



## Impact of Technological, Organizational, Product, and Process Innovation on Employee Turnover Intention

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### ABSTRACT

The study aimed at investigating the predictive relationship between innovation and employee turnover intention in the telecom sector of Pakistan; particularly Mobilink Microfinance Bank, Khushali Bank, U-Bank & Telenor Microfinance Bank. The impact of technological, organizational, product, and process innovation was measured on employee turnover intention by using the adapted version of The Denison Organizational Culture Survey (1990). The sample comprised 150 employees with the inclusion criteria of only those working at the Microfinance Banks. A purposive sampling technique was used and the survey was conducted in person as well as on Google Docs. The method of regression analysis was used to analyze the data. The results suggested the predictive role of innovation in decreasing employee turnover intention.

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## **INTRODUCTION**

Employee turnover intention has been studied in relation to a number of Bio-Pscho-Social variants and a number of predictive analyses have been yielded in relation to these variables. However, there's limited body of research that explores the predictive relationship between innovative practices and employee turnover intention.

Innovation for organizations has been inevitable with the transformations in technological practices at workplaces. However, innovation isn't just limited to technology, it plays a vital role in terms of product, process and organizational advancements.

Innovation is a key player in development and growth of any organization for maximizing outputs and minimizing turnover intention. For instance, case studies of telecom sector in Pakistan show a clear trend of minimizing the factors that lead of employee turnover intention by driving innovation in product, process and technological aspects of the sector, particularly in Microfinance.

For instance, Mobilink - Jazz, as a leading telecom giant in Pakistan is a useful case study in understanding the role and impact of innovation upon work environment and employees. It has successfully devised innovation through Microfinance options (banks) focused on resolving problems as well as improving work environment.

Similarly, Pakistan's largest cellular operator – Jazz's innovative solutions have strengthened banking sector's penetration in target markets. Leveraging on the sponsors' network and brand name – Jazz Cash—branchless banking domain—is taking on optimistic growth and is expanding through platform of Mobile-wallet accounts. The bank's current strategy is pivoted around capitalizing on its digital banking base having strong support from its super-agent cellular operator. The bank's business model utilizes innovation and is directed towards fostering core and branchless banking simultaneously. Jazz Microfinance bank is a case study in importance of innovative growing, and has shown how it leads to benefit Employee Performance indicators.

### **1-Significance of research**

The current global climate for any organization is laden with innovative and competitive approaches for solving issues pertaining to employees, particularly the turnover intention. For any organization to sustain and stay relevant, it has become important to devise innovative approaches. Studying the impact of various innovative practices upon employee turnover would help provide an evidence based model or framework that could be proposed to organizations for using as a proactive measure. A need for such investigation is crucial because of the inevitable nature of the employee turnover intention within and outside the organization.

Additionally, a company's success is largely a measure of employee performance and variety of biological, psychological and social solutions have been devised in the past to increase the efficacy of employee performance. However, innovation is the least researched variable and there's a vital need of literature that guides the impact of technological, organizational, process

and product innovation as a solution to employee performance and turnover intention. For any organization to sustain in the market by doing innovation in every part of organization.

The emphasis on innovation is not relentless as innovative activities improve administrative processes that lead to increase in efficiency and effective management of work.

## 2-Theoretical Underpinning

*The Diffusion of Innovation* (Rogers, 1995) emphasizes the importance of investigating innovative change and the rate at which it's adapted in any given setting. The discussion on innovation is incomplete without the base of diffusion theory that provides clear insights to organizations in terms of different kinds of innovations being adapted at different rates. The diffusion theory highlights the minimization of uncertainty in employees by introducing innovation. Hence, an important underlining to relate with other models of innovation based turnover intention.

According to Barnard-Simon (1938), employee turnover intention is largely dependent on the evaluation that is made by an employee in terms of balance between inducements by the organization and their own contributions. *The Organizational Equilibrium Theory* provides a strong ground to look into the contributing factors by an organization that would help sustain an employee.

The aforementioned theories provide a basis for understanding the culture of innovation in organizations with select to employee turnover intention and satisfaction. A new model of *Organizational Climate for Innovation* (Francisco, 2012) discusses the concept of Innovation Climate in an organization and its impact on variety of employee variables that are not psychological but strictly relevant to the process of innovation itself.

