A Study on Dynamic Links between Resources, Work Engagement and Job Performance in Academia of Pakistan

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ABSTRACT

Highly competitive workplace trends of 21st century have set new performance standards for academic staff. Now the academicians are expected to engage in multiple tasks resultantly they need extra energies and skills. The motivational hypothesis of job demands-resources model states that resources play a vital role in installing energies and performance. Following this proposition, the current study examined dynamic linkages between resources, work engagement and job performance of academic staff working in universities of Pakistan. Using a cross section survey design, self reported data was collected on variables of demographics, resources, work engagement and job performance from 1184 academic staff working with 12 universities of Pakistan. Demographic data were analyzed by descriptive statistics, whereas structural equation modeling was performed to know the linkages between selected variables. The demographic results revealed that the majority of academic staff were married, within the age of 20-40 years and were holding job positions of Lecturers and Assistant Professors, thus their job experience was between 05 and 15 years. The results of structural equation modeling showed that resources were significantly linked to work engagement and work performance, where work engagement acted as a mediator variable between resources and work performance variables. It is concluded that resources are vital elements of better performance. Therefore, efforts should be directed towards the appropriate acquisition, distribution and utilization of resources, so that the job performance of teaching staff in Pakistan could be enhanced to the desired level.

Keywords: Job Performance, Work Engagement, Resources, Academia
JEL Classifications: M1, M3

1. INTRODUCTION

The dawn of 21st century has brought with itself new trends that have changed the working environment inside modern organizations. Now organizations are characterized by flexibility, adaptability, innovativeness and continuous focusing on improvement. Such organizations rely on highly skilled, talented and best performing employees for ensuring success (Sarlak and Nikzad, 2010). Therefore, attention needs to be paid for designing work environment that could contribute towards the improvement of employees' performance. In this regard, the concept of work engagement has recently received much attention for its potential role in boosting up the employees' performance (Tims and Bakker, 2013). Although, every day connotations of work engagement includes commitment, involvement, enthusiasm, zeal, dedication and energy (Schaufeli, 2013). However, work engagement is a

fulfilling and positive state of mind that is characterized by a sense of vigor, absorption and dedication at work (Schaufeli et al., 2002). It is also a positive state of mind, where employees constantly speak optimistically about the organization, they have a desire to be a member of the organization and they spend extra efforts for the success of organization (Baumruk, 2006).

The dynamic linkages among job performance and work engagement is causal in nature. The work engagement does not directly boost up employees' performance rather than it has certain drivers known as resources (Saks, 2006). Resources are positively related with work engagement through their rewarding effects. Resources promote job performance through the contributory role of work engagement, because engaged employees experience positive emotions and enthusiasm. They often have better physical and psychological health. Moreover, they can mobilize their

resources and transfer feelings of engagement to other employees (Bakker and Evangelia, 2008). The positive emotions broaden employees' behavioral repertoire by eventually developing their skills and resources (Fredrickson and Branigan, 2005). Healthier employees can effectively utilize their skills, abilities and knowledge. They can also transfer their energies to other employees and teamwork could be build within the organization. That is why, the engaged employees can successfully achieve organizational goals (Bakker et al., 2008).

Despite of wide recognition, the review of existing literature shows that there is less empirical research conducted on the concepts of work engagement and job performance (Kim et al., 2013; Markos and Sridevi, 2010; Rich et al., 2010; Saks, 2006) particularly among teachers in developing countries like Pakistan. Such situation has identified a research gap and urged researchers to study the concepts of work engagement and job performance in academia of developing countries. Filling such gap will be helpful in understanding the linkage between utilized resources and achieved performance outcomes by educational institutions (Lassibille, 2013). In this way educational institutions can allocate resources according to the performance requirements. The properly allocated resources will act as drivers of work engagement, where work engagement will instill better job performance through its contributory role. Thus, the objectives of educational institutions will be achieved and educational system in developing countries could be developed as whole.

