Influence of Psychological Empowerment on Innovative Work Behavior through Employee Engagement: Empirical Evidence from Software Industry of Pakistan

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# Abstract

This study proposed and tested a model that examines the relationship in which psychological empowerment influence innovative work behavior. This study also analyses the mediating role of employee engagement in this relationship. Data sample collected from 260 employees working in the software industry of Pakistan. Results revealed that psychological empowerment positively influenced the innovative work behavior. Employee engagement partially mediates the relationship between psychological empowerment and innovative work behavior. The findings of this study also provide significant implications for software sector management to streamline and implementation of psychological empowerment to enhance the innovative work behavior.

**Keywords:** Software industry, Psychological empowerment, Employee engagement, Innovative work behavior

# Introduction

Due to the rapid changes in technology advancement, inventive explanations to complicated problems are critical for survival. Organizations need consistent improvements in its products as well as processes and employee work-related behavior has a positive impact on organizational effectiveness. The survival of organizations and long term achievements are associated with employee innovative behavior because innovative employees invent and apply new ideas within the organization. Tidd and Bessant (2009) viewed that organizations survival require continuous improvement in its behavior through changing products, process or organizations model in a competitive environment. In today’s turbulent business environment, innovative behavior has been considered a significant factor for organizational success (Calantone, Cavusgil, & Zhao, 2002; Martins & Terblanche, 2003; Yuan & Woodman, 2010). Innovative minds hold the actions directed toward executing changes either using fresh information or refining procedures in order to develop professional behavior related to both individual and occupational (Jong & Hartog, 2008).

There has been massive growth in scholarly work on Innovative Work Behavior (IWB) during the last few decades. Almost all organization practices have been examined with the lens of Innovative Work Behaviors (IWB). This ever-increasing interest in the Innovative Work Behavior (IWB) greatly attributed with two interconnected factors. Firstly, employees want empowerment at the workplace by nature. Secondly, organizations are considerably involved in individuals’ insights about empowerment as studies revealed that this practice plays an important part in constituting attitude and behavior of the workers. The creative ideas and endeavors of the employees are important for the development of the organizations (Bharadwaj & Menon, 2000; Sousa & Coelho, 2011). Past researchers agreed that employee innovation stems from individual behavior at the workplace (Carmeli et al., 2006; De Jong, 2006; Abdullatif, Johari, & Adnan, 2016) and empowerment leads towards the high level of creativity and innovation (Amabile, 1988; Spreitzer, 1995b).

Psychological empowerment has been classified into four psychological states which are significant to an individual’s feeling of control over work. The construct of psychological empowerment consisted of four cognitions as meaning, competence, self-determination, and impact. The study on psychological practices regarding various individual and contextual antecedents that influence innovative work behavior is still under investigation and inconclusive (Yuan & Woodman, 2010).

Employee engagement refers to a situation where an individual involves himself in his work (Kahn, 1990). Employee engagement has been attributed with a group of emotional states which are manifested in vigor, dedication, and absorption (Schaufeli et al., 2002). Workers are more engaged in a situation that offered them more psychological meaningfulness and psychological safety, especially when they were more psychologically available (Saks, 2008). Employee engagement is imperative in getting a competitive advantage in contemporary knowledge-based economy (Akhtar, 2016). The highly engaged employees at the workplace

Are considered to be more innovative (Mehmetoglu, 2011). Bhatnagar (2012) found that psychological empowerment fosters employee engagement, which then leads to higher levels of innovation.

A recent study indicates that scant research has been conducted in the software sector particularly in the perspective of Pakistan, which creates a huge gap in the literature (Sharif and Nazir, 2016). After the failure of IT industry, it has been viewed that IT industry is once again resurrecting as indicated by the recent report of World Economic Forum on IT (Global Information Technology Report, 2015) when IT Industry has ranked up at 97th from 111th (Pakistan Global Ranking in ICT, 2014-2015).This study among the pioneer attempt to explore the relationship of psychological empowerment on innovative work behavior with the mediating role of employee engagement among the employees of the software industry of Pakistan.

* 1. *Objective of the Study*

Following objectives are designed to address the above-mentioned study problem:

* To analyze the influence of psychological empowerment on innovative work behavior.
* To analyze the influence of psychological empowerment on employee engagement.
* To analyze the influence of employee engagement on innovative work behavior.
* To analyze the mediating role of employee engagement in the relationship between psychological empowerment and innovative work behavior.