Furthermore, survey for the *Theory of Process Innovation* (Blaug, 1963) addresses the efficacy of adopting an innovation that adds to technical knowledge and reduces the amount of activity for the employee. The model can be explained in terms of organizational climate for innovation that leads to a sense of equilibrium in the employee and hence reducing turnover intention.

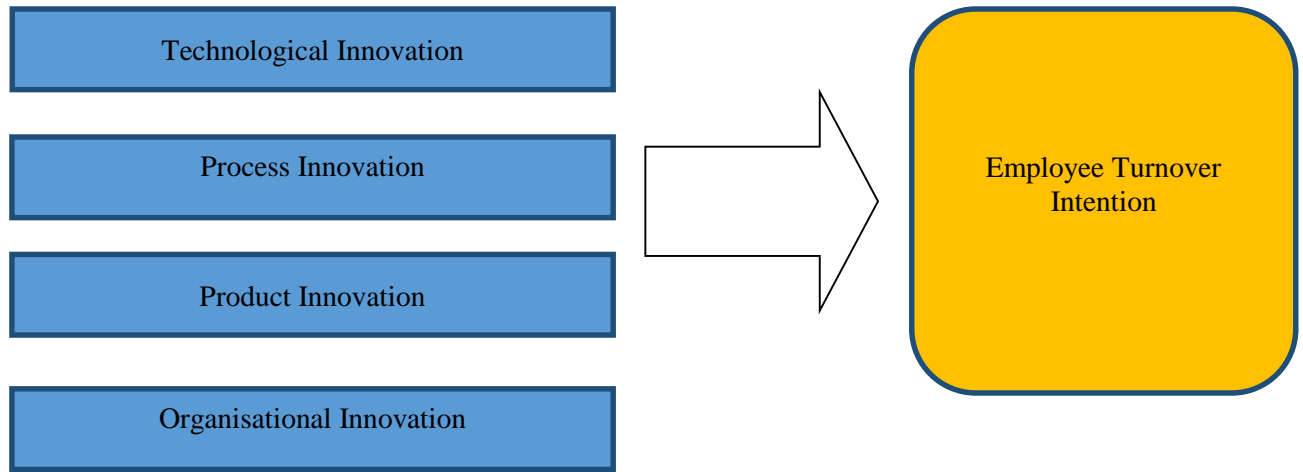
Lastly, *the integrated model of entrepreneurship* (Neessen, 2019) highlights the role of innovation as a vital factor in employee retention, building and empowerment. The model emphasize on the role of innovation as an important aspect of personality dimensions for entrepreneurship in an employee.

## 3-Research Gap

The research process revealed relevant gaps to the objectives of the study. One of the gaps identified is the necessity to investigate the contextual elements influencing innovation, knowledge, and employee turnover intentions.

Turnover places financial and structural impact on the company. The investigation, then, about the negative impacts of innovative work behavior upon turnover intention shall be discussed. Also, a need for business to plan ahead in order to minimize losses is identified in the study. Further, organizations can offer strategic compensation packages that emphasize performance and tenure to lessen the likelihood of turnover. Workforce companies also have lower turnover since employees feel like they have a voice and the company values their contributions.

## **Theoretical Framework**



## **LITERATURE REVIEW**

### **Employee Turnover Intention**

Employee turnover is widely studied area for firms and organization. Employee retention techniques aren't unheard of and have been used ever since the theory of equilibrium and even before. However, with technological advancements over the decades, it is interesting to investigate the relationship of product, process and organizational innovations along with the technological advancements on job turnover intention.

Henha (2017) describes employee turnover as a scenario of leaving work. Whereas, employee turnover intention is different than employee turnover rate, as the former can be proactively resolved than the later. Turnover intention explains the factors that may or may not lead to a decision of leaving the work. Turnover can best be measured by comparing the number of people leaving an organization in a given time with those staying at the organization (Neal, 1998; Price, 1977). According to Kim (2015; 2017), employee turnover intention deals with intrinsic motivation and shares an inverse relationship. Measures such as an innovative climate is needed to ensure the reduction of turnover intention and breath fresh air into the burned out and bored employee.

It is specially, relevant for organizations to consistently come up with solutions that minimize job turnover and intention (Ngamkroeckjoti, et al, 2012). Demircioglu & Berman (2018), studied innovation with relation to employee turnover rate across all hierarchies and concluded that climate of innovation is crucial for minimizing employee turnover intention from manager to supervisor to intern.