The higher education system of Pakistan has gradually evolved, but it experienced a paradigm shift during the year 2002, when a huge amount of budget was allocated for increasing the number of universities, number of graduates and research activities in the country. As a result of this investment, the number of universities increased from 82 in year 2002 to 154 in year 2013 (HEC, 2013). Similarly, the number of PhD scholars increased from 3279 in year 2002 to 8142 in year 2012 (NEWS, 2012). Moreover, by the end of year 2013 number research centers in Pakistan reached up to 135 (IWSN, 2013). Currently the majority of universities are engaged in different university-industry mutual projects and such developments will have a positive effect on the economy of Pakistan by creation of experts and technological solutions in different areas. In order to know the effect of such developments at the individual level, this study has examined the relationship between the resources possessed and performance outcomes achieved by academic staff members in universities of Pakistan. Such association will be studied by investigating the contributing role of work engagement variable in resources-performance interaction. As earlier explained that work enagagment is emerging technique for the improvement of the employees' performance, through successful utilization of resources, where resources are important drivers of work enagagment. This study has examined whether the resources possessed by academic staff members in Pakistan act as the drivers of work engagement? Do resources have positive effects on the job performance of academic staff members? Is work engagement playing a contributory role in resources-performance link? After the collection and analysis of data, the results revealed that resources were significant predictors work engagement and job performance, where work engagement

partially mediated the positive association between resources and job performance. It is therefore concluded resources are vital elements of better performance in academia of Pakistan. Efforts should be directed both at individual and institutional levels towards proper distribution and utilization of resources for enhancing the academic staff performance. In this way the goals of higher education institutions could be successfully achieved.

2. ASSUMPTIONS OF THE CURRENT STUDY

The association between resources and job performance can be better understood through model on work engagement developed by Bakker and Demerouti (2008). This model states that resources predicts work engagement and job performance by their independent and combined effects. Resources initiate a motivational process by acting as drivers of work engagement. Once engaged, the employees can perform better by having feelings of vigor, absorption and dedication. In this way work engagement becomes a contributing factor in resources-performance interaction. Figure 1 shows the research model. Keeping in view Bakker and Demerouti's (2008) model, the current study has formulated the following hypotheses:

H01: Resources will be significant predictors of job performance
H02: Resources will be the significant predictors of work engagement
H03: Work engagement will be directly linked to the job performance
H04: Work engagement will mediate the association among resources and job performance.

3. METHODOLOGY

This section explains the methodology of the study.

3.1. Respondents
The respondents of present study composed of teaching staff in the pre-selected universities and higher education institutions of Pakistan. As it was not possible to collect data from all of the universities in Pakistan, therefore a multi-stage sampling was taken by firstly selecting three regions of Pakistan, i.e., Islamabad, Khyber Pakhtunkhwa and Northern Punjab and as separate clusters. Details about three geographical regions is mentioned in Table 1.

In the second step, twelve universities were selected on the basis of following population parameters of interests:
1. Only those universities were selected which were geographically assessable.

Figure 1: The research model
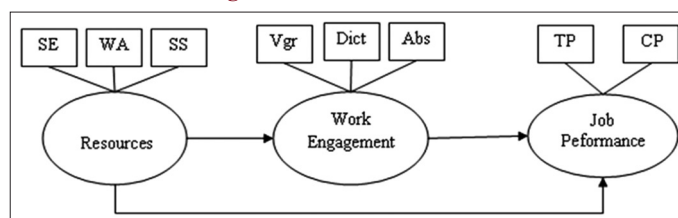
2. Thescience and technology based universities were selected because they are actively engaged in activities related to science and technology. Such universities can provide technological solutions to the stakeholders. The International Standard Nomenclature set by UNESCO has included Natural Science, Engineering, Medical and Agricultural Sciences as technological areas (UNESCO Nomenclature, 1988).

3. Finally, universities with many departments and programs were selected because teachers working within big universities are expected to suffer from a broad range of work stressors.

Table 2 shows that the universities are selected according to population parameters of interests. The universities are both from public as well as private sectors and are existing within the accessible geographical regions. Finally, these universities are related to science and technology.

