783	0.5777	0.0167	0.0167	34.55*
In (b) -> CS	0.1696	0.1688	0.0134	0.0134	12.62*
N -> CS	-0.0129	-0.0133	0.0103	0.0103	1.2556
S -> CS	0.0221	0.0235	0.0113	0.0113	1.965*
SES -> CS	-0.0274	-0.0279	0.0122	0.0122	2.240*
T -> CS	0.0488	0.0501	0.0118	0.0118	4.135*

\* Significance at 5% level for t-value greater than 1.96.

\*\* Significance at 10% level for t-value greater than 1.65.

### CONCLUSION AND RECOMMENDATIONS:

1. Quality of education of children was confined to cognitive outcomes measurable through tests on educational skills.
2. Elements of social, personal and school environment were evaluated at provincial and regional level and for both gender which evidenced positive results.
3. Health and nutrition of individual student also included as a vital factor to ensure efficient learning.
4. Data of ReCoup survey used from the year 2006-07, to fulfill the objectives of research and achieved the goals.
5. PLS-SEM approach adopted to construct the latent indicators and estimated their influence on achievement.
6. In rural areas, poor health status was more significant than nutrition level of pupils. However, distance albeit being insignificant was negative and of rather larger size.
7. Water availability at school was positive but not significant in rural areas.
8. Classroom building, medium and blackboard use were not significant in rural areas. This situation indicated lack of efficiency in teaching process to be major factor for learning deprivation.
9. Class size had a positive association with learning in rural areas.
10. In many schools good results attracted more students which created positive association of class size with quality.

### RECOMMENDATIONS:

1. In rural areas of Pakistan, quality crisis was beyond gaps; students do not possess efficiency in most of basic skills which needs attention.
2. Physical facilities, (furniture and better infrastructure) were partial elements for learning outcomes. On broader level, teacher's potential more dynamically influenced the results and skills.
3. Policies for child health need improvement to attain better skills particularly at village level, are needed where children are more frequently immunized against diseases.
4. Nutrition also needs to be included in national educational policies.

5. Being one of the very vital sources for performance, thus, needs to be probed in detail, for practical steps and multidimensional investigation be continued, on similar parameter in various parts of the country.

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## IMPACT OF EMPLOYEE EMPOWERMENT ON JOB PERFORMANCE IN PUBLIC SECTOR TELECOM ORGANIZATIONS OF PAKISTAN: MEDIATING ROLE OF ORGANIZATIONAL COMMITMENT

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### ABSTRACT

This research work attempts to empirically verify the shape of employee empowerment and job performance through organizational commitment in the public sector telecom organizations of Pakistan. It developed a conceptual model that included reinforce drivers of human resource practices such as organizational commitment as acknowledged in the literature. The research provides a set of measurement scales to operationalize constructs and to empirically verify their interaction for the execution of successful job performance considering the role of employee empowerment. This study is important in understanding relevant organizational commitment factor which leads to empowerment of employees that enhances job performance of employees by increasing loyalty and withholding of employees in organizations for a longer term. Moreover, this study intends to understand human resource setting and to make it more effective with respect to conditions of organizational commitment in the public sector telecom firms of Pakistan. Data was collected from the administrative community related to public sector telecom companies within Islamabad, Karachi and Lahore. The theoretical model is developed by a survey of 162 managers representing public sector organizations i.e. PTCL and Ufone. The research found that there was no mediation effect of organizational commitment for the correlation between the employee empowerment and job performance.

**Keywords:** Employee Empowerment, Organizational Commitment, Job Performance.

### INTRODUCTION:

Employee empowerment leads to the self-actualization of the employees, which ultimately fulfill their wants and desires. Public sector telecom organizations of Pakistan have the repute that they lack organizational commitment and looking into that perspective, this study as carried out may be very beneficial for both the employees and telecommunication organizations.

The objective of this study was to investigate the influence of organizational commitment as a mediator between employees' empowerment and their performance i.e. whether employee empowerment was affected through organizational commitment or not and how the job performance was increased or decreased afterwards. Selected questionnaire was distributed among managers of different public sector telecommunication organizations i.e. PTCL and Ufone. It was necessary, to investigate how employee perceptions work through organizational commitment and job performance of affected employees' via

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employee empowerment.

According to Dainty et al. (2002) employee empowerment has different definitions for different fields. Many studies have concluded that empowerment is not a term used for trust but for strong authority. Authority comes from control and it helps in making strong decisions about the organization. Empowerment comes from control and it effects the organization in total context, Spreitzer and Doneson, (2005). Organizational commitment has been the focal point of researchers and studies have been done on it, to understand the phenomena [Gutierrez et al. (2012); Meyer et al. (2012)]. First one is the affective commitment. This type of commitment is the sentimental relation, an employee has, with its organization. The employee feels being related to the organization in an emotional way and relates the organization to them with a sense of emotional attachment [Meyer et al. (2013)].

This study was based upon following working Hypotheses:-

- H<sub>1</sub>: Job performance is positively related to employee empowerment.
- H<sub>2</sub>: Organizational commitment is positively related to employee empowerment.
- H<sub>3</sub>: Job performance is positively related to organizational commitment.
- H<sub>4</sub>: Organizational commitment mediates the relationship between job performance and employee empowerment.

#### **MATERIAL AND METHODS:**

Total 49 Items were carried out in the questionnaire for the measurement of the constructs which were adopted from the literature of the human resource management. Unit of analysis was profiles of individuals were sampled as standard technique for survey. No groups or subgroups were touched in this survey but only individuals as a unit. Purposive sampling (non-probability sampling) was used for the research design. Instruments were distributed online as well as traditionally to save time and less hassle however live interviews were lacked but due to the nature of respondents. It was a one-time collection of results through questions from respondents and is a cross-sectional study. Sample Size of 200 responses were recorded through online distribution of questionnaire to people related to Public Telecom Sector out of which 162 were found to be useful for conducting different analyses in SPSS Version 17.

The given statistics have been analyzed on the basis of questionnaire survey in

which employee empowerment with four items, organizational commitment with nine items, job performance with five items. A pilot test of 35 respondents was done and it was found that all the alpha values were above 0.70. The research was carried for the full sample size afterwards. The results have been found by analyzing collected data with the help of Descriptive Analysis, Reliability Analysis (Cronbach`s Alpha), Correlation Analysis and Regression Analysis.

## RESULTS:

**Table 1: Showing Descriptive Analysis (Normality of Data)**

S.No	Variable	N	Mean	Std. Deviation	Variance	Skewness	Kurtosis
1	EE <sup>1</sup>	162	2.455	.6685	.447	.765	.288
2	OC <sup>2</sup>	162	2.582	.5542	.307	.599	.254
3	JP <sup>3</sup>	162	2.449	.4620	.213	.573	1.884

Source: Thesis Research data of first author.

In table 1, the skewness values of all three variables are less than 1 (the excellent value for normality of a given data), showing the existence of normal distribution in case of our all three variables. As far as peakedness or the flatness of the distribution is concerned kurtosis values for EE and OC are again less than 1, hence indicating that there exist normal distribution in the said variables. However, kurtosis value for JP is greater than 1, showing the said distribution is little more peaked than that of the normal one.

### Reliability Analysis

The value of alpha is the proportionate part of variability in responses to the survey as a result of different respondents. There were 49 items included in this survey questionnaire. In the process of getting value of Cronbach alpha greater than 0.70, 10 items have been removed. The result of remaining 39 items is shown in table 2. The null hypothesis of alpha is  $H_0$  where variances of all items are equal, the null hypothesis once is significantly rejected then the coefficient of alpha which comes more than and equal to 0.70 is reported for the items is true estimate of lower bound reliability. The analysis shows that the values of alpha are above 0.70, which prove them reliable and consistent.

**Table No. 2 Showing Reliability Statistics**

<sup>1</sup> Employee Empowerment (EE)

<sup>2</sup> Organizational Commitment (OC)

<sup>3</sup> Job Performance (JP)

Variable	N	Cronbach Alpha
Employee Empowerment	12	0.89
Job Performance	13	0.74
Organizational Commitment	14	0.83

Source: Thesis Research data of the first author.

### Correlation Analysis

The correlation analysis was used to check the association and direction of relationship between two variables. In table 3, correlation coefficients for job performance, organizational commitment and employee empowerment are given. The correlation coefficients between EE and OC has relatively larger value equal to 0.831. While between EE and JP, and OC and JP these coefficient values are 0.501 and 0.504 respectively, showing their moderate level of correlations. Moreover, all above mentioned correlations are significant having values of  $p = 0.00$ .

**Table No. 3 Showing Correlation Matrix**

		EE	OC	JP
EE	Pearson Correlation	1.00		
	Sig. (2-tailed)			
	N			
OC	Pearson Correlation	<b>0.831**</b>	1.00	
	Sig. (2-tailed)	0.00		
	N	162		
JP	Pearson Correlation	<b>0.501**</b>	<b>0.504**</b>	1.00
	Sig. (2-tailed)	0.00	0.00	
	N	162	162	

Source: Thesis Research data of the first author.

For checking mediation effect of organizational commitment between independent variable (EE) and dependent variable (JP) the regression analysis is conducted as under.

### Regression Analysis

For regression analysis and to check the dependences, the researcher divided the model into four regression equations and analysis was done, step by step according to the methodology narrated by Baron and Kenny (1986).



Table No. 4 Showing Mediated Regression for Organizational Commitment

Variables		<i>B</i>	<i>T</i>	<i>p-value</i>	<i>R</i> <sup>2</sup>	<i>F-stat</i>	<i>F-sig</i>	<i>Durbin-Watson</i>
<b>STEP 1</b>								
EE →	JP	0.50**	6.67	0.00	0.21	44.59	0.00	2.21
<b>STEP 2</b>								
EE →	OC	0.83**	18.08	0.00	0.68	356.49	0.00	1.78
<b>STEP 3</b>								
OC →	JP	0.50**	6.32	0.00	0.19	39.95	0.00	2.10
<b>STEP 4</b>								
EE →	JP	0.30**	2.46	0.01			0.00	
OC →	JP	0.20**	<b>1.52</b>	<b>0.12</b>	0.22	23.64	0.00	2.19

Resource: Analyzed and calculated by authors

\*\*Correlation is significant at the 0.01 level (2-tailed).