# Literature Review

* 1. *Psychological Empowerment*

Psychological empowerment has now considered as a foremost element to organizational effectiveness. Conger and Qanungo (1988) revealed that empowerment is a motivational construct and is like “an approach of developing the feelings of self-efficacy between the employees by exploring the factors which advance powerlessness and by removing them whether through conventional practices or using new techniques and useful information”. Thomas and Velthouse (1990) ascribed empowerment being intrinsic motivation which is composed of multidimensional cognitions: meaning, competence, self-determination, and impact. Spreitzer (1995) demonstrated that the component of empowerment helps to bring positive change in individual behavior and improve the decentralized decision making at an organizational level while increasing the role of lower level employees. Empowerment has been observed from two aspects “cognitive or motivation aspect” and “participative aspect” (Robbins, 2005). In a cognitive or motivational aspect, workers feel responsible for the task which they have selected at their own. In participative aspect, significant autonomy is given to workers in job designing and decision making.

Jose and Mapilly (2014) demonstrated that empowered employees have lower intention to quit and more optimistic toward job performance than those employees who have a lower level of psychological empowerment.

The relationship between psychology empowerment and employee engagement has been explained by the Social Cognitive Theory (Bandura, 1986). According to the Social Cognitive Theory, an individual’s past experiences, which factor into whether behavioral action will occur. These past experiences influences reinforcements, expectations, and expectancies, all of which shape whether a person will engage in specific behavior and the reasons why a person engages in that behavior.

Jose and Mapilly (2014) stated that psychological empowerment associates to how individuals sense of significance in an empowered work environment. They further added that individuals who feel more competent about their skills to achieve their work successfully feel more satisfied and committed to their work. They demonstrated that this type of employees has a lower intention to quit and more optimistic job performance than those employees who have a lower level of psychological empowerment.

* 1. *Psychological Empowerment and Innovative Work Behavior*

The concept of innovation is ascribed with Schumpeter (1934), who described the innovation process as the creation of the new brand, product, services, and processes. The “innovation” has been defined generally by ideation and the application of new ideas, while the ideation originated from creativity component (Shalley & Zhou, 2008; Mc Lean, 2005). Shalley and Zhou (2008) added that “creativity” is an interactive process which involves reflection and action, seeking feedback, experimenting and discussing new ways to do things rather than just relying on habit or automatic behavior. Mclean (2005), the term creativity and innovation are often used interchangeably in research studies. Creativity has to do with the production of novel and useful ideas whereas innovation has to do with the production or adoption of useful ideas and also ideas implementation (Amabile, Barsade, Mueller, & Staw, 2005; Khan, Rehman, & Fatima, 2009).

According to Dombrowski, Kim, Braganza, Papagari, and Baloh (2007), creating, adopting and actualizing, innovations rely on workers' innovative conduct in the work environment. Innovative conduct can be characterized as the purposeful generation, advancement, and acknowledgment of new thoughts inside of a workplace, work gathering, or organization with a specific end goal can get an advantage as part execution and a team (Terblanche, 2003).

Worker innovative behavior is a critical source which empowers an organization to get success in a dynamic business environment. Kielstra (2016) demonstrated that commitment of employees in an organization is essential to adopt and implement the innovation. Kielstra (2016) further revealed that innovative behavior can instill in the employees by supporting the innovation process. Innovative work behavior refers to employee behavior for production and implementation of new and useful ideas for the advantage of individual, organization, and society (Nehles & Janssen, 2015). The idea of innovative work behavior is regarded as similar to the innovation process. It also includes a process which comprises of several dimensions. They revealed that IWB being a process differentiate between “idea generation, idea promotion and interrelated behaviors” in which employees are expected to involve in every combination of these behaviors at every one time. Individuals are considered innovation generator because they practice daily with process and products and discover possible advancement and

Opportunities for new development. Thus, employee certain behavior leads to innovation which shows that activities intended to generate and implement thoughts. During the innovation process, employees rely on their competencies and use their discretionary behavior where they generate, support and implementing new ideas (Ramamoorthy, Flood, Slattery, & Sardessai, 2005). Consequently, this help in the creation of innovative work behavior which supports organizations in the turbulent environment (Javed, Naqvi, Khan, Arjoon, & Tayyeb, 2017b). Afsar and Badir, (2016) reported that psychological empowerment deals with the complexities associated with the implementation of innovative work behavior.