The respondents in each cluster were divided into strata according job positions. In the last stage, a Simple Random Sampling method was utilized for choosing academic staff within each stratum. It was done because the number of academic staff was fixed and previously known from the websites of universities. Thus, each sampling unit had equal probability to be selected from each stratum. The sample size was taken in proportion to size of stratum through following formula provided by Yamane (1967. p. 886).

$$n = \frac{N}{1 + N(e)^2}$$

Where (n) is a sample size, (N) is population size, and (e) is the level of accuracy or percentage of the confidence interval. For small population sizes the precision levels were kept high and vice versa. Following the formula mentioned above, a sample

Table 1: Distribution of universities in three geographical regions

Geographical regions	Number of universities	Number of teachers
Islamabad region	16	2300
North Punjab region	07	675
Khyber Pakhtunkhwa region	13	1770

Table 2: Details of academic staff in twelve universities

Universities	Teaching staff
Islamabad	
Riphah University (International)	265
Islamic University (International)	263
COMSATS Institute Information Technology	275
National University of Science & Technology	282
Iqra National University	120
Punjab (Northern)	
University of Wah	115
University of Engineering & Technology, Taxila	173
University of Agriculture, (Arid), Rawalpindi	112
Khyber Pakhtunkhwa (Central)	
University of Engineering & Technology, Peshawar	208
Peshawar University	251
Agriculture University, Peshawar	226
SUIT, Peshawar	190
Total	2480

size of 1184 was obtained from a total population of $N = 2480$. The sample consisted of 128 Professor, 215 Associate Professor, 356 Assistant Professors and 485 Lecturers.

3.2. Data Collection and Screening
The data was collected through self reported and administered online questionnaire. Within a time of 6-7 months 912 questionnaires (filled) were recorded in the online database. As suggested by Tabachnick and Fidell (2007) the filled questionnaires should be checked for missing responses and outliers. The results of data screening revealed that out of total 912 questionnaires, 163 cases had missing data and outliers, therefore such cases were deleted and finally 749 questionnaires were selected for further analysis. It was also ensured that the data is free from the problems of multicollinearity and homoscedasticity.

3.3. Scale Selection
A self reported and administered questionnaire was made that which included following parts.

3.3.1. Socio-demographics
Information about variables like age, marital status, gender, job positions and working experience.

3.3.2. Job performance
Job performance was assessed by 10 items of job performance scales made by Goodman and Svyantek (1999) and Williams and Anderson (1991).

3.3.3. Resources
Social support was assessed by 04 items of social support scale made by Iverson et al. (1998), whereas self efficacy was measured by 04 items of self efficacy scale made by Schwarzer and Hallum's (2008) and work autonomy was assessed by 04 items of Breaugh's (1999) scale.

3.3.4. Work engagement
It was measured by 09 items of Utrecht work engagement scale made by Schaufeli et al. (2006).

3.4. Statistical Analysis
Frequency tables were used to present demographic data. The reliability of instrument was determined by calculating Cronbach's alpha Pearson correlation coefficients. Confirmatory factor analysis with maximum likelihood technique was run to check the construct validity of scales, whereas structural equation modeling was performed to know the linkages between resources, work engagement and job performance through maximum likelihood estimation technique. The structural equation modeling was preferred because it can provide additional information about the fit of research model followed by controlling of measurement errors (Holmbeck, 1997). Therefore, model fit was initially determined by using fit indices like Chi-square (χ^2), normed Chi-square (χ^2/df), normed fit index, Tucker-Lewis index, root mean square residual, root mean square error of approximation, goodness of fit index, comparative fit index. The research model consisted of three indicators (work autonomy, social support, self efficacy) of latent variable of resources, furthermore, itconsisted of three indicators

(vigor, dedication, absorption) of latent variable of work enagament. Finally, it had two indicators (task performance, contextual performance) of latent variable of job performance. In order to test the hypotheses, a structural equation modelling approach recommended by Holmbeck (1997) was applied. According to this approach initially there should be adequate model fit between predictor (A), mediator (B) and outcome variables (C). Later on the direct path between A-C, A-B and B-C should be significantly related. Finally to test whether is any mediation effect or not, two conditions should be applied, i.e., (a) A-C path is constrained to zero and, (b) A-C path is not constrained. The improvement in model fit and path significance should be examined because in case if there is no improvement in the fit of the constrained model after inclusion of direct A-C path, then there is full mediation. However, in case if direct A-C path remains significant and the model fit improves then there is partial mediation. The improvement in model fit is assessed by checking the significance level and the difference between Chi-square values of two models.

4. RESULTS

This section discusses the results of the study.