There are four steps essential for establishing the significant full mediation effect. First, there was a significant association between predictor and dependent variable. Secondly, the predictor is seen to be perfectly associated with that of the mediator. Thirdly, the mediator is seen to be perfectly associated with that of the dependent variable, controlling for predictor. Moreover at fourth step, there was a partial mediation effect, While Baron and Kenny (1986) suggest that when predictor (independent) and outcome (dependent) are significantly weaker partial mediation takes place while in non-significantly a full mediation is seen. The multiple regressions are used for mediation analysis purpose.

In step 4, the value of beta is 0.30 and 0.20 which are positive but of small magnitudes. The results do not support the hypothesis H<sub>4</sub> of the study as the  $t = 1.52$ ,  $P = 0.12$ . Moreover, values of  $R^2$ , in steps 1, 3 and 4 are very small showing the weak dependence of job performance on employee empowerment and organizational commitment. Hence, the organizational commitment and job performance are not significantly related with each other. Consequently, contradicting the hypothesis 4 of the study, organizational commitment does not mediate the relationship between employee empowerment (independent variable) and job performance (dependent variable) significantly, as detailed.

## CONCLUSION AND RECOMMENDATIONS:

### CONCLUSION:

Many previous studies showed that organizational commitment had positive impacts on the employee empowerment and job performance in an organization. As far as positive direction of the effects is concerned, this study also supports these findings. But the significant effects of the said variables are not seen in this study. Moreover, this

study concludes that organizational commitment has no significant effect as a mediator between employee empowerment and job performance in the public sector telecommunication organizations of Pakistan.

After going through the extensive research analysis and review of literature, it is recommended that employee empowerment and organizational commitment are important factors of job performance. Organizations should promote values and policies which need to be communicated among employees. These activities lead to employee empowerment toward their jobs and help them in developing interest in the internal matters of the organization thus boosting their motivation levels and intending to build empowerment. A systematic study is however recommended be carried out to extract further elements of employee empowerment individually and collectively, (in both public and private sector telecommunication organizations). Thus, an attempt to promote organizational commitment in the employees leads to positive effects on their job performance.

#### **RECOMMENDATIONS:**

The population for this study has been taken from public sector telecommunication organizations of Pakistan:

- (i) It is recommended for future researchers to be carried out the research by targeting the private sector telecommunication organizations of Pakistan as well.
- (ii) There may exist mediation effect of organizational commitment to boost up the job performance of the employees of private sector. Hence, a comparison between the structure of public and private organizations may become possible. Moreover, this study has used the cross sectional data.
- (iii) Similarly study with longitudinal data may if carried out, will reveal better findings and results and may reveal inherent long run stability.

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## IMPACT OF EMPLOYEE EMPOWERMENT ON JOB PERFORMANCE IN PUBLIC SECTOR TELECOM ORGANIZATIONS OF PAKISTAN: MEDIATING ROLE OF SELF-EFFICACY

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### ABSTRACT

This study aims to establish and empirically verify the configuration of employee empowerment and job performance through self-efficacy in the public sector telecom organizations of Pakistan. The conceptual model of the research included driver of human resource practices such as self-efficacy as identified in the literature. The research provided a set of measurement scales to operationalize constructs and to empirically verify their interplay for the execution of successful job performance considering the role of employee empowerment. This study is significant in understanding relevant self-efficacy factor which lead to empowerment of employees that boosts job performance of employees which needs to be prioritized to increase successful loyalty and retention of employees in organizations for a longer term. This study also aims to understand human resource context and to make it more effective with respect to conditions of self-efficacy in the public sector telecom firms of Pakistan. Instrument adopted from the base paper and synthesized from the work of different authors. Data is collected from the managerial community related to public sector telecom companies in Islamabad, Karachi and Lahore. The conceptual model was developed and tested empirically through a survey of 162 managers representing selected public sector organizations. The research has found a partial mediation effect of self-efficacy between employee empowerment and job performance.

**Keywords:** Employee Empowerment, Job Performance, Self-Efficacy.

### INTRODUCTION:

The concept of employee empowerment is important for an organization where employees work together (as a group) helps to fulfill the needs of employees, their wants and desires as indicated by Allen and Grisaffe (2001). In health psychology, self-efficacy has been holistically developed and extensively applied and perceived as a key mediator in health, behavior change. In educational psychology it is employed to understand human motivation, learning, self-regulation and accomplishment [(Pajares(2005)]. In fact, it is claimed that levels of self-efficacy are measurable and are able to predict particular behavioral outcome. We deliberate by stating that in the light of the objective of this study to investigate the influence of self-efficacy on job performance, while acting as a mediator for employee empowerment. For this questionnaire was distributed among managers of different public sector telecommunication organizations including PTCL and Ufone. It was necessary to investigate how employee perceptions work through organizational commitment as well as self-efficacy of

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affected employees via employee empowerment. Before we do that, it seems appropriate to explain the main variables in the study, in the light of reviewed literature.

Mondros and Wilson (1994) stated that there was no exact definition of employee empowerment as it had a vague meaning and not clearly specified. Moreover, it had different definitions for different fields. However, it has been carried out after further research and studies, as a decision making process under job context. Various studies have concluded that empowerment is not a term used for trust but for strong authority. Authority comes from control and it helps in making strong decisions about the organization. Also, empowerment comes from control which affects the organization in total context [Spreitzer and Doneson, (2005)]. Lee and Koh (2001) argue that it is an internal matter between the employee and the supervisor. Their findings show that it is an attitude and a behavior or a combination of both from which both employees and supervisors can be affected. Hence it is believed that the word empowerment is related to the participation of employees in the decisions with the supervisors at work.

Considering the above, it is inferred that perception and belief is a power, it is a psychological protection and control. It has been justified that empowerment has been an outcome of self-efficacy like a power of motivation is associated with this whole research phenomenon. Afterwards these analysis have been redefined and findings conclude that it is a matter of determination, value, belief and perception. It has been argued that organizations lower down their operation when they are underpaid, or paid less, and they speed up working efficiently when they are being overpaid. Organizational Justice and job satisfaction are important determinants of job performance here exists a relational construct between organizational justice process and employee job performance.

Psychologist Albert Bandura (1997) has defined self-efficacy as a one's belief in one's ability to succeed in specific situation or accomplish a task. It is also referred to as social cognitive theory or social learning history. There are three elements of self-efficacy. These elements are magnitude, strength and generality. Magnitude is perception of a person as the extent to which he can perform a difficult task. Strength is belief of a person regarding the magnitude as strong or

weak. Generality is the extent to which the expectation concluded across situations. Bandura (2004) believes that an employee's feeling about his capabilities influence his perceptions, motivation and performance. Therefore, we hardly see an attempt by people to perform tasks which they assume they are not going to succeed.

For the current study we selected telecom industry of Pakistan. More particularly we have chosen two service providers to see if employee empowerment prevails there or not. We decide to consider only two service providers because of limitation of time and resources. The two selected organizations are PTCL and Ufone. For our sample, we selected lower and middle management staff and managers. Higher management was not considered.

- H<sub>1</sub>: Job performance is positively related to employee empowerment.
- H<sub>2</sub>: Self-efficacy is positively related to employee empowerment.
- H<sub>3</sub>: Job performance is positively related to self-efficacy.
- H<sub>4</sub>: Self-efficacy mediates the relationship between employee empowerment and job performance.

#### MATERIAL AND METHODS:

For this study, survey was conducted on the basis of questionnaire to collect data on various variables, including employee empowerment (with four items), job performance (with five items) and self-efficacy (with five items). A pilot test of 35 respondents was done and it was found that all the alpha values were above (0.70). The research was carried out for the full sample size, afterwards.

#### RESULTS:

Once data collected, were analyzed using various techniques including (i) descriptive statistics, (ii) reliability analysis (Cronbach Alpha), (iii) correlation analysis and (iv) regression analysis. Descriptive statistics is meant for giving information about the distribution of the variables, under consideration. In table 1, the relevant informations about the variables of interest for this study i.e. Employ Empowerment (EE), Self-Efficacy (SE) and Job Performance (JP) are given as under in Table No.1.

**Table No.1 Descriptive Analysis (Normality of Data)**

S.No	Variables	N	Mean	Std. Deviation	Variance	Skewness	Kurtosis
1	EE	162	2.455	0.6685	0.447	0.765	0.288
2	SE	162	2.527	0.4730	0.224	1.135	3.709
3	JP	162	2.449	0.4620	0.213	0.573	1.884

Source: Calculated by authors.

In table 1, the skewness values of all three variables are less than 2 (the acceptable value for normality of given data), showing the existence of normal distribution in case of our all three variables. As far as peaked ness or the flatness of the distribution is concerned, kurtosis values for EE and JP are again less than 2, hence indicating that there exist normal distribution in the said variables. However, kurtosis value for SE is greater than 2, showing the said distribution is more peaked than that of the normal one.

### Reliability Analysis

The value of alpha is the proportionate part of variability in response to the survey (as a result of different respondents). There were 49 items included in this survey questionnaire. In the process of getting value of Cronbach alpha greater than 0.70, 14 items have been removed. The result of remaining 35 items is shown in table 2. The null hypothesis of alpha is  $H_0$ , where variances of all items are equal. The null hypothesis once is significantly rejected then the coefficient of alpha which comes more than and equal to 0.70 is reported for the items is true estimate of lower bound reliability. The analysis shows that the alpha above 0.70 is reliable and consistent.

**Table No.2 Reliability Statistics**

Variable	N	Cronbach Alpha
Employee Empowerment (EE)	12	0.89
Job Performance (JP)	13	0.74
Self-Efficacy (SE)	10	0.71

Source: Calculated by authors.

### Correlation Analysis

The correlation analysis is used to check the magnitude and direction of association between two variables. In table 3, Pearson correlation coefficients, their respective significant P values and number of observations are given for the variables EE, SE and JP. The correlation coefficient between EE and SE is 0.508. While between EE and JP, and between SE and JP these coefficients are 0.501 and 0.504 respectively. Moreover, P value showing that the variables are significantly correlated at 0.01 level. Hence, all three variables under consideration are associated with one another. To show the causal relationship among employment empowerment, job performance and self-efficacy and the mediating role of self-efficacy we proceed towards step wise regression analysis.