According to Kalliath & Beck (2001), an employee goes through thoughtful deliberations that best explain the cognitive processes involved in burn out and turn over intention. The idea of leaving work is accompanied by the practical steps to acquire a new job,

eventually leading to turnover.

Also, the process can be intentional or unintentional, as stated by Curtis (2018). He suggests distinctive ways in which employee turnovers could occur. The Voluntarily Turnover Intention focuses on the internal and external factors that may lead to the decision of job turnover. These reasons may range from monetary opportunities, better position, easy commute, improved chances for acknowledgement, illnesses and healthcare, and family.

Curtis and Taylor (2018) explain that in the contrary, involuntary turnover intention maybe caused by the organization itself, when it plans to evict an employee on accounts of dissatisfactory performance as evaluated by managers, chief executive officers or team leader. This may also happen in cases of bulk layoffs when an organization can't sustain itself and hence has no other option to regulate the economic balance of the organization (Syed, 2015).

The literature further explores the pathways that lead to the decision of intentional turnover intentions by an employee. The model explains four ways that psychologically influence the employee to set an intention (Mitchel, 1994).

### **Technological Innovation**

Technological innovation is the need of the time and is best explained as practice measures that are taken to find unique ways to create opportunities. Technological innovation is mostly based on science and research and is evidence based in nature. It's a commercialized form of innovation that ensures capital for the organization (Nemati, 2010).

According to Mentz (2006), technological innovation is best defined as a mechanism incorporating technical and scientific body of information, practical solution and effective execution. According to Bauer & Bender (2004), technological innovation reduces the turnover intention for employees possessing technical knowledge and information of innovations. In comparison, the turnover intention is higher in those workers that are not skilled or trained in innovative technologies. Similar conclusion was made by Newnham (2018) and by Holliman (2013), in an academic setting.

Griffith, Huergo, Mairesse, & Peters (2006), investigated the European economy for effects of innovation and found a significant relationship with employee productivity.

**H1:** The technological innovation will have a negative impact on employee turnover intention.

### **Process Innovation**

Innovation is understood in two ways; product and process innovation. A process-innovation is defined as any adopted improvement in technique that aids in reduction of output cost while keeping the input cost the same (Blaug, 1963).

Researchers have found direct correlations between process and product based innovation and employee turnover intention (Damanpour, 2001; Geroski, 1989; Papa, 1990). There's a sufficient body of work that focuses on measurement of process and product innovation on employee performance (Fey & Benison, 2003). Similarly, a study by Huergo & Jaumandreu

(2004), revealed the positive role of process innovation leading to prospects of better productivity and organizational performance.

A comparative study on impact of product and process innovation revealed a significantly higher role of process innovation upon employee productivity (Hall, Lotti, & Mairesse, 2011).

**H2:** The process innovation will have a negative impact on employee turnover intention.

### **Product Innovation**

Product innovation is creating or modifying a good, tool or service in terms of its usage or purpose. Also, product innovation is about exploring new ways to use an old product or service. (Simonetti, 1995).

Product innovation and technological advancement is a relatively significant leap for any organization but sustaining the success is dependent on the feedback of customers and further technological advancements (Angelmar, 1990). A study on 101 commercial banks reveal that product and process innovations are adopted by highly successful commercial banks in comparison to unsuccessful one that didn't adopt these innovations (Damanpour, 2001).

According to Neessen (2019), an employee's relationship with an organization is mediated by the innovation brought in the product by a given organization. It furthers the employee's skill set and help them function better for a given organization.

Product innovation is more sustainable when employees are retained resulting the organization to expand in size (Ettlie & Rubenstein, 2002).

**H3:** The product innovation will have a negative impact on employee turnover intention.

### **Organizational Innovation**

Organizational innovation is crucial for economic growth (Rosenberg, 2004). Literature in organizational innovation suggests that corporations that are innovative are more likely to engage their employees into advanced HRM practices and such a practice impacts the turnover intention directly (Eriksson and Wang, 2014; Amabile, 1988; Dean, 1987). It applies to the South Asian context as well (Bhatnagar, 2012). A recent study explored the role of organization innovation at PEPCO (Pakistan) and found it to be significantly related to organizational success and employee performance (Zeb et al. 2021). Shih & Sastano (2011), analyzed the detriments for innovation and its relationship with employee turnover intention and conflict. Their conclusion was similar to Robbins, 2009; Meyer & Allen (1997).