4.1. Demographic Characteristics
The previous research shows that the study of demographic profile of respondents should be studied because it has significant effects on the overall results of the study. Table 3 shows the demographic profile of the respondents. The result shows that 478 (64%) were male, while 271 (36) were female. Moreover, 318 (57.51%) were married and 431 (42.49) were single. The age of respondents varied according job positions that is why the majority of teachers 650 (86%) were in age category of 20 to 40 years holding junior job positions of Lecturer and Assistant Professor. In fact, human life consists of three distant phases by starting from early adulthood transition of 20s age, then to midlife transition of 30s age and the last is late adulthood transition of 40s age (Levinson and Darrow, 1978). The demographic profile of respondents showed that majority 650 (86%) respondents were either in their early or mid adulthood transitions. Researchers have found that such age group is more prone to stress as it is characterized by frequent adoptions to life changes and struggle for career development (Kail and Cavanaugh, 2008).

4.2. Reliability Analysis
The results for reliability showed all scales possessed sufficient internal consistencies. The Cronbach's alpha coefficients were above 0.70, which is a desirable range (Nunnally, 1978). Furthermore, the correlation analysis showed that all items were correlated with total mean scores of the scales, thus determining their internal consistency. The correlation coefficients were below 0.90 that means the data was free from multicollinearity problem. The results of reliabilility analysis and correlation matrix are presented in Table 4 for ready reference.

4.3. Model Fit
A confirmatory factor analysis was run, where the results of model fit showed that the selected scales had construct validity. The factor loadings ranged from 0.60 to 0.80, whereas the correlations between all items ranged from 0.45 to 0.68. Furthermore, the model fit indices were in the suitable ranges. Table 5 shows that two-factor model was selected for job performance, whereas three-factor models were selected both for resources and work engagement variables.

4.4. Hypotheses Testing
The hypotheses of the current study were tested by strategy outlined in the statistical analysis section. Initially the hypothesized model M1 fitted to data. All of the fit indices are within acceptable ranges. The resources were positively related to job performance ($\beta = 0.96$, $P < 0.01$). Similarly, the resources were also positively related to work engagement ($\beta = 0.79$, $P < 0.01$). Finally, work engagement was positively related to job performance ($\beta = 0.12$, $P < 0.05$). The results of structural equation modeling is presented in Table 6 for ready reference. Such findings have provided a rationale to continue mediation

Table 3: Demographic profile of the respondents

Socio-demographic profile	n (%)
Sex	
Male	478 (64)
Female	271 (36)
Age (years)	
20-30	391 (52.22)
31-40	259 (34.53)
41-50	59 (7.881)
Above 50	40 (5.352)
Marital status	
Unmarried	318 (42.49)
Married	431 (57.51)
Working positions	
Lecturers	297 (39.71)
Assistant Professors	207 (27.59)
Associate Professors	144 (19.21)
Professors	101 (13.49)
Working experience (years)	
<05	96 (12.81)
06-10	295 (39.37)
11-15	190 (25.35)
16-20	102 (13.63)
21-25	36 (4.801)
Above 30	30 (4.001)

Table 4: Results of reliability analysis

Variables	Cronbach's alpha	Correlation analysis				
Job performance	0.93	Job performance	Social support	Self efficacy	Work autonomy	Work engagement
Social support	0.84	0.61*	1			
Self efficacy	0.89	0.67*	0.45*	1		
Work autonomy	0.90	0.64*	0.49*	0.54*	1	
Work enagemenet	0.91	0.68*	0.47*	0.55*	0.52*	1

*Significant at 0.01 level

Table 5: Results of model fit

Variables	Models	χ^2	df	χ^2/df	CFI	RMSEA	RMR	GFI
Job performance	Two factor-model	333	102	3.26	0.97	0.072	0.018	0.95
Resources	Three factor-model	4.02	2.0	2.00	1.00	0.010	0.002	0.99
Work engagement	Three factor-model	36.4	10	3.64	0.99	0.083	0.008	0.98

CFI: Comparative fit index, RMSEA: Root mean square error of approximation, RMR: Root mean square residual, GFI: Goodness of fit index