Earlier researchers have found that organization which grant autonomy, control and sense of ownership to their employee experienced the greater innovation in their work (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Similarly, Sun, Zhang, Qi, & Chen, (2012) observed that freedom and choice in task accomplishment increase the innovativeness among employees. Earlier studies have indicated that empowered employees tend to be more confident towards innovativeness and resultantly this innovativeness add values in organizations (Alge, Ballinger, Tangirala, and Oakle, 2006). Empirically, numerous past researchers have shown that psychological empowerment is significantly associated with innovative work behaviors. (Zhang & Bartol, 2010; Seibert, Wang, & Courtright, 2011; Singh & Sarkar, 2012; Çekmecelioglu & Özbag, 2016). Blegan, Faan, and Spetz (2016) has revealed that psychological empowerment has a positive relationship with innovative work behavior. Tuan and Venkatesh (2010) found that psychological empowerment enables the individuals to respond to the innovative processes immediately. Orth and Volmer, (2017) argued that psychological empowerment provides the meaning, competencies, autonomy and feedback for innovative work behavior. Following these theoretical linkages, this current study is focuses on the influence of psychological empowerment on innovative work behavior among software industry employees of Pakistan. Thus following hypothesis is drawn:

**H1:** *Psychological empowerment positively affects employee innovative work behavior* of software industry employees

* 1. *Psychological Empowerment and Employee Engagement*

Engagement refers to a level of psychological presence in an activity. It represents the association of the workers in their working environment and the strength of their connection with it. Kahn (1990) presented the concept of employee engagement as the individuals personally engaged in their work role by emotionally, cognitively and physically in their role performance. It comprises of the physical, intellectual and enthusiastic associations of the workers toward their work role. Engagement is described as intellectual traits including optimist, satisfying distinctive cognitive qualities toward one’s work role attributed three distinctive emotional states (Schaufeli et al., 2002). Bukhshi and Gupta (2016) demonstrated that engagement represents to the extent to which one put discretionary effort into their work, in the shape of extra time, brainpower and energy.

The literature on employee engagement revealed that engaged individuals lead to various advantages, such as high job satisfaction, high productivity and increase organizational performance (Huang, Ma & Meng, 2017). Bakhshi and Gupta (2017) briefed that individuals’

Engagement is crucial for organizational success because engaged individuals’ are able to face challenges at the workplace and create something new in critical conditions. They suggested that employee engagement can be enhanced through intrinsic motivation and working environment. Thus, this study drew the following hypothesis:

**H2:** *Psychological empowerment positively affects employee engagement of* software industry employees

* 1. *Employee Engagement and Innovative Work Behavior*

According to Schaufeli and Bakker (2010) engagement refers to great energy, resilience, a keenness to invest effort on the job, ability to work even in difficult situations. Schaufeli et al., (2002) revealed that engagement refers to the interest of individuals in their work even in complex situations. He noted that engagement is a positive experience. “Active Engagement” refers to employee interest in his work, take initiative and assume responsibility (Dvir, Eden, Avolio & Shamir, 2002).

According to Hobfoll’s Conservation of Resources Theory (1989), people try to build up resources and these resources exist in combination with each other that result in positive outcomes like engagement. Following this theory, Bouckenooghe and Menguc (2002) argued that this theory evokes positive feelings about work, which then triggers involvement in creativity.

Dervitsiotis (2010) briefed that measuring the capability of innovation in the system, one has to identify the important variables in the system which decide the effectiveness of innovation for a firm, results received from innovation and association which connect each other. Past studies showed a strong effect of employee engagement on workplace behaviors, attitude, and performance (Anderson, Potocnik, & Zhou, 2014).

Anderson et al. (2014) demonstrated that employee engagement at workplace has become increasingly focal determinant of innovative behavior. The worker engaged at workplace has the capability to accept and adopt the environmental changes according to demand (Langelaan, Bakker, Doornen, & Schaufeli 2006). The new setting also attracts to the engaged worker and they feel comfortable and movement in this environment easily. Innovative behavior among employees depends upon the principle of intrinsic motivation (Hon, 2012) and proved that employee engagement is a key factor in promoting innovative behavior. Intensified connection between individuals and their work elicit innovation (IPMA-HR, 2010) and so that reason Sundaray (2011) explained that immense need for employees to be elastic, innovative and desire to participate beyond the normal responsibilities.