**Table No. 3 Showing Correlations**

Statistics	Variables	EE	SE	JP
Pearson Correlation			<b>0.508**</b>	<b>0.501**</b>
Sig. (2-tailed)	EE		0.000	0.000
N			162	162
Pearson Correlation		<b>0.508**</b>		<b>0.504**</b>
Sig. (2-tailed)	SE	0.000		0.000
N		162		162
Pearson Correlation		<b>0.501**</b>	<b>0.504**</b>	
Sig. (2-tailed)	JP	0.000	0.000	
N		162	162	

Source: Calculated by authors.

\*\*Correlation is significant at the 0.01 level (2-tailed).

### Regression Analysis

We conducted the regression analysis step by step and consequently checked the different dependences among said variables and mediating role of self-efficacy, the study divided the model into four regression equations. The results are shown in the following table 4.

**Table No. 4 Mediated Regression for Self-Efficacy**

Variables	B	T	p-value	R <sup>2</sup>	F-stat	F-sig	Durbin-Watson
<b>STEP 1</b>							
EE → JP	0.50**	6.67	0.00	0.21	44.59	0.00	2.21
<b>STEP 2</b>							
EE → SE	0.50**	7.45	0.00	0.25	55.5	0.00	1.88
<b>STEP 3</b>							
SE → JP	0.60**	9.45	0.00	0.35	89.3	0.00	2.04
<b>STEP 4</b>							
EE → JP	0.22**	3.06	0.00			0.00	
SE → JP	0.48**	<b>6.80</b>	<b>0.00</b>	0.39	51.72	0.00	2.16

Source: Analyzed and calculated by authors.

\*\*Correlation is significant at the 0.01 level (2-tailed).

The results support the hypothesis H<sub>4</sub> of the study, as the t = 6.80 and p = 0.00. Therefore the hypothesis is supported. The regression analysis of above table 4 show that the bond between self-efficacy and job performance is positively associated and shows partial mediation relationship among each other. Hence self-efficacy mediates the relationship between job performance and employee empowerment. The value of beta is 0.22 and 0.48 which explains that 1 percent increase in employee empowerment and self-efficacy are associated with 0.22 and 0.48 percent increase in job performance respectively. In other words, job performance, with the inclusion of a unit of mediator self-efficacy increases by 0.48 unit. In the model summary the value of R-square being 0.39 shows that the



predictor employee empowerment and mediator self-efficacy explains 39 % variability in (outcome) dependent variable of job performance.

When conducting and analyzing the results we examine the mediation effect thoroughly which is formulated in hypothesis 4, we followed the procedures of mediational hypothesis analysis. According to this procedure, there are four steps essential for establishing the significant full mediation effect. First, there is a significant association between predictor and dependent variable. Secondly, the predictor is seen to be perfectly associated with that of the mediator. Thirdly, the mediator is seen to be perfectly associated with that of the outcome dependent variable, controlling for predictor.

The results also show that self-efficacy is significantly related to job performance and employee empowerment and partially mediates the relationship between them. The findings of this research are beneficial for the public sector telecommunication organizations of Pakistan as it is evident from the results that most of the employees are not concerned about the fair policies and procedures in our culture, they want practical implications of the policies and that is why distributive justice, which is related with allocation of rewards and benefits shows a positive and significant relationship with employee empowerment and if distributive justice is enhanced in the public sector, it will definitely create empowerment between employees and the organization. At the same time this will motivate the employees to exhibit their performance and output. Once employees feel empowered with the distribution of rewards, performance will automatically increase, making the overall atmosphere of the organization attractive and productive one.

## **CONCLUSION AND RECOMMENDATIONS:**

### **CONCLUSION:**

We concluded that self-efficacy plays an important role to increase employee empowerment and job performance. If self-efficacy will be carried out in a perfect religious and legal manner in the near future its effects as a mediator may be multifaceted. Organizations should promote values and policies and need to be communicated among employees. These activities lead to Employee Empowerment towards the job and help them in developing interest in the internal matters of the organization boosting their motivation levels and intent to build

empowerment. A systematic study may further be carried out to extract remaining elements of Employee Empowerment, individually and collectively, on both public and private sector telecommunication organizations. An attempt to promote organizational and employee relationship education and carrying out research in the field of management can be a next step.

#### **RECOMMENDATIONS:**

- The Population for this study has been taken from public sector telecommunication organizations of Pakistan, it is recommended to carry out research in this field by targeting the private sector telecommunication organizations of Pakistan. In this way a thorough comparison can be made between public and private sector employees of Pakistan.
- Since this study is cross sectional one, a longitudinal study may reveal better findings and results than that of this study.
- Government should adopt such policy measures which increase the quality of self-efficacy in the employees of public as well as private sectors of Pakistan.

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## SEROPREVALENCE OF HUMAN BRUCELLOSIS IN KOHAT REGION, KHYBER PAKHTUNKHWA, PAKISTAN

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### ABSTRACT

This study was carried out at "Veterinary Research and Disease Investigation Centre Kohat from January, 2014 to December, 2014. Serum was collected from a total of 106 patients referred by KDA hospital Kohat. Total positive and negative as well as male to female distribution of Brucellosis was observed during this study. Total of 21 samples out of 106 samples (19.81%) were found reactive during this study. As a as male to female distribution of Brucellosis is concerned, blood samples from males were found 10.86% (05 samples out of 46) seropositive and from females 26.66% samples (16 out of 60 samples) were found positive respectively. The paper ends with recommendation of awareness on Brucellosis disease in human being

**Key Words:** Sero prevalence, brucellosis, zoonotic.

### INTRODUCTION:

Brucellosis is one of the major bacterial zoonosis, caused by intracellular bacteria of the genus *Brucella*, with most pathogenic species including *Brucella Melitensis*, *Brucella Abortus* and *Brucella Suis*(WHO, 1997). Livestock is contributing a major part in the economy of Pakistan. Livestock is considered as a source of employment generation for poor community at rural areas thereby helping to reduce income variability (Economic Survey of Pakistan, 2012-13). Beside the benefits and advantages of livestock, it is also offering some health problems to those people who are directly or indirectly engaged with livestock and livestock products in the form of zoonotic diseases. Some of the major health problems, man is facing from livestock, include Brucellosis, Tuberculosis and Anthrax, including helminthic infestations.

Brucellosis is more profound in the developing countries due to lack of effective public health measures, improper domestic animal health programs and inappropriate diagnostic facilities (Krićic-Dautović, et al., 2006). *Brucellae* infect a wide range of domestic animals including goats, cattle, camels, sheep and pigs (Moreno and Moreno, 2006). *Brucella* is a major cause of zoonotic infections and is considered to be a potential bioterrorist (Anonymous, 2000), therefore is of serious public health importance, particularly in low-income countries where intervention strategies are almost non-existent (Greenfield, et al., 2002). Humans

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are usually infected through consumption of non-pasteurized dairy products, unhygienic meat, direct contact with infected animals, contact with aborted fetus, vaginal and uterine secretions via skin abrasion, mucus membranes and infected aerosols through inhalation (OIE, 2009; Hamidullah et al., 2014; Premalatha and Prakash, 2015). Brucellosis in human beings is a debilitating disease characterized by persistent waves of fever, headache, malaise, back pain, myalgia, generalized aches and finally abortion in pregnant women as well as fever, orchitis associated with severe pain in male. Beside the above mentioned symptoms splenomegaly, hepatomegaly, coughing and pleuritic chest pain are also sometime seen in human beings (Zribi, et al., 2009). The present study was carried out with the aim to point out the recent sero-prevalence of human brucellosis in Kohat region and to check the influence of gender in order to help out the poor community regarding their health issues to take precautionary measures while handling their animals and animal products.

#### **MATERIAL AND METHODS:**

The present study was carried out at "Veterinary Research and Disease Investigation Centre (VRDIC) Kohat, Khyber Pakhtunkhwa, from January 2014 to December 2014 for a period of twelve months.

A total of 106 blood samples, from patients referred by KDA Hospital Kohat (Blood up to 3-5ml) collected in sterile disposable syringe from each patient. Serum was extracted from all the blood samples, at the laboratory (PRDIC) through centrifugation of samples @5000rpm, for 4-5 minutes. Serum was separated from the blood and was subjected to Rose Bengal Plate Test (RBPT) and Serum Agglutination Test (SAT), following the procedures of Premalatha and Prakash, (2015) and Hussain, et al., (2014) respectively. Antigens of *Brucella abortus* and *Brucella melitensis* of 'Laboratory Diagnostics Co., INC Morganville' were used in the study.

#### **Rose Bengal Plate Test (RBPT)**

Rose Bengal Plate Test was carried out following the procedure of Premalatha and Prakash, (2015). Antigens kept at 4-8°C were removed from the refrigerator and placed at room temperature for about 15-20 minutes, prior to its use, shaken well before use in order to get a uniform suspension of the antigens. One drop (0.03ml) of each serum and antigen were placed on the plate using

disposable pipettes. Both the drops were mixed gently and properly with an applicator for 3-4 minutes. Known positive and negative serum samples were also included with each test as control. The result was examined in bright light. Any degree of agglutination was taken as positive and no agglutination was considered as negative reaction.

### **Serum Agglutination Test (SAT)**

For SAT the procedure of Hussain, et al., (2014) was followed. In first tube 0.8 ml of normal saline solution (containing 0.5% phenol) was added and 0.5 ml in the remaining four tubes. Sample serum (0.2ml) was added to the first tube, mixed thoroughly, (this will make 1/5 dilution). Then 0.5 ml was withdrawn from the first tube and transferred into the 2nd tube and so on. After proper mixing, 0.5 ml was discarded from the second last tube. Now the dilution in each tube left 1/5, 1/10, 1/20, 1/40, and 1/80 respectively. A 5 ml of the standardized *Brucella abortus* concentrate antigen (diluted 1:10) was added to each tube, containing serum dilution, giving a series of final dilutions 1/10, 1/20, 1/40, 1/80 and 1/160 respectively. Serum and antigen suspensions were then mixed thoroughly from the highest dilution to the lowest i.e. 1/60 to downward. The known positive and negative sera were kept as controls. The rack containing tubes was then incubated at 37°C for 18-20 hours. After incubation, the results were recorded based on clearing of the suspension along with clumping of the organisms and persistency of the sediments upon gentle shaking. Complete agglutination and sedimentation with 100% clear supernatant was marked as four plus (++++), similarly 75%, 50% and 25% were marked as three (+++), two (++) and one (+) plus, respectively. No agglutination was considered as negative.