Table 6: Results of structural equation modeling

Models	χ^2	df	χ^2/df	RMR	NFI	TLI	CFI	GFI	RMSEA
M1 hypothesized model	25.5	17	1.5	0.004	0.99	0.99	0.99	0.99	0.026
M2 direct effect model (without work engagement)	9.5	04	2.37	0.004	0.99	0.99	0.99	0.99	0.043
M3 direct effect model (without performance)	9.3	08	1.16	0.004	0.99	0.99	0.99	0.99	0.015
M4 direct effect model (without resources)	5.1	04	1.27	0.002	0.99	0.99	0.99	0.99	0.001
M5 hypothesized model (constrained)	297.4	18	16.52	0.043	0.95	0.95	0.94	0.91	0.144
M6 hypothesized model (Non constrained)	25.17	17	1.5	0.004	0.99	0.99	0.99	0.99	0.026

RMR: Root mean square residual, NFI: Normed fit index, TLI: Tucker-Lewis index, CFI: Comparative fit index, GFI: Goodness of fit index, RMSEA: Root mean square error of approximation

analysis, but before conducting mediation analysis, a series of separate models were tested to know both direct and indirect relationships between the variables.

The M2 model also fitted the data well. The resources as predictor variables were significantly related with outcome variable of job performance (β = 0.90, P < 0.01). Later on the direct relationship between resources and work engagement was checked in M3, which showed that both were significantly related (β = 0.79, P < 0.01). Finally, the direct relationship between work engagement and job performance was checked in M4, which was also significant (β = 0.88, P < 0.01). Such direct relationship between predictor, mediator and outcome variables prove that basic prerequisite for mediation analysis exists. Moreover the hypotheses 01, 02 and 03 were accepted.

In order to test whether mediation exists or not, the path between predictor and outcome variables was constrained to zero and later on not constrained in respective models M5 and M6. The results show that after constraining hypothesized model M5, the model fit was decreased, however the relationship between predictor and outcome variables remained significant. The model fit was improved in M6 as clear from Chi-square difference test $\Delta\chi^2$ (272) = 1, P < 0.001. It means that work engagement acted as mediator, however such mediation was partial because the relationship remained significant in both constrained and non constrained models, thus hypothesis 04 was accepted. Figure 2 presented the standardized path coefficients for ready reference.

5. DISCUSSION ON FINDINGS

Changes in the modern workplace have brought new challenges and performance standards for academic staff. Researchers are now exploring different ways of boosting academic staff performance in order to meet performance requirements of universities. In this regards Bakker and Demerouti's (2008) model on work engagement has explained the way to boost up the employees' performance. According to this model, the resources have potential for boosting performance because resources can create feelings of vigor, dedication and contentedness, which can help the employees

Figure 2: Final model with parameter estimates (standardized path coefficients)
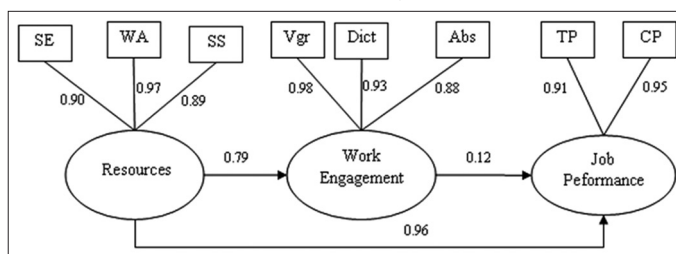
to perform better. Following the propositions of model on work engagement, this study has investigated the dynamic linkages among resources, work engagement and job performance of teaching staff working in universities and educational institutions of Pakistan. The results showed that both resources and work engagement were significant predictors of job performance, where the variable of work engagement had partially mediated the link between the variables of resources and job performance. It means that resources are the crucial elements of good performance in the universities.

The results of this study are in concurrence with the findings of previous research on mediating role of work engagement, e.g. Chung and Angeline (2010) conducted a study on the mediating nature of work engagement among working adults in Malaysia. The results revealed that work engagement had partially mediated the resources-performance interactions. Similarly, Bakker and Bal (2010) conducted a study on the weekly work engagement and performance of Dutch teachers. The results confirmed that work engagement played a role of mediator in the relationship between resources and performance. Finally, Torrente et al. (2012) studied the link between social resources and team work engagement and found that work engagement had acted as a potential mediator between social resources andperformance of the team members. It means that the mediating effect of work engagement is not just confined to individual level. Thus, it has been recognized through the findings of previous and existing research studies that work engagement has a contributory role in the employees' performance enhancement process and there exists linkages between resources, work engagement and job performance.