**H3:** Employee engagement positively affects the innovative work behavior of software industry employees.

* 1. *Mediating Role of Employee Engagement*

Different surveys on employee engagement have reported that companies with engaged

Employees boosted operating income by 19% (Towers Perrin, 2003), 26% high employee productivity, greater ability to attract for talent, less turnover risk and 13 % overall returns (Watson Wyatt, 2011). In the presence of the turbulent business world, the major challenge for an HR professional is to increase the engagement of their employees through the HR system delivery. Harter, Schmidt, and Hayes (2002) define employee engagement as “the individual’s involvement and satisfaction with as well as enthusiasm for work”.

Marcey et al., argues that antecedents of employee engagement are different than the traditional employee outcomes such as job satisfaction and organizational commitment and engagement is the main ingredient of performance management processes. Employees working in the software industry hold the technical and interpersonal skills for service delivery. HR practices such as empowerment equip the software employees with quick decision making and creativity (Guchait et al., 2012), similarly, aligning the reward and compensation with service delivery will increase the internal motivation and engagement toward the enhancement of service performance of employees.

Due to the dual nature of employee engagement, engagement has been studied as antecedent and outcome variable in the human resource management literature. In their study on the UK health care sector, Shantz (2016) found that HRM practices are significantly related to engagement and engagement also significantly mediate the relationship of HRM practices and safety among administrative staff. Similarly, Soane et al. (2013) found that meaningful work increases the work engagement and employee engagement also significantly related to absenteeism level. Moreover, engagement found to be mediating the relationship between the meaningfulness and absence.

In a separate study, Shantz (2013) reported that the relationship of value motive and volunteering time spent is fully mediated by the engagement. Similarly, Alfez, Shantz & Alahakone (2016) found that engagement mediates the relationship between interaction and task performance. In this study, we attempt to explore the mediating role of employee engagement between the relationship of psychological empowerment and innovative work behavior among the employees of the software industry of Pakistan. Following hypothesis is drawn:

**H4**: *Employee engagement mediates the relationship between psychological empowerment and innovative work behavior among software industry employees.*

* 1. *Conceptual Framework of Hypothesize Research Model*

The whole concept is conceptualized as under for easy comprehension:

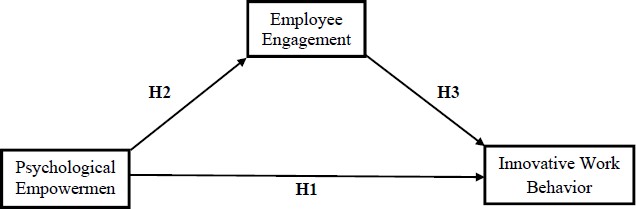


Figure 1. A hypothesized conceptual model

# Research Methodology

* 1. *Population and Sample Size*

The target population of this study is the software houses management-level employees in Lahore. The software sector is known as a highly competitive business sector in the service industry of Pakistan. Bhatnagar (2012) noted that employees in the service sector play an important role in innovation and retention. There are total 350 software houses are working in Pakistan as provided the list by Pakistan Software Houses Association (PASHA) and out of which 125 software houses are located in Lahore, Pakistan. The software houses were selected by following the simple random sampling and every 5th organization was selected from the 125 software houses located in Lahore city. After the selection of software houses to be surveyed, data was collected from managerial level employees through nonprobability convenient sampling method. The reason for selection of this technique is the lack of information about the population framework. The sample size was determined by adopting the rule of thumb for selection by Roscoe (1975). Roscoe (1975) suggested that 30 to 500 sample size is appropriate for research in behavioral sciences. Total of 400 questionnaires were distributed. 268 questionnaires were received with 67% response rate, out of which 08 questionnaires were excluded in the data screening process.

* 1. *Measurement and Instrument*

Previously developed measurement instruments were used in this study to collect the data from software professionals on the studied variables. Ethical permission to use the scales were taken from their respective authors. Detail of all measurement scales is given below.

* + 1. Psychological Empowerment

Twelve items measured scale developed by Spreitzer (1995) was applied to measure the perceptions of employees working in the software industry toward psychological empowerment. Cronbach alpha has been reported in the range of .62 to .88 in previous studies. The sample items include the statement “I am confident on my ability to do my job” and “I

Have a great deal of control over what happens in my department impact” Cronbach alpha in this study was .74

* + 1. Innovative Work Behavior (IWB)

Seventeen items have been adopted from the scale developed by Jong (2008) to measure innovative work behaviors in software industry professionals. The item statements related to idea initiation, implementation and carry out the assignment with independence and freedom. The items statement includes such as “I produce new ideas to improve work practices” and “I actively contribute to the development of new products or services” The Cronbach alpha reported in this study was .69.