### **STATISTICAL ANALYSIS:**

The data were analyzed through MS Excel to calculate the percentages of Brucellosis infection, using the following formula: % Infection = (Total Number of Positive Samples/Total Number of Samples) x 100 Male and female distribution of Brucellosis was also found using the above formula.

### **RESULTS AND DISCUSSION:**

A total of 106 blood samples from suspected cases of human brucellosis were processed during this study (from January 2014 to December 2014). Out of total samples, 60 samples were from females and 46 from males. On overall basis

the sero-prevalence of 19.81% was recorded in the present study (Table I). The overall prevalence of current study is much lower than that found by Khanet al., 2014. They reported an overall prevalence of 30.68% in their study from 2001 to 2013 in the same locality. The difference in the findings may be attributed to increased awareness among the people against brucellosis in the locality. The findings of our study do not match with those of Maher, et al., 2012. They conducted similar type of study in the Tamilnadu state of India. They reported prevalence of 7.4%, much lower, as compared to our results. The difference in the results may be due to the subject population as they included a small group of practicing veterinarians in their study only. Also they carried out Polymerase Chain Reaction for the subject samples which is more sensitive and specific thereby decreasing the chances of error either in the form of false positive or false negative. Kumar et al., (2010) reported 2.74% sero prevalence of brucellosis in human beings in India. The difference between the findings may be due to the target samples as they limited their study to occupational human beings, related with animals.

As far as the gender distribution of human brucellosis is concerned in the region, the incidence is on higher side for females (26.66%) as compared to males (10.86%) in the present study as shown in table II. Higher incidence of disease in females may be due to the increased contact of females with livestock in the rural areas as livestock is mostly managed by women in the poor rural communities. Beside this, women are also actively involved in the handling of dairy products as well as livestock wastes which may be an attribution of their high risk to brucellosis. The findings of this study oppose that of Rashid et al., (1999) who found higher incidence of brucella infection in males as compared to females. The difference in the findings may be due to traditional changes between two provinces as they conducted their study in Okara region where males may be actively involved in handling of livestock and their products, as compared to Kohat region where females mostly manage the animals at homes, making them more prone to Brucellosis as compared to males. Mausoumi et al., (1992) also found greater infection rate in males as compared to females. Similar findings were also reported by other researchers such as (Falade, 1974; Ocholi, 1993, and Edu, 2005) and

found greater incidence of brucella infection in those individuals who come in direct contact more frequently with milch animals.

### CONCLUSION:

It is concluded from this study that seroprevalence of brucellosis is on higher side for females as compared to males in kohat region of Khyber Pakhtunkhwa. Higher incidence in females may be due to their direct contact with animals more frequently than males, as well as less awareness and lack of education in the people regarding brucellosis and its precautionary measures.

### RECOMMENDATIONS:

Based on the results of this study, the following recommendations are made:

1. Awareness campaigns regarding potential sources of infection, in human beings (e-g hygienic milking, avoid the use of raw milk as well as proper cooking of meat should be adopted at farming community level, in rural areas).
2. Free movement of animals should be avoided which is of special concern in this region because of afghan refugees, to limit the disease transmission among animals as well as from animals to human beings.
3. Government coordinated farmer's education programs and regular screening of animals and human beings is required to take necessary action in time to eradicate the problem.
4. Advance techniques including ELISA and PCR should also be used in future to make the diagnostic procedure more sensitive and reliable.

**Table I: TOTAL NO. OF SAMPLES SCREENED WITH OVERALL PREVALENCE**

Total No. of Samples	Seropositive Samples	Percent Positive
106	21	19.81%

**Table II: INCIDENCE OF BRUCELLOSIS IN MALE AND FEMALE**

Sex	No. of Samples Examined	Positive	
		No.	Percentage
Male	46	05	10.86%
Female	60	16	26.66%



Fig. I: Shows overall positive percentage of brucellosis in Human in Kohat.

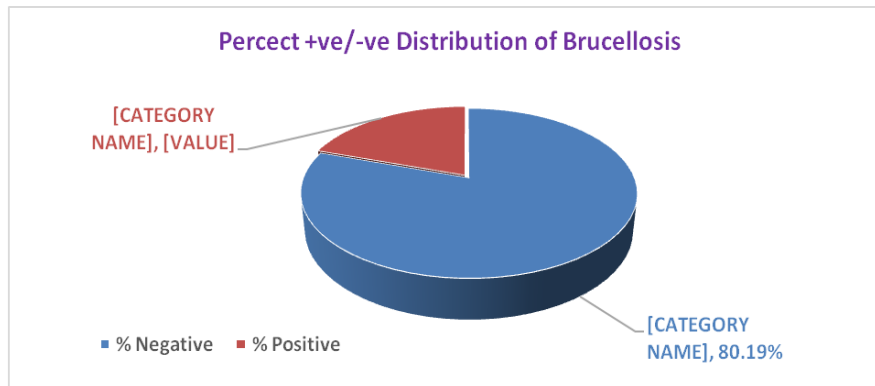
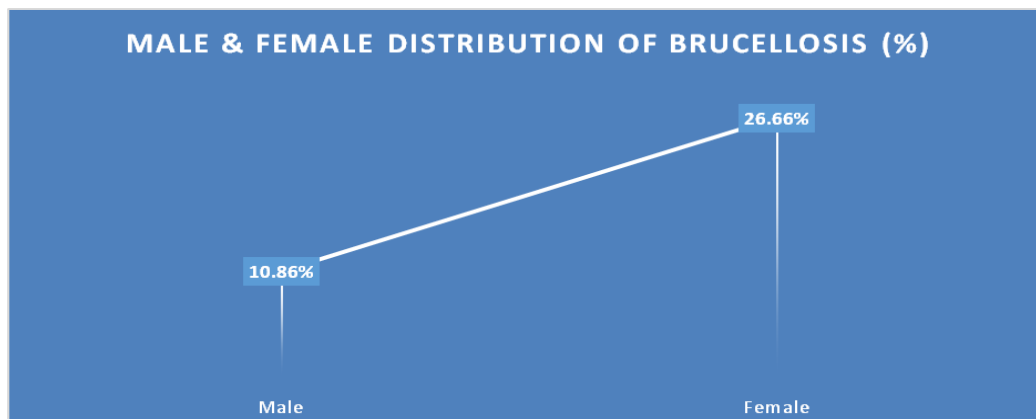


Fig. II: Illustrates gender wise distribution of brucellosis in Human in Kohat.



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## THE IMPACT OF FDI ON THE GDP GROWTH, AGRICULTURE (AG) AND MANUFACTURING (MM) SECTORS OF PAKISTAN

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### ABSTRACT

Our research paper describes the analysis of Foreign Direct investment (FDI) inflow to Pakistan and its impact on agriculture (ag) and manufacturing (mm) Sectors towards informal employment. The main objective of our study was to determine whether FDI had any impact on ag and mm sectors or not. The data obtained from Pak economic Survey Reports, WDI, IMF, Asian Development Bank and SAARC Secretariat for the years 1980-85 through 2015, splitted into 07 tenures of 05 years each, was subjected to our analysis (a) 1980-84, (b) 1985-89, (c) 1990-94, (d) 1995-99, (e) 2000-04, (f) 2005-09 and (g) 2010-15. Agriculture sector informal employment mean values recorded were 13.17±0.17, 14.46±0.28, 15.06±0.12, 16.49±0.56, 17.57±0.34, 21.11±0.86, and 24.66±0.14% for the tenures (a) thru (g) percent respectively. While manufacturing Sector informal employment mean values were 3.54±0.02, 3.85±0.07, 3.59±0.12, 3.66±0.09, 5.07±0.32, 6.42±0.15 and 8.03±0.23 percent respectively. The FDI inflow to Pakistan from various developed countries namely US, UK, UAE, Japan, Hong Kong, Switzerland, Saudi Arabia, Germany, South Korea, Norway and China for the recent tenure periods of (i) 2000-2005, (ii) 2006-2010, (iii) 2011-2016 amounting to 1266.45, 3762.62, and 1628.69 million (USD) respectively. The data on GDP growth w.e.f 1980-85 through 2014-15, as evidenced, amidst fluctuations, for the study period (mean values) of the tenure of a, b, c, d, e, f and g were 7.63±0.85, 6.28 ± 0.53, 4.72 ± 0.96, 2.98 ± 0.73, 4.67 ± 0.90, 4.68 ± 1.08, and 3.15 ± 0.50 percent respectively. The maximum (max.) and minimum (min.) values of GDP growth rate provided the range for these tenures as (a) max. = 10.21 and min. = 5.06, (b) max = 7.62 and min = 4.95, (c) max = 7.70 and min = 1.75, (d) max = 4.96 and min = 1.01, (e) max = 7.36 and min = 1.98, (f) max = 7.66 and min=1.70 and (g) max=4.71 and min = (-)1.6 respectively. The informal employment was recorded in Agriculture sector for seven tenures of a,b,c,d,e,f and g as 13.26%, 14.49%, 15.10%, 16.29%, 17.68%, 21.31% and 24.56% respectively. Economic growth of any country was the reflection of its GDP growth, as main indicator. The statistical approach for analyzing the data included Auto Regression Distributive lag (ARDL) approach. Co-integration equation were negative and significant showed long run relationship between variables. It was concluded that FDI had a positive impact on the informal employment in agriculture and manufacturing Sectors, in Pakistan.

**Key Words:** FDI, Informal Employment, Agriculture and Manufacturing Sectors, Economic Growth, Pakistan.

### INTRODUCTION:

The total population of the country was 191.71 millions during 2014-15 as compared to 188.02 millions in the previous year, with a growth of 1.95%. Out of this total population 59.9 millions were employed (32%) while the remaining (78%) were not formally employed.