6. APPLYING THE MODEL OF WORK ENGAGEMENT TO THE ACADEMIA OF PAKISTAN

The work engagement model focuses on the development of employees' psychological capacities and resource strength. This model has set forward directions for establishing an effective workplace to meet the performance expectations in modern organizations. The current study has empirically tested this model in academia of Pakistan, thus set forth important practical implications for the higher education system of Pakistan. These implications can be broadly divided into individual, institutional and policy levels. As the model of work engagement focuses on proper acquisition and utilization of resources, therefore at the individual level the teaching staff should focus on acquiring knowledge regarding the available resources, so that such resources could be effectively utilized to instill job performance. Awareness about resources is important because in practice the resources are often scarce. Such condition can prevent the teachers from effectively accomplishing diverse goals and performance expectations (Cheng and Tsui, 1999). The proponents of work engagement model have pointed out the importance of group level resources, e.g. (Bakker and Leiter, 2010). The academic staff in universities of Pakistan should try to develop teamwork and coordination so that complex task could be completed easily. Thus, the employees' performance is a combined effort and it can be further increased by teamwork because transferring positive experiences have synergy effects (Bakker and Evangelia, 2008). At the institutional level universities should promote open consultation between academic staff and management of the university, particularly while implementing new rules and policies. The peer coaching system of continuous feedback can help the teaching staff to better comprehend the requirements of job and adapt to changes in the surrounding environment. Moreover, the management and administration of universities should also focus on improving the physical working environment because previous research on work engagement e.g. Hakanen et al. (2006) found a negative relationship between workplace stressors and work engagement. At the policy level, the Ministry of Education Pakistan shouldincrease budget of the universities. Previous researchers like e.g., (Winefield et al., 2008) mentioned that universities should be provided sufficient resources to engage them in research and development related activities. It is also suggested that legislation related to workplace design should be formulated. It can be done if the Ministry of Education Pakistan creates a central database for collecting and analyzing information regarding academic and research activities performed by academic staff. The policy makers in Pakistan can avail such information for formulating policies for development of the education system (particularly higher education) of Pakistan. These efforts will be helpful because in some cases the policy makers and governors by themselves don't have sufficient awareness about the requirements of the education system, therefore they may devise incompatible policies that can further worsen the problem.

7. LIMITATIONS OF THE STUDY AND FUTURE RESEARCH DIRECTIONS

This study has certain limitations and is also suggesting certain future research directions. First, this study has examined the perceived subjective data. It will be more valuable that future research studies examine both the subjective as well as objective data, especially on variables like job performance that is more objective in nature. Second, the current study has gathered individual level data. It is highly recommended that group level data should be collected in future research studies because universities are complex organizations, therefore multi-level analysis can yield more significant findings. Third, it was a cross section study where the results cannot be generalized on any other time period that is why future researchers should conduct longitudinal studies on job performance among academic staff in Pakistan. Fourth, this study has collected data from three regions of Pakistan, which might have limited implications, therefore future research studies should focus more on national or cross national levels. It can help in understanding the variations in the linkages between resources and job performance across the nations. Fifth, this study has only investigated the mediating role of work engagement. The future studies should examine reversed causation and reciprocal analysis as resources have a positive gain spiral, i.e., existing resources help in generating further resources which in return helps in boosting job performance. Finally, the current study utilized job demands resource model for examining the relationship between resources and job performance. The future research can test other models like Grebner et al. (2010) success resource model.

8. CONCLUSION

In this knowledge era, people are more dependent on the accumulation and effective utilization of knowledge. Academicians play a significant role in creating and disseminating knowledge for the socioeconomic development of society as a whole. Thus, academicians are valuable assets and their scholarly efforts have a significant impact on the success of any country. The educational institutions should focus on the development of their academic staff by providing them required resources and support. Especially, the Pakistan's government should allot sufficient resources for the growth and development of its educational system so that the human resource and technological needs of the country could be successfully fulfilled.

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