According to Lukes & Stephen (2017), for any given organization, innovation subscribes to practical steps of curating and executing new ideas, systematic process of these ideas, measures and steps that ensure efficient performance of these ideas and finally, leading up to the creation of effective services and products.

**H4:** The organizational innovation will have a negative impact on employee turnover intention.

## **METHODOLOGY**

### **Research Design**

This Co relational Study used survey method to understand the predictive relationship of independent variables on the dependent one.

This research was based on Quantitative research technique. Technological, Organizational, Product and Process Innovation were the independent variables, whereas, Employee Turnover Intention is the dependent variable for the study.

### **Sample and Population**

- **Population:** The research was collected from top four microfinance banks in Pakistan that are focusing on innovation on day to day activities.
- **Sample**

The sample of 150 employees working at various Microfinance Banks in Pakistan was drawn using convenient sampling. The participants ranged between 20 to 40 years of age.

### **Data Collection Procedure**

The data was collected on the adapted version of Denison Organizational Culture Scale (1990) from the employees of Mobilink Microfinance Bank, Khushali Bank, U Bank, and Telenor Microfinance Bank.

The data analysis is performed through SPSS and the questions for innovation is adopted from (Suriati, 2015) and questions for employee turnover intention is adopted from (Lee1, 2012). The study investigated the impact of innovation on employee turnover intention. Denison Organizational Culture Scale (1990) was adapted after peer review and was administered via Google Docs and in-person, on 150 employees of various Microfinance Banks in Pakistan. The Microfinance Banks were limited to: Mobilink, Khushali, U bank, and Telenor. (Faiz world, 2021) After data collection, statistical analysis was performed using regression. The results revealed that innovation does have an impact on employee turnover intention.

### **Measuring Instrument**

The measuring instruments we have used are scale. Questionnaire consist of 5 point likert scale.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

**SAMPLING CHARACTERISTICS:**

<b>DEMOGRAPHICS</b>		
<b>PERCENTAGES</b>		
<b>Age</b>	20-30	82 %
	31-40	16%
	41-50	2%
<b>Gender</b>	MALE	62%
	FEMALE	38%
<b>Tenure of Job</b>	1-5 Years	78%
	6-10 Years	14%
	11-15 Years	4%
	15 and above	3.3%
<b>Industry</b>	Mobilink microfinance bank	48.7%
	Khushhali microfinance bank	6%
	U bank microfinance	32%
	Telenor microfinance bank	13.3%



## RESULTS

### Correlation & Regression Analysis

The descriptive statistics reveal the characteristics and specifications of the population taken for the study (Table 1; mean, SD, correlations).

As per table 1, the age range from a sample of 62% males & 38 % females, armed between 20 to 30 years (S.D. 0.44871).

Furthermore, the reliability for turnover intention (.724); technological innovation (.813) ; process innovation (.807); product innovation (.730); organizational innovation(.721) were also computed and found significant. These were all above conventional standards of .70.

Correlations, too, were significant for the independent and dependent variables.

As per table 1, there is a negative relationship between employee turnover intention and technological innovation ( $r = -.576^{**}$ ), just as suggested by hypothesis 1 (h1). Similarly, a significant correlation was found between technological innovation and product innovation ( $r = 0.590^{**}$ )

Significant negative relationships were found between organizational innovation and product innovation ( $r = .562^{**}$ ); employee turnover intention & product innovation ( $r = -.466^{**}$ ); technological innovation and process innovation ( $r = 0.737^{**}$ ); technological & organizational innovation ( $r = 0.725^{**}$ ); employee turnover intention and process innovation ( $r = -.667^{**}$ ).

**Table 1:** Means, Standard Deviations, Correlations, and Reliabilities

	Mean	S.D	1	2	3	4	5
<b>1. Gender</b>	1.3800	0.48701					
<b>2.Age</b>	1.2000	0.44871					
<b>3.Employee Turnover Intention</b>	1.6533	0.45838	(.724)				
<b>4.Technological Innovation</b>	4.3478	0.48656	-.576**	(.813)			
<b>5.Organizational Innovation</b>	4.2817	0.49094	-.851**	.725**	(.721)		
<b>6.Process Innovation</b>	4.2900	0.48136	-.667**	.737**	.781**	(.807)	
<b>7. Product Innovation</b>	4.2900	0.56244	-.466**	.590**	.562**	.666**	(.730)

a n = 150; Cronbach's alphas presented in parenthesis. For Age type, 1—20-30; 2, —31-40, 3— 41-50 | Gender was coded as —1| for men and —2| for women. b \*\* p < 0.01 (2-tailed) \* p < 0.05 (2-tailed)

## Regression Analysis

The impact of the organizational, technological, process and product innovation was examined on the on employee turnover intention—dependent variable.