Out of the majority of this population (with the age of 18-50 years) remained informally employed. It has been indicated that FDI received from UK, US, UAE,

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China, Italy, Hong Kong and Switzerland was being utilized in developmental projects under which certainly the informal employment was also generated leading to progressive economic growth in the country. This has been discussed not only by Pakistani researchers such as Bilawal *et al.*, (2014), Isran and Isran (2012) and Ramzan *et al.*, (2013), but also the Regional Researchers namely Rizvi and Nishat (2009), supported by International worker's reports such as Chen (2007), Karlsson *et al.*, (2007) Kawaguchi (2008) and supported by documentation from Pakistan Ejaz Wasti (2013-14) and (2014-15).

Byiers *et al.*, (2015) recorded in their effort of manufacturing progress of Employment creation in Sri Lanka (using the data from the year 1992 to 2012 and stated that unemployment in Sri Lanka fell from 14.5% in 1992 to 4.0% in 2012. The main element of employment progress, they recorded, that the progress remained all the more impressive given that the Sri Lankan working-age population grew at an average rate of 03% annually, over the same period.

Ahmed Abdul-Rehman Khder Aga (2014) and by Bildirci and kayinkci (2010) forwarded the effects of FDI on Economic Growth in Turkey, as FDI was utilized in Agriculture and Rural Development. The financial assistance, thus received, was utilized in a sustainable way. They referred back to the Turkey's economy, in the year 2012, as 16<sup>th</sup> largest economy of the world, in terms of GDP. Over the period 2000-2012, Turkey showed a steady record of economic growth (averaged an annual rate of about 05.2%) as reported by World Bank (2013).

Cheryl Doss *et al* (2011) noticed that Aggregate results about 43% of the Agricultural labor force was employed globally in developing countries. They found contribution of women in agricultural activities to the tune of 30% in Gambia and 60-80% in different parts of Cameroon, 30% in India and 50% in China were involved in agriculture activities. They depicted in their earlier study (Doss 2009) and (Gupta 2009) 60 and 80 percent involvement of women in agriculture (of food crops grown from seeds that were planted by women). Similarly they also found that 400 million women were totally involved in agriculture activities.

Thomton *et al* (2002) an informed estimated two-third of poor livestock keepers. They conducted a comprehensive survey and found that 135 million people were employed in secondary sector of Agriculture including post harvest

activities and 30% of total employment in fisheries. According to FAO fishery data base of 86 countries indicated in 2008, that 5.4 million women worked as fisheries and fish farmers in primary sector. Similarly it was reported that women represented in fisheries a share of 21 and 24 percent in China and India respectively. Their stress had been on 33% of the rural aquaculture workforce in China, 42% Indonesia and 80% in Viet Nam.

Hertz *et al* (2009) carried out studies on economic working women (i) low wage jobs, which pay less than the median agricultural wage. (ii) Median wage activities, which pay more than median agriculture wage and (iii) high wage jobs. Similarly Friedman Sanchez (2006) found that 64% women worked in fresh cut-flowers for export on agro industrial work as skilled labors.

Abdul Ghafoor Awan and Atteqa Alam (2015) found that special position by employing half of labor force, and their production shared 21.4% of GDP. They also found 273% increased in fruits, 38% in sugar, 20% in rice, 62% in wheat, 69% in maize and 15% in cotton in the population of the country (Pakistan).

Khalil Ahmad and They Heny (2012) found the determinants of agriculture productivity growth in Pakistan. They found that 66% of population accounted for 21% of GDP (share), 45% of labor force and contributed 18% to export earnings. As a result of the agriculture slowed to 2.7% as compared to 4.4% of 1990 and 5.4% of 1980. They also analyzed data of fertilizer, human capital and agriculture credit with long run and short run elasticities to the tune of (0.16, 0.20), (0.14,0.09) and (0.06,0.1) respectively for the economic indicators.

Sandeep Kumar (2014) reported the FDI in Indian Agriculture Sector and found that 75% of the rural population in India, (52% labor force), its contributed only 14.4% of GDP and 10.23% of all exports. Similarly he also found that 100% FDI was utilized mainly in Horticulture, Floriculture, development of seeds and animal husbandry etc. He analyzed FDI due to negative portfolio investment total FDI were very less in the year 2003-04 i.e. 212.7%. He also analyzed total GDP and Agriculture GDP were 4.5%, in the year 2007-08. Similarly food processing industry comprised 2% of fruits and vegetables and 15% of processed milk. He found that FDI inflow of USD 325.93 million by 2009 and targeted 25.07 billion worth of FDI inflow to achieve by 2015.

Sabur and Molla (2001) carried out study on use of pesticides and found their impact on crop production in Bangladesh. They found that 95% farmers used pesticides on crops in their field and about 19% and 12% farmers used pesticides after applying fertilizers and after ploughing land respectively. Similarly 54% of AUS, 45% paddy, 44% sugarcane and 43% oilseed were involved in pesticide usage.

Muhammad Ajmair and Ashiq Hussain (2014) found the impact of FDI on various agricultural sectors and on GDP. They analyzed data and found that FDI had positive impact on food and Agriculture. Iddrisu *et al* (2015) used Johanson Co-Integration test for the period from 1980 to 2013 and concluded that FDI had negatively effected agriculture in long run but a positive effect on short run.

Asif Bajwa (2013) forwarded a detailed account of Pakistan employment trends (both males and females). He analyzed data of employment to population ratio and found 46.5% in 2001-02 to 49.7% in 2005-06. The size of the ratio both male and female started 77.6% in 2001-02 and 21.1% in 2012-13 respectively. Similarly un-employment rate, as worked out was 7.8% in 2001-02 to 5.1% in 2006-07 and 6.0% in 2012-12. He also found that share of agriculture in total employment were 41.1% in 2001-02 to 43.5% in 2010-11 but 42.2% in 2012-13 lower than 2010-11. He noticed that male share of agriculture were 37.2% in 2001-02 and ended up lower to 31.1% by the end of 2012-13. Similarly female share were 64.5% in 2001-02 to 74.9% in 2012-13. He analyzed data share of employment in informal sector as raised 63.8% in 2001-02 to 73.3% in 2012-13. He depicted in their study share of males in informal sector were (64.1%, 73.6%) and females were (60.8%, 70.9% in 2001-02 to 2012-13 respectively.

#### **MATERIAL AND METHODS:**

Our study was carried out from time series data of 1980 to 2015, put into splitted tenures of five year each, taken from State Bank of Pakistan (SBP), Federal Bureau of Statistics (FBS), and Pakistan Economic Survey Reports of these years, subjected to our analysis to find out the impact on Economic growth (EG). The increase or decrease in GDP, the inflow of Foreign Direct Investment (FDI) and its relationship was investigated with informal employment, in two main sectors namely (i) Agriculture (AG), and ((ii) Manufacturing (MM). The statistical approach analyzing the data, included Auto Regressive Distributive lag (ARDL)

also utilizing Co-Integration, through E-Views-09 statistical Package. The results thus obtained have been presented in the tabulated form.

#### **REUSLTS:**

**FDI inflow in Pakistan:** As we splitted our time series data w.e.f. 1980 through 2015 into Seven equal periods as 1980-84 (a), 1985-89 (b), 1990-94 (c), 1995-99 (d), 2000-2004 (e), 2005-2009 (f), and 2010-15 (g), it was easier for us not only to get quicker results but fluctuations also were minimized. It was observed that there was a positive increase of 133%, 137.86%, 42.90% ,69.40% and 276.30% in the period a, b, c, d, e and f respectively while in the last period of 2010-15, (g) there was a decrease of -63.60%. The maximum (max) and minimum (min) amount in million US Dollars (USD) has been presented in table-No-01. The mean figers of FDI to Pakistan in the tenures a, b, c, d, e, f, and g were  $75.31 \pm 12.69$ , (min= 29.45 and max = 131.38),  $175.48 \pm 19.67$  (min= 105.73 and max= 245.26),  $417.41 \pm 32.21$  ( min= 258.41 and max= 722.63),  $596,84 \pm 75.65$  (min= 308 and max = 921.97),  $1011.4 \pm 150.89$  ( min= 378 and max= 2201),  $3806 \pm 732.18$  ( min= 2022 and max= 5590) and  $1383 \pm 190.89$  (min= 959 and max= 1807) respectively.

#### **Informal Employment**

**Agriculture Sector:** The Informal Employment was recorded in Agriculture Sector for Seven tenures of a,b,c,d,e,f and g as 13.26%, 14.49%, 15.10%, 16.29%, 17.68%, 21.31% and 24.56% respectively, as presented in table No-02. Our findings confirmed positive and significant relationship between agriculture sector (ag) and Informal Employment (IE) at 5% level of Significance evidenced that if we increased 1 % unit in AG, the response was increased by 0.31% in IE as presented in table No-08.

**Manufacturing Sector:** There was a steady increase recorded in manufacturing sector towards Informal Employment of the tenures a, b, c, d, e, f, and g as 3.51%, 3.79%, 3.62%, 3.68%, 5.13%, 6.54% and 7.88% respectively (table No-02), except during tenure (c) of the years 1990-1994. There appeared positive and significant relationship between mm and IE but if we increased 1% unit in mm, then the response would be an increase of 0.19% in IE as presented in table 08.

**Foreign Direct Investment (FDI):** There was a positive and significant relationship between FDI and IE but If we increased 1% unit in FDI, the response would be 0.074% increase of IE as presented in table No-08.

**Gross Domestic Products (GDP):** There was a negative and insignificant relationship between GDP and IE but If we increased 1% unit in GDP, the response would be decreased by 1.81% in IE. Because the Informal Employment (IE) also included other activities, such income could not be included in GDP as presented in table No-08.