* + 1. Employee Engagement

Five items scale developed by Schaufeli et al., (2002) was to be employed to measure employee engagement. The item statement related to employee interest in work, energy from work, knowledge enhancement and encounter challenges during working were included. The sample items include a statement such as “My job makes me enthusiastic” and I like to work intensely”. The value of Cronbach alpha for the measure was .63.

* 1. Data Collection Procedure

A well-structured questionnaire comprising of the above mentioned scale was distributed to 400 employees working in different software houses. First of all, a letter from the institution was presented to the respective key HR managers of software houses for data collection from their managerial level employees. HR managers were briefed about the research objective and its potential implication for software sectors. They were also guaranteed that the data will be kept anonymous and confidential, and is to be used for academic purpose only. After getting approval from the HR manager, questionnaires were distributed to target respondents with the briefing about the objectives of the research and its potential utility for research. The cover letter stressed the research method, objectives of the study and assurance for the confidentiality of data.

The employees were requested to answer on different demographics, psychological empowerment, employee engagement, and innovative work behavior. Any confusion in respect of the questionnaire was addressed at the spot by the researcher.

# Data Analysis and Results

Statistical Software for Social Sciences (SPSS 20) and AMOS 22 has been employed for the purpose of data analysis. Firstly, Normality of data was checked through graphical (histogram with the normal curve) and numerical test (Skewness and kurtosis test). Secondly, reliability was measured through Cronbach alpha and Confirmatory Factor Analysis (CFA) was applied in order to check the validity of the scale. Items statements having factor loading greater than the cut off value i.e 0.40 were retained in the respective scales and used for data analysis. Finally, Hypothesis testing was carried out through AMOS 22.

* 1. *Mean, Standard Deviation and Correlation among Variables*

Following table reflects the means, standard deviation and correlation coefficients calculated using SPSS 20. It revealed that the means of psychological empowerment, employee engagement, and innovative work behavior are 3.38, 3.82 and 3.61 respectively. It is found that employee engagement has the highest mean followed by innovative work behavior and psychological empowerment.

The standard deviation of psychological empowerment, employee engagement, and innovative work behavior are 0.48, 0.58 and 0.42 respectively. Furthermore, the correlation between psychological empowerment, employee engagement, and innovative work behavior are 0.29,

0.38 And 0.53.

Table 1. Model fitness ratio

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Model | .152 | 1 | .152 | .96 | .91 | .93 | .043 |

Table 2. Mean, standard deviation and correlation matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr No.** | **Variable** | **M** | **SD** | **1** | **2** |
| 1 | Psychological Empowerment | 3.38 | .48 |  |  |
| 2 | Employee Engagement | 3.82 | 0.58 | 0.29\*\* |  |
| 3 | Innovative Work Behavior | 3.61 | 0.2 | 0.38\*\* | 0.53\*\* |

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

* 1. *Model Fitness of Confirmatory Factor Analysis*

First of all, the SEM model was calculated in order to test the overall fitness of model as well as a direct effect, indirect effect and significance level which are presented in below table 2 and figure 2. Few researchers have indicated the fitness criteria which were all observed in this model fitness. First of all, CMIN/DF a measure of good model fit measured as a measure of model fitness. For instance, Marsh and Hocevar (1985) suggested that the value must be between 5 and 2 whereas, Carmines and Mclver (1981) are of the view that it should be between 1 and 3 to indicated a good model fitness. Thus it concluded that the model is reasonably fit and can be used for data analysis. Other model fitness ratios are presented in the following table and proved SEM as a good fit for estimation. For example, GFI is.96, NFI is .91, CFI is .93 and RMSEA= 0.043. Values of NFI, CFI, and GFI are close to 1.00 which show a good fit of the model (Hair et al., 2003). Browne and Cudeck (1993) reported that the RMSEA value must be less than 1 for a model to be used for data analysis.

Factor loadings of each item in its respective scale are mentioned in Figure 2. Item statements with significant loading weight ≥ .40 were retained in the respective scales. CFA reveals that all items of employee engagement were retained as their respective factor loading is ≥ .40.