Overall, the regression analysis of all independent variables on the dependent variable of employee turnover intention yield a significant predictive relationship. As shown in table 2, for Technological Innovation ( $\beta = -.543$ ),  $p < 0.001^{***}$ , and  $R^2$  is .332.

The similar is predicted for Organizational Innovation with ( $\beta = -.794$ ,  $p < 0.001^{***}$ )  $R^2$  .723; Process Innovation with ( $\beta = -.635$ ,  $p < 0.001^{***}$ ),  $R^2$  .445; Product Innovation with ( $\beta = -.380$ ,  $p < 0.001^{***}$ ),  $R^2$  .218.

The aforementioned conclusive values suggest that all independent variables share a significantly negative relationship with the dependent variable— Employee Turnover Intention.

**Table 2:** Multiple Regression Results of Technological, Organization, Product, and Process Innovation.

Employee Turnover Intention			
Variables	<i>B</i>	$R^2$	Adjusted $R^2$
Technological Innovation	-.543	.332	.327
Organizational Innovation	-.794	.723	.722
Process Innovation	-.635	.445	.441
Product Innovation	-.380	.218	.212

\*\*\*  $p < 0.001$  \*\*  $p < 0.01$  \* $p < .05$  † $p < 0.1$

## DISCUSSION AND CONCLUSION

The study aimed to investigate employee turnover intention with reference to innovations at organizational level. It was hypothesized that; Technological innovation will be inversely associated with employee turnover intention; there will be negative relationship between process innovation and employee turnover intention; increase in product innovation will reduce employee turnover intention; organizational innovation will have negative relationship with employee turnover intention.

As per table 1, a significant inverse relationship was found between technological innovation and employee turnover intention (.724). The finding strengthens the already existing body of literature that emphasizes on technological evolution as an important solution to employee turnover intention. The more the technological innovation the lesser the employee turnover intention would be (Curtis & Taylor, 2018; Griffith, Huergo, Mairesse, & Peters, 2006).

Furthermore, table 1 also shows the significant negative relationship between process innovation and employee turnover intention (.807), which indicates that the higher the process innovation will be the lower the rates of employee turnover intention will be and vice versa. Since, process innovation is pivotal kind of innovation for any organization, its role in proactively controlling the increasing rates of employee turnover intention can't be denied (Hall, Lotti, & Mairesse, 2011; Huergo & Jaumandreu, 2004).

The study also investigated the relationship between increased levels of product innovation and employee turnover intention. It was found that there's a significant relationship between product innovation and employee turnover intention and that one predicts the other in an inverse manner (.730, table1). This is also validated by the body of literature which highlights the important role of product innovation as crucial for employee retention (Neessen, 2019; Ettlie & Rubenstein, 2002).

Lastly, organizational innovation's relationship with employee turnover intention was explored and a significant negative relationship was predicted in the study between these variables (table 1: .721).

Overall, the findings highlight the theoretical framework chosen for the study that suggested the prime role of innovation as crucial for employee retention or improving the turnover intention rate (Francisco, 2017; Lukes & Stephen 2017; Eriksson and Wang, 2014; Blaugh, 1963).

### **Practical Implications**

Employee turnover intention can be significantly reduced or controlled by introducing innovation at technological, organizational, product and process level.

Innovation is a cost effective way to sustain and build an organization as it evades the lengthy procedure of hiring, training and recruiting new employees every other term due to high turnover rates.

### **LIMITATIONS AND FUTURE RESEARCH**

The research poses limitation in terms of the population that was limited as subject of the study. The telecom sector can be studied all over the country in future than limiting the study to one city. Furthermore, a comparative research design would benefit the body of research if various sectors are compared in terms of employee turnover intention and innovation.

The academic nature and time constraints prevented intensive pilot studies and revision for adaptation of questionnaires used in the city. Technically, the research can greatly benefit with multiple revisions of adapted battery and pilot studies to help with a better research design.

Lastly, the resurgence of COVID-19, didn't allow the research to be conducted in-person and a reliance on Google Docs was the only way.

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