**Table No-01 Showing the Mean Values of FDI in Pakistan of Seven Consecutive Periods w.e.f 1980-84 to 2011-2015 (million USD).**

Sr. No	Tenure No	Actual Years	Frequency	FDI inflow (in Pakistan)			
				Max	Min	Mean	%Increase or Decrease
01	(a)	1980-84	05	131.38	29.45	75.31	
02	(b)	1985-89	05	245.26	105.73	175.48	+133%
03	(c)	1990-94	05	722.63	258.41	417.41	+137.86%
04	(d)	1995-1999	05	921.97	308	596.84	+42.90%
05	(e)	2000-2004	05	2201	378	1011.4	+69.40%
06	(f)	2005-2009	05	5590	2022	3806	+276.30%
07	(g)	2010-2015	06	1807	959	1383	-63.60%
<b>Total</b>				<b>11,619.24</b>	<b>4,060.59</b>	<b>7,481.44</b>	

Source : WDR of respective year IMF-World Bank Reports.  
Pak. Economic Survey Reports.

**Table No-02 Showing Informal Employment (%) for Seven Periods w.e.f 1980 through 2015 in Pakistan.**

S.No	Tenures	Actual Years	Frequency	Agri.	Manufacturing	GDP
01	(a)	1980-84	05	13.26	3.51	7.29
02	(b)	1985-89	05	14.49	3.79	6.42
03	(c)	1990-94	05	15.10	3.62	4.53
04	(d)	1995-1999	05	16.29	3.68	3.40
05	(e)	2000-2004	05	17.68	5.13	4.33
06	(f)	2005-2009	05	21.31	6.54	4.63
07	(g)	2010-2015	06	24.56	7.88	4.32

Source: IMF World Bank Reports Pak. Economic Survey Report

**Table- No-03 Showing Country wise FDI inflow to Pakistan (Mean Values) w.e.f 2000-2001 through 2014-2016. (In Million USD).**

Sr.#	Countries	2000-2005	2006-2010	2011-2016
i	US	285.26	759.74	168.28
ii	UK	138.38	417.08	217.11
iii	UAE	345.5	391.14	97.51
iv	Japan	24.48	59.98	34.96
v	Hong Kong	12.43	132.8	128.51
vi	Switzerland	87.91	170.48	95.46
vii	Saudi Arabia	67.46	76.46	51.63
viii	Germany	13.18	59.92	15.45
ix	South Korea	1.38	3	18.15
x	Norway	78.81	89.9	130.25
xi	China	3.28	175.62	337.75
xii	Others	208.38	1426.5	333.63
<b>Total</b>		<b>1,266.45</b>	<b>3,762.62</b>	<b>1,628.69</b>

Source : IMF, World Bank, SAARC STAT- 2010-2016



**Table No-04 Showing the Stationary and E-Views 9 Results of data analyzed of informal Employment, Agriculture Sector (AG), Manufacturing Sector, GDP, FDI, for the period 1980-85 to 2015 (A & B)**

<b>TABLE –A</b>			
<b>Variables</b>	<b>Level</b>	<b>1<sup>st</sup> Difference</b>	<b>2<sup>nd</sup> Difference</b>
Informal Employment (Y)	-	1(1) Intercept	-
Agriculture Sector (AG)	-	1(1) Intercept	-
Manufacturing Sector (MM)	-	1(1) Intercept	-
GDP	-	1(1) Intercept	-
FDI	-	1(1) Intercept	-

<b>TABLE –B</b>			
<b>Variables</b>	<b>t-value</b>	<b>Prob Value</b>	<b>Std. Error</b>
Informal Employment (Y)	5.21>Critical Value	0.0002	0.18
Agriculture Sector (AG)	5.90> Critical Value	0.0000	0.17
Manufacturing Sector (MS)	5.91> Critical Value	0.0000	0.19
GDP	7.47> Critical Value	0.0000	0.16
FDI	3.81> Critical Value	0.0064	0.16

Source: Thesis Data of Basharat Mehmood M.Phil Economics AAU. Rawalpindi.

**Table-05 Showing the Mean Values of Agriculture (AG) Sector in Pakistan, of Seven Consecutive Periods w.e.f 1980-84 to 2011-2015.**

<b>S. No</b>	<b>Tenure No</b>	<b>Actual Years</b>	<b>Frequ ency</b>	<b>Agriculture (AG)</b>				
				<b>Max</b>	<b>Min</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
01	(a)	1980-84	05	13.63	12.72	13.17	0.39	0.17
02	(b)	1985-89	05	15.29	13.63	14.46	0.63	0.28
03	(c)	1990-94	05	16.12	14.01	15.06	0.82	0.12
04	(d)	1995-1999	05	17.85	15.14	16.49	1.25	0.56
05	(e)	2000-2004	05	18.47	6.68	17.57	0.78	0.34
06	(f)	2005-2009	05	23.63	18.6	21.11	1.92	0.86
07	(g)	2010-2015	06	25.14	24.18	24.66	0.35	0.14
<b>Total</b>				<b>130.13</b>	<b>114.96</b>	<b>122.52</b>		

Source: Bureau of Statistics and data analysis record of thesis of Basharat Mehmood M.Phil AAU Rawalpindi.

**Table-06 Showing the Mean Values of Manufacturing (MM) Sector in Pakistan, of Seven Consecutive Periods w.e.f 1980-84 to 2011-2015.**

<b>Sr. #</b>	<b>Tenure No</b>	<b>Actual Years</b>	<b>Frequ ency</b>	<b>Manufacturing Sector</b>				
				<b>Max</b>	<b>Min</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
01	(a)	1980-84	05	3.61	3.47	3.54	0.05	0.02
02	(b)	1985-89	05	4.08	3.62	3.85	0.17	0.07
03	(c)	1990-94	05	3.93	3.26	3.59	0.27	0.12
04	(d)	1995-1999	05	3.93	3.4	3.66	0.22	0.09
05	(e)	2000-2004	05	5.83	4.31	5.07	0.72	0.32
06	(f)	2005-2009	05	6.89	5.96	6.42	0.34	0.15
07	(g)	2010-2015	06	8.89	7.17	8.03	0.58	0.23
<b>Total</b>				<b>37.16</b>	<b>31.19</b>	<b>34.16</b>		

Source: Bureau of Statistics and data analysis record of thesis of Basharat Mehmood M.Phil Economics AAU Rawalpindi.

**Table No.-07 Showing the results of (Long run) analysis of Auto regressive Distributive Lag (ARDL Bound Test) results of Seven Consecutive periods 1980-84 to 2010-15.**

ARDL Bounds Test	Date: 08/05/17 Time: 04:35	
Sample: 1988 2015	Included observations: 28	
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	5.945661	4
<b>Critical Value Bounds</b>		
<b>Significance</b>	<b>I0 Bound</b>	<b>I1 Bound</b>
10%	2.03	3.13
5%	2.32	3.5
2.5%	2.6	3.84
1%	2.96	4.26
Source: WDR of respective years, Pak Economy Surveys Reports and Thesis Research Data analysis Basharat Mehmood, M.Phil (Economics) AAU Rawalpindi-2017.		

**Table No.-08 Showing Long run and Short Run results of ARDL of this study on the basis of Bound Test of Seven Consecutive periods 1980-84 to 2010-15.**

ARDL Cointegrating And Long Run Form	Dependent Variable: Y			
Selected Model: ARDL(3, 2, 2, 2, 2)	Date: 08/05/17			
	Time: 04:38			
Sample: 1980 2015	Included observations: 28			
<b>Model Cointeq = Y - (0.3104*AG + 0.074*FDI -1.8196*GDP + 0.1933*MM</b>				
<b>Long Run Coefficients</b>				
	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistics</b>	<b>Prob.</b>
CointEq(-1)	-3.380219	0.768059	-4.400990	0.0218
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
AG	0.310405	0.013721	22.622628	0.0002
FDI	0.074	0.011	6.562326	0.0072
GDP	-1.819559	1.111811	-1.636573	0.2002
MM	0.193314	0.025806	7.491086	0.0049
C	0.594143	0.150401	3.950392	0.0289
Source Thesis Research Data analysis of Basharat Mehmood, M.Phil (Economics) AAU Rawalpindi.				

### CONCLUSIONS:

- (i) The Informal Employment in Agriculture Sector (AG) in the seven tenures of a, b, c, d, e, f and g was consecutively towards increase w.e.f 1980-85 through 2015.
- (ii) The Informal Employment in Manufacturing Sector (MM) was also observed towards steady but continuous increase in these tenures, except a little decrease in the tenure (c), for the period 1990-94.
- (iii) The FDI inflow to Pakistan from various developed and friendly countries was splitted averaged in only three tenures of (a) 2000-2005, (b) 2006-2010 and (c) 2011-2015 and the figers were (a)= 1266.45, (b)= 3762.62 and (c) 1628.69 million USDs indicated our financial personnel are avoiding total dependence on FDI.

**RECOMMENDATIONS:**

- (i) It is recommended for Researchers, Planners, Teachers and Graduate Students that work on recent years say 03-04 years from today will be much helpful rather than repeatedly putting oneself for just an exercise, in both the sector, for 20 years back, or 30 years back.
- (ii) FDI inflow from various developed and economically better countries, to Pakistan, provided good financial support, in various sectors, hence be continued, and best be utilized in Agriculture and its sub-sectors.
- (iii) The Informal Employment was observed in the improvements, other Sectors may also be included by Government Authorities.

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## THE COMPARATIVE IMPACT ON THE GDP GROWTH, AND AGRICULTURE SECTOR OF SAARC COUNTRIES, INCLUDING PAKISTAN

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### ABSTRACT

Our research paper describes the analysis of Foreign Direct investment (FDI) inflow to SAARC Countries including Pakistan and its impact on various economic indicators such as Agriculture Sector, life Expectancy, Human Development Index (HDI), Un-Employment, Labor force and GDP Growth. As we are directly linked and Pakistan being the Signatory of SAARC various forums, we are bound to provide and receive updates from SAARC Secretariat, Khatmandu (Nepal) on various financial Socio-Economic, agriculture and other informations, on yearly basis. These countries data of recent year of 2013, 2014 and 2016 to our concern had been (a) Employment in Agriculture, (b) un-employment and (c) GDP growth rate is important. It can be inferred that improvement in these Sectors is taking place sustainably, in Pakistan, as compared to India, Bangladesh, Sri Lanka and Afghanistan. The FDI inflow to Pakistan from various developed and friendly countries namely US, UK, UAE, Japan, Hong Kong, Switzerland, Saudi Arabia, Germany, South Korea, Norway and China for the recent tenure periods of (i) 2000-2005, (ii) 2006-2010, (iii) 2011-2016 was recorded amounting to 1266.45, 3762.62, and 1628.69 million USD respectively. At the same time, the information on FDI inflow of three recent years i.e. 2013, 2014 and 2016 to SAARC countries were also recorded with increasing trends as 3.0%, 3.59% and 24.24% respectively. The data on GDP growth in Pakistan w.e.f. 1980-85 through 2014-15, evidenced, amidst fluctuations, for the study period (mean values) of the tenure of a, b, c, d, e, f and g was  $7.63\pm 0.85$ ,  $6.28\pm 0.53$ ,  $4.72\pm 0.96$ ,  $2.98\pm 0.73$ ,  $4.67\pm 0.90$ ,  $4.68\pm 1.08$ , and  $3.15\pm 0.50$  respectively. It was recommended to further investigation of FDI in various sub-sectors of SAARC countries, specially, in Pakistan.