These items found to have significant contributions in the development of their respective scales. Three items of innovative work behavior were deleted due to fewer regression weights. Similarly, 3 items of psychological empowerment were also deleted.

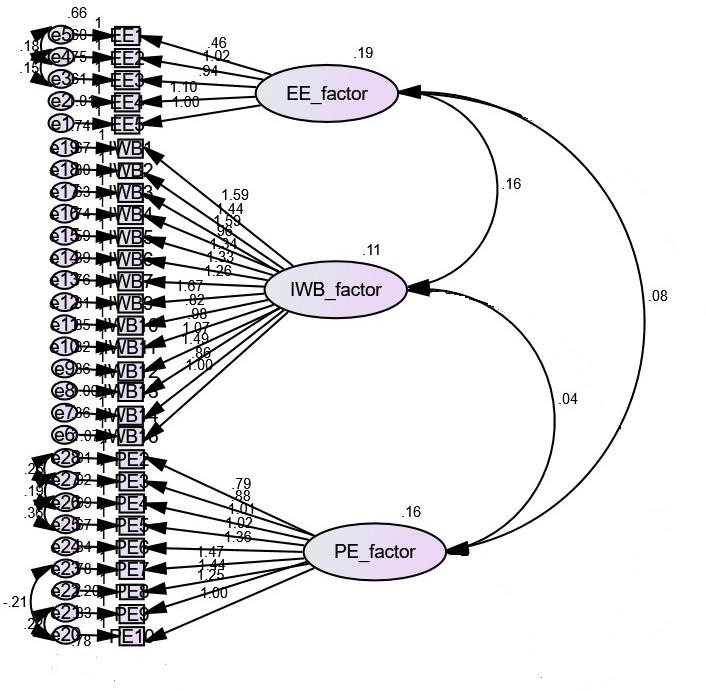


Figure 2. Title of Figure 2

Table 2. Regression weights

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Path |  | Estimate | S.E. | C.R. | P |
| Employee engagement | <--- | Psy\_Emp | .39 | .047 | 6.39 | .\*\*\* |
| IWB | <--- | Psy\_Emp | .46 | .053 | 5.87 | .\*\*\* |
| IWB | <--- | Employee\_engagement | .33 | .037 | 8.89 | \*\*\* |

For the purpose of hypothesis testing, a separate model was tested. The model was found to be fit because all the ratios achieved the threshold values. In this hypothesized model, values of, GFI 93, NFI .90, CFI is .97 and RMSEA= 0.048. Values of NFI, CFI, and GFI are close to 1.00 which show a good fit of the model (Hair et al., 2003). As the above Table 2 indicates that a direct path from psychological empowerment to innovative work behavior is significant (β

= .46, p< .05). The indirect path from psychological capital to employee engagement (β = .39, p< .05) is significant and path from employee engagement to innovative work behavior is also found to be significant (β = .33, p< .05). As it is evident that all the paths are significant and all the hypothesis is supported. According to the first condition of Barron and Kenny (1986), path from the independent variable to the dependent variable must be significant. The second condition is that path from the independent variable to mediator must be significant. Thirdly the path from mediator to dependent variable should be significant. In this model, all these paths are found to be significant. So there is partial mediation exists.

# Conclusion and Findings

* 1. *Conclusion*

Organizations all over the world are interested in shaping the attitudes and behavior of their employees more productive and favorable. This study explores that conducive organizational climate and psychologically empowering employees significantly influence IWB. For this, organizations enhance their climate as well as streamline their systems and procedures to improve employees’ perception towards innovative work behavior. Where organizational climate and psychological empowerment significantly contribute in shaping employees’ perceptions with regard to innovative behavior. The objective of the current study is to discover the relationship of organizational climate and psychological empowerment with respect to Pakistani cultural context. The mediating role of employee engagement in the relationships of innovative work behavior is also measured. In addition, the framework uncovers particular interrelations between variables directly and why employees engage in IWB.

Software sectors employees are facing a hard workplace environment currently due to rapid changes in information technology. Consequently, software sectors have become much more competitive, as a result gaining and sustaining competitive edge has become more difficult. Despite the fact that employees working in the software industry receive lower rewards and compensation as compared to their work engagement. The present study provides an understanding of the workplace situation for today programmer. For this purpose, the study collected their response on a well-structured questionnaire about their innovative behavior. Furthermore, this study attempted to make an addition to the existing literature of innovative behavior with the combination of organizational climate and psychological empowerment by measuring the mediating role of employee engagement. Previously no study was conducted to compute the effects with the combination of organizational climate and psychological empowerment on innovative work behavior by mediating role of employee engagement. This study also fills the gap of innovation research as pointed out by Bhatnagar (2012) innovation may be studied with organizational climate, psychological empowerment, work engagement, and innovation relationship.