**Key Words:** FDI, SAARC, GDP Growth, Pakistan.

### INTRODUCTION:

The role and impact of FDI on Employment opportunities have since been compared through Empirical evidence from Pakistan, India and China with the result that GDP has a significant impact on the level of employment in agriculture and other sectors in all of the three countries, duly reported by Rizvi and Nishat (2009) during the period 1985-2008 (except Afghanistan, as joined SAARC in 2004). A very important aspect of economic growth of developing countries has been the Foreign Direct Investment (FDI) and it has played pivotal role of labor force in various Sectors of informal employment including agriculture. Pakistan being a country with steady and sustained economic growth has shown positive results in the recent years, and as a result, our Gross Domestic Products (GDP) has also shown an increase. The major FDIs inflow to Pakistan has been from China, US, UAE, UK and Italy as reported by Ejaz Wasti (2014-15) supported with

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figures and data in, US Dollars.

A few case studies on the impact of FDI on Economic Growth in agriculture and other sectors by (i) Gudaro *et al.*, (2010), and (ii) Impact of Trade openness and macroeconomic variables on GDP growth of Pakistan by Ramzan *et al.*, (2013) as well as impact of trade liberalization on economic growth involving by Shaheen *et al.*, (2013). They have pointed out that FDIs, the GDP and employment in agriculture are positively related in the light of reviewed literature. The Data from SAARC countries in terms of FDI's utilization in various sectors namely (i) Labor Force, (ii) Human Development Index (HDI), and (iii) Economic Growth (EG) for comparison and other economic indicators as documented in SAARCSTAT: (2013), (2014) and (2016) has been worked out respectively.

SAARC data on various sub-sectors also needs to be reported as some of the researchers reviewed indicated Trade Sector, export based investment and Industrial Sectors in which raw material by-products and value added items were some of the economic indicators wherein FDI could best be utilized as rightly pointed out by Sadia *et al* (2014), Muhammad Hafeez (2009) and (2014) and the labor involvement in agriculture sector as documented by Asif Bajwa (2013) both male and females, of provinces Punjab, Sindh, KPK, and Baluchistan in Pakistan duly supported by Statistical analysis approach by Muhammad Ayaz *et al* (2013).

The statistical evidence put forward by Muhammad Ayaz *et al* (2013) towards use of FDI in agricultural products and exports with positive indicators of relationship using ARDL, ADF and Error Correction Term (ECT) and based on their analysis recommended to the Government that FDI might be attracted towards export oriented sectors such as agricultural production and Textile manufacturing in the international market.

#### **MATERIAL AND METHODS:**

1. In our methodology, the information, taken from various sources towards FDI inflow in Pakistan (form various developed and friendly countries w.e.f 1985 through 2015), (except Afghanistan who joined SAARC in 2004).
2. Indigenous information, as per, were analyzed our reviewed work (Referred to) reported by Ramzan *et al.*, (2013), Bilawal *et al.*, (2014), Ejaz Wasti (2014-15) and Javaid (2016) were also utilized for comparison in support to our methodology.

3. We also analyzed data from SAARC countries in terms of FDI, Labor Force, Human Development Index (HDI), and Economic Growth (EG) as evidenced through agriculture sector for comparison of unemployment as documented in SAARCSTAT: (2013), (2014) and (2016), respectively.
4. The data so collected was subjected to proper statistical analysis including the empirical data reported by (a) Asian Development Bank, (b) World Development Indicators (WDI), (c) IMF and UNDP, (d) Pak Economic Survey Reports, (e) Federal Bureau of Statistics (FBS) and SAARC STAT: for the years 2013, 2014 and 2016 respectively.
5. The results thus obtained have been summarized in tabulated form in the results section, of this write-up.

### **REUSLTS:**

#### **SAARC Countries Updates including Agriculture Sector:**

As we are directly linked and Pakistan being the Signatory of SAARC various forums, we are bound to provide and receive updates from SAARC Secretariat, Khatmandu, on various financial Socio-Economic and other information's, on yearly basis.

The total Population (in millions) of SAARC Countries for the years 2013, 2014 and 2016 namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri-Lanka were recorded as 25.98, 148.69, 0.72, 1210.19, 0.31, 26.62, 177.10 and 20.32 in 2013 while 25.98, 153.60, 0.74, 1210.56, 0.33, 26.49, 184.35 and 20.48 in 2014 whereas these figers were 29.15, 158.9, 0.75, 1210.56, 0.33, 26.49, 191.71, and 20.96 millions for 2016 respectively. These Countrie's data, in terms of Population, Literacy rate, Labor Force Employment (%) in agriculture, un-employment, Life Expectancy (years), Human Development Index (HDI) and GDP growth rate, for the years 2013, 2014 and 2016 have been tabulated in tables No-01, No-02 and No-03.

To our Concern, Employment in Agriculture, un-employment and GDP growth rate is important. It can be inferred that improvement in these Sectors is taking place sustainably, in Pakistan, as compared to India, Bangladesh, Sri Lanka and Afghanistan as evidenced below.

#### **GDP Growth in SAARC Countries:**

Economic growth of any Country is the GDP growth, as main indicator. The

very recent results of Pakistan for the years 2013, 2014 and 2016 indicated 3.0%, 3.59% and 4.24% respectively, which is a Significant Positive indicator, in our study. Similarly Economic Growth of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri-Lanka in 2013 were recorded as 17.3%, 5.8%, 11.77%, 9.6%, 5.5%, 4.6% and 6.4% respectively, in 2014 these figers were 17.3%, 6.03%, 4.62%, 4.5%, 0.9%, 3.65% and 7.3%. In the 2016 these figers were recorded as 2.40%, 6.55%, 5.46%, 4.50%, 0.90%, 4.58% and 4.80 % respectively. This has been correlated with agriculture sector in Table No-04.

**Un-Employment in SAARC Countries:** The Status of Un-Employment in the Country Pakistan was recorded as 6.00%, 6.00% and 5.90% in the years 2013, 2014 and 2016 respectively, as evidenced through indigenous as well as International Sources such as (IMF, WB, SAARCSTAT and WDR of these years) presented in Tables No-01, 02 and 03. Similarly the Status of Un-Employment of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri-Lanka in 2013, recorded 7.0%, 4.2%, 3.1%, 2.6%, 11.7%, 2.1%, 4.0% while 7.0%, 4.50%, 2.10%, 2.30%, 11.70%, 2.10% and 4.40% in 2014 whereas these figers for 2016 were 7.0%, 4.30%, 2.60%, 2.30%, 11.70%, 2.10% and 4.30% respectively. This does not include labor force involvement in agriculture and other sectors, which is detailed separately for SAARC.

**Labor Force and Employment in Agriculture:** The total labor force in Pakistan was recorded as 45.71%, 45.72% and 45.2% for the years 2013, 2014 and 2016 respectively while % employed in Agriculture (out of total labor force) during 2013, 2014 and 2016 was 45.1%, 45.2% and 42.3% as presented in tables No-01, 02 and 03 respectively. Similarly total labor force of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri-Lanka in 2013, were also recorded 54.2%, 58.5%, 67.4%, 59.6%, 53.8%, 71.5% and 47.2% while in 2014 these figers were 54.2%, 59.3%, 64.4%, 55.9%, 53.8%, 71.5% and 53.8%. The data for 2016 showed as 54.20%, 60.70%, 62.60%, 55.90%, 53.80%, 71.50% and 53.30% total labor force employed respectively. Similarly Employed labor force in Agriculture was recorded 69.6%, 48.1%, 60.15%, 53.2%, 4.2%, 73.9% and 31.0% in 2013 whereas, in 2014 these figers were, 69.6%, 47.3%, 60.2%, 48.9%, 4.2%, 73.9% and 29.8% and in the year 2016 these figers were 69.60%, 45.10%, 60.20%,



48.90%, 4.20%, 73.90% and 28.50% labor force employed in Agriculture sector respectively.

**Life Expectancy and Human Development Index (HDI) of Pakistan:** The life expectancy evidenced through indigenous and SAARC-STAT: Data indicated 63.9, 64.6 and 62.5 years for the years 2013, 2014 and 2016 while the HDI for these years was 0.504, 0.515 and 0.538 respectively, as detailed in tables No.01, 02 and 03. The life Expectancy of Afghanistan were not recorded in 2013, 2014 and 2016. The life Expectancy and HDI of Bangladesh, Bhutan, India, Maldives, Nepal and Sri-Lanka in 2013, 2014 and 2016 were recorded. The Life Expectancy was 67.4, 64.1, 62.6, 72.6, 63.6 and 71.1 year in 2013 while the age 67.9, 67.3, 64.6, 73, 63.6 and 68.8 years, 69.40 whereas this average was 69.40%, 67.30%, 64.60%, 73.0%, 65.50% and 72.0% in the year 2016 respectively. For these countries the HDI for the year 2013 were 0.4073, 0.566%, 0.619%, 0.547%, 0.714%, 0.455%, 0.715% in 2013 whereas these figures in 2014 were 0.74%, 0.515%, 0.538%, 0.554%, 0.688%, 0.463%, 0.715% in 2014 these figures for 2016 were recorded as 0.465, 0.570%, 0.605%, 0.609%, 0.706%, 0.548% and 0.757% for these countries respectively.

**Table No.01 Showing the Population, Employed and Unemployed Labor force, HDI and Real Growth Rate for the year 2013, in SAARC Countries, including Pakistan.**

S. No	Countries	Population In 000	Litracy Rate	Labor Force	Employed Agri(%)	Un-Employed	Life - Exp	HDI	GDP Growth Rate
01	Afghanistan	25985.6	NA	54.2	69.6	7.0	NA	0.407	17.3
02	Bangladesh	148692	55.9	58.5	48.1	4.2	67.4	0.566	5.8
03	Bhutan	720	52.8	67.4	60.15	3.1	64.1	0.619	11.77
04	India	1210193	66.0	59.6	53.2	2.6	62.6	0.547	9.6
05	Maldives	319	95.8	53.8	4.2	11.7	72.6	0.714	5.5
06	Nepal	26621	60	71.5	73.9	2.1	63.6	0.455	4.6
07	Pakistan	177100	55.0	45.7	45.1	6.0	63.9	0.504	3.0
08	Sri-Lanka	20328	90.6	47.2	31.0	4.0	71.1	0.715	6.4

Source: SAARC STAT-2013 World Bank-2013

**Table No.02 Showing the Population, Employed and Unemployed Labor force, HDI and Real GDP Growth Rate for the year 2014, in SAARC Countries, including Pakistan.**

S. No	Countries	Population In 000	Litracy Rate	Labor Force	Employed Agri (%)	Un-Employed	Life- Exp	HDI	GDP Growth Rate
01	Afghanistan	25985.6	NA	54.2	69.6	7.00	NA	0.374	17.3
02	Bangladesh	153600	58.8	59.3	47.3	4.50	67.9	0.515	6.03
03	Bhutan	745	55.3	64.4	60.2	2.10	67.3	0.538	4.62
04	India	1210569	66.0	55.9	48.9	2.30	64.6	0.554	4.5

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S. No	Countries	Population In 000	Litracy Rate	Labor Force	Employed Agri (%)	Un-Employed	Life-Exp	HDI	GDP Growth Rate
05	Maldives	331	95.8	53.8	4.2	11.70	73	0.688	0.9
06	Nepal	26494.5	60	71.5	73.9	2.10	63.6	0.463	3.65
07	Pakistan	184350	55.0	45.7	45.1	6.00	64.6	0.515	3.59
08	Sri-Lanka	20483	91.8	53.8	29.8	4.40	68.8	0.715	7.3
01	Afghanistan	25985.6	NA	54.2	69.6	7.00	NA	0.374	17.3

Source: SAARC STAT-2013 World Bank-2013

**Table No.03 Showing the Population, Employed and Unemployed Labor force, HDI and Real GDP Growth Rate for the year 2016, in SAARC Countries, including Pakistan.**

S. No	Countries	Population In 000	Litracy Rate	Labor Force	Employed Agri(%)	Un-Employed	Life - Exp	HDI	GDP Growth Rate
01	Afghanistan	29157.1	Na	54.20	69.60	7.0	Na	0.465	-2.40
02	Bangladesh	158.9	64.6	60.70	45.10	4.30	69.40	0.570	6.55
03	Bhutan	757	55.0	62.60	60.20	2.60	67.30	0.605	5.46
04	India	1210569	66.0	55.90	48.90	2.30	64.60	0.609	4.50
05	Maldives	331	95.80	53.80	4.20	11.70	73.0	0.706	0.90
06	Nepal	26494.5	60,0	71.50	73.90	2.10	65.50	0.548	4.58
07	Pakistan	191710	57.0	45.20	42.30	5.90	62.50	0.538	4.24
08	Sri-Lanka	20966	93.3	53.30	28.50	4.30	72.0	0.757	4.80

Source: SAARC STAT-2013 World Bank-2013

**Table No.04 Showing Real GDP Per Capita of SAARC including Pakistan (with % change-1999-2005)**

Countries	GDP in Constant Prices										2000-2005	
	2005 US Dollar per capita					% change per capita per annum					% change per capita (In range)	
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1995	2000
<b>SAARC</b>	537	549.7	565.4	578	612.5	NA	2.3	2.8	2.2	5.9	NA	5.3
Afghanistan	185	170	154	245	255	NA	-5.5	-5.7	65	8.2	NA	11.2
Bangladesh	321.2	334	346	355	368	NA	5.9	5.3	4.4	5.3	NA	4.1
Bhutan	961.7	992	1042	1121	1171	NA	5.9	8.2	10.8	7.6	NA	5.3
Maldives	2925	2990	2971	2993	3359	NA	4.4	-2.2	6.1	14.2	NA	2.3
India	560.8	574	594	606	647	NA	4.0	5.2	3.8	8.4	NA	5.8
Nepal	289	300	311	305	312	NA	6.1	5.6	0.1	3.9	NA	1.8
Pakistan	584	595	594	602	620	NA	4.3	2.0	3.2	4.8	NA	3.2
Sri-Lanka	1011.6	1064	1038	1068	1117	NA	6.0	NA	4.0	5.9	NA	2.9

Source: Thesis Research Data of Basharat Mehmood M.Phil (Economics) AAU. Rawalpindi 2017

\*Afghanistan was not a member of SAARC, Prior to 2004.

**Positive change of Per Capita in Agriculture Sector with FDI intervention (1999-2005):**

Looking back to the situation when FDI inflow to SAARC and Pakistan (when Afghanistan was not a member) with an increase of FDI and its utilization in agriculture, industrial and other sectors, there had been positive and increasing

trend of positive change evidenced through the years 2000, 2001, 2002, 2003 and 2005 but still it needs an investigative approach of which sub-sectors of agriculture (crops, seeds, pesticides, fertilizer), Livestock industry and export oriented trade sectors were involved. The available information has since been presented in table No-04.

### **DISCUSSION:**

Impact of FDI on Agriculture Sector (including its sub-sectors namely Crops, Seeds, Pesticides, Fertilizer, Agricultural by products and value added items of Food and Nutrition), Livestock, forest and fisheries including rural development, with special reference to SAARC and of course Pakistan needs particular and exclusive attention. Our investigative approach involving labor force (employed in Agriculture) had been a limited success which needs similar studies be carried out by researchers, planners, and academia to further elaborate the evidence.

Sadia Abbas *et al* (2014) have quantified that poverty reduction indicators include agriculture, industry and services in Pakistan. Both in Agriculture and Livestock sub-sectors including crops and Livestock production have led to poverty reduction in both long run and short run as evidenced through ARDL and ECM. They used time series data (of 1950 to 2010) and assessed that agricultural crops (including products and by products), as well as Livestock sector (including milk, meat and by products) lead to involve directly the industrial sector and utilize manpower for increased economic growth. They also supported their write up with other research workers from home and abroad also compared major agricultural crops, minor crops, Livestock sectors, manufacturing, mining and quarrying, construction, electricity and gas etc, as involved in poverty reduction.

In their same study, they also analyzed data on Livestock, Sadia Abbas *et al* (2014) found that coefficient of Livestock was positive and highly significant (probability 0.001) related with poverty reduction, in short run (with an elasticity of 0.24%).

Asif Bajwa (2013) have put forward a detailed information duly analyzed, the information from Labor Force Survey (LFS), since 1963, the Pakistan Employment trends and summarized under items No-1.6 and 1.12, the share of

employment in agriculture sector. He stated that the employment in agriculture sector increased from 41.1% in the year 2001-02 to 43.5% in 2010-11. The share of males was higher in 2001-02 as 37.2% while in the year 2012-13 it showed as 33.1%. He further noted the female employment in agriculture sector increasing trends rising from 64.5% in the year 2001-02 to 74.9% in 2012-13, while province wise excessive hours in agriculture indicated in 2012-13 as 30.9%, 23.9%, 13.8% and 36.4% for Punjab, Sindh, KPK and Baluchistan (both sexes) respectively. These values for males were 29.00%, 24.1%, 13.1% and 36.4% while the females employed for excessive hours values were 64.6%, 45.7%, 46.8% and 45.5% for these provinces.

Muhammad Hafeez (2009) and (2014) in an endeavor of involving labor force in livestock sector, under the topic of “Livestock economic and business management” and yet in another effort of “Livestock Micro-Economics” deliberated the investment as positively and directly related to increased Livestock productivity towards milk, meat and by products adding a handsome share in the GNP and GDP of the country throughout 4-5 decades, hence played a silent but potential role in Pakistan economy.

#### **CONCLUSIONS:**

- i. Observations through SAARC data, comparing with other seven countries of this region the life expectancy was recorded as 63.9, 64.6 and 62.5 years for the recent years 2013, 2014 and 2016 respectively for Pakistan.
- ii. The Human Development Index (HDI) for Pakistan evidenced little less than other heavily populated countries such as India, Sri Lanka and Bangladesh.
- iii. SARRC countries updates are important for our country and the regional member countries for comparison which will help Graduates students, Researchers, Planners and Teachers simultaneously.
- iv. Investment in Agriculture, Livestock and Industrial Sector in SAARC, specially Pakistan, will have positive impact on GDP growth.

#### **RECOMMENDATIONS:**

- a. FDI inflow from various developed and economically better countries, to Pakistan provided good financial support in various sectors, including agriculture sector hence be continued particularly the sub-sector.
- b. It is recommended for Researchers, Planners, Teachers and Graduate Students that work on recent years say 03-04 years from today will be much helpful rather than repeatedly putting on self for just an exercise, of time series since 40-50 year back.

- c. As the economic indicators are not changing every day but rates of commodities, specially agricultural product, Livestock products, and market rates, Consumer Price Index (CPI) and Inflation together with Monetary Exchange Rates (MER) of Pakistan and various countries change from time to time, going back for 20-30 years or more will not give a statistical sound narration hence be limited to very recent past.
- d. Further studies on the utilization of FDI in various sub-sectors of agriculture namely seeds, fertilizer, pesticides, peddy, rice, wheat, cotton, sugarcane and by products alongwith Livestock sub-sector be carried out, in the country.

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Note: This research article is part of the M.Phil (Economic) thesis of Basharat Mehmood, PMAS, AAU, Rawalpindi, Pakistan (2017) with more than 70 literature (Reprints), available, and can be benefited.