The regression analysis has been applied to observe the association between the study variables. Organization climate is positively significantly related to employee engagement. Psychological empowerment is positively related to employee engagement. Organizational climate is found to be significant with innovative work behavior whereas psychological empowerment was positively associated with innovative work behavior. Employee engagement is also positively

Associated with innovative work behavior.

# Discussion of Results

The objective of the current study was to analyze the effect of psychological empowerment and the organizational climate on the innovative work behavior among the software sector employees of Pakistan. The present study also analyzes whether employee engagement mediates the relationship of psychological empowerment with innovative work behavior and organizational climate with innovative work behavior among employees software industry. After findings of the analysis are discussed in the following:

From the Regression analysis, direct effects were significant (see Table 4.13). The path from psychological empowerment to innovative work behavior was found significant (β=.27, p< .01), organizational climate to employee engagement (β=.39, p< .01) and employee engagement to innovative work behavior (β=.597, p< .01). Whereas the path from organizational climate to innovative work behavior was (β=.546, p < .01) was also found to be significant.

For the mediation analysis, Hayes process method was used. Results of this method indicate that employee engagement partially mediates the relationship of psychological empowerment and innovative work behavior as all the paths were significant. Moreover, results revealed that employee engagement partially mediates the relationship of organizational climate and innovative work behavior as the direct path from organizational climate to innovative work behavior was also significant.

The findings of this study support the argument of Andrew and Sofian (2012) that employee engagement is a key antecedent of individual behavior. The findings of this study are consistent with the results of the previous study by Yuan and Woodman (2010) that employee engagement fosters innovative behavior of individual at the workplace and further revealed that engagement of employees is critical for innovative behavior.

The results of this study suggest that IWB may be included in HRM practices such as reward, job demand, feedback, and job insecurity. Moreover, previous studies indicate that leadership behavior can also discover the IWB as Jassen (2005) Sander, Moorkamp, Torka, Groenveld, and Groenveld. (2010) found a significant positive relationship between leadership and IWB. Leaders are meant to have an impact on employees’ behavior by forming the perceptions regarding HRM practices, and by providing several resources needed for the engagement in IWB. Furthermore, Scott and Bruce (1994) and Sander et al. (2010) propose an interrelation between leadership and organizational climate in the sense those employees who perceive their direct manager as supportive will likely also perceive their organization as supportive.

Although the path from organizational climate to innovative work behavior was non-significant, so findings are not consistent with study objectives. The findings further suggest that employee engagement partially mediates the relationship of psychological empowerment and innovative work behavior whereas also partially mediates the relationship of organizational climate and innovative work behavior among software employee working in Pakistan.

# Recommendation

The findings of the study recommend that software organization should promote psychological empowerment to increase the innovative work behavior among their employee. Moreover, employee engagement of employee and promotion of psychological empowerment can further increase the innovative work behavior in software organizations.

The findings of the study also emphasize that if software organization take steps to improve organization climate, it will foster innovative work behavior among employees of the software industry. Employee engagement further strengthens the association of organizational climate and innovative work behavior in software sector employees.

# Limitations of the study and Future Research Directions

No doubt this study highlights the important findings and has few limitations as well. First of all, data was collected from only one city, so results are not applicable to whole of Pakistan. Secondly, data was collected from only employees who are working on supporting activities and the findings are not related to other employees especially those are involved in software development.

Despite the significant findings, the current study highlights a few important issues and delimitations which require to be discussed in forthcoming research. Firstly, data were collected from the structural questionnaire to examine the relationship among variables, a longitudinal research design might be useful to authenticate the causal relationship of the study variables, most importantly, the impact of psychological empowerment on innovative work behavior and organizational climate on innovative work behavior. Secondly, psychological empowerment is the only single facet of psychological behavior. Future research should examine the influence of other psychological states such as psychological capital on innovative work behavior. Thirdly, this study analyzes the impact of psychological empowerment and organizational climate on innovative work behavior, future studies should further examine the impact of this innovative work behavior on firm productivity in the software industry.

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