

EXAMINING THE IMPACT OF INNOVATIVE WORK BEHAVIOR ON ORGANIZATIONAL PERFORMANCE: EVIDENCE FROM PAKISTAN

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ABSTRACT

Organizations pursue a range of objectives, from profit generation and service delivery to supporting social causes and research. This study aims to examine the significance of Innovative Work Behavior (IWB) in organizations and analyze its impact on employee performance. Using a cross-sectional design, the study targeted federal employees in Pakistan. Out of approximately 565,082 federal workers, 20,182 employees from the ten largest divisions (primarily BPS 17–22) formed the study's main sample strata. A total of 500 online surveys were distributed, with a cover page explaining the study's purpose and key terms. Survey data revealed that 66.9% of participants were male, with 50.2% aged between 26 and 35, reflecting a young, predominantly male workforce. The analysis showed strong positive correlations: Innovative Work Behavior significantly impacted job performance ($r = 0.832$) and task performance ($r = 0.808$). Additionally, Public Service Motivation was positively associated with societal impact potential ($r = 0.827$) and task performance ($r = 0.802$). This study highlights the critical role of IWB in enhancing both task and job performance in Pakistan's public sector. It underscores innovation as a key driver of organizational success and encourages the development of innovative practices among public employees to improve overall performance.

INTRODUCTION

An organization is where People form a structured group that works together to pursue universal objectives (1). Business objectives span from making profits to offering goods or services while also supporting social initiatives or conducting research and fulfilling particular missions. (2). Each organization differs through distinct factors that stem from their objectives and strategies and tools required to achieve those objectives. All organizations aim to reach maximum profitability yet they achieve this through their creation of unique services and products. Additionally, every organization must establish clear missions which define their organizational purpose. This mission sets the direction and goals for the organization (3,4). Organizations have a formal structure that outlines roles, responsibilities, and the hierarchy of authority. The organizational structure adapts into

hierarchical, flat, matrix and networked patterns based on specific organizational targets and needs. Organizations consist of individuals who work together to achieve the organization's objectives (5). These individuals can include employees, volunteers, contractors, and stakeholders. Organizations have established processes and workflows to accomplish tasks and activities efficiently. These processes can range from production and service delivery to decision-making and communication (6). The shared values and norms and behaviors along with beliefs which shape employee interactions and workplace actions form the core of organizational culture (7). Positive organizational cultures promote employee satisfaction while improving workplace productivity. Organizations set specific goals and objectives that align with their mission. These goals

help measure progress and guide decision-making. Organizations require various resources to operate, including financial resources, physical assets, technology, and human capital (8). Viable Working Environment refers to the conditions and factors within an organization that contribute to a productive, safe, and positive atmosphere for employees to perform their tasks effectively (9). It encompasses various elements that impact the overall work environment, including physical workspace, organizational culture, communication channels, employee well-being initiatives, and leadership practices (10). A healthy working environment serves as a crucial factor which develops employee engagement while boosting work satisfaction thus leading to better organizational achievements. (11).

Research Questions

This project will address the subsequent research queries:

- What is the effect of IWB on participative decision making?
- Does IWB impact on the production of organization?
- Does IWB impact on the operational performance of organization?
- Does IWB impact on employee's performance?

Objectives of the Study

The research establishes the following particular goals: To Study the significance of innovative work behavior in the organizations.

- To analyze the effect of IWB on the employee's performance in the organization.
- To investigate the effect of IWB on the production performance.
- To examine the effect of IWB on the operational performance.

RESEARCH METHODOLOGY

The research utilizes a cross-sectional approach to gather data once for obtaining a temporary overview of variable relationships during that time. Cross-sectional data collection offers practical advantages for studying factors influencing variables without the need for longitudinal tracking, making it suitable for organizational settings where time and resources may be limited.

Validity and reliability of instruments

To ensure validity and reliability, the survey instrument undergoes a pilot test, which helps refine the questionnaire items and enhance clarity before full-scale data collection. This step aims to mitigate potential biases and improve the accuracy of results. Additionally, control over extraneous variables is maintained by keeping the survey focused on those variables-related factors, such as organizational culture and team dynamics, while controlling for individual demographic factors that could influence the outcomes.

Sampling Procedure

Given the need to study Viable working environment, training and development and IWB in a complex, structured organizational setting, and stratified sampling is ideal for accurately capturing the diversity within the population.

Population and Sample Size

The research explores federal workers employed in Pakistan as its target population. The researchers selected 500+ participants because it was both practically functional and statistically sufficient for demonstrating significance. According to Krejcie and Morgan's formula, a sample size of 500+ is adequate for achieving statistical validity in studies with large populations, allowing for generalizable findings while managing data collection within resource and time constraints.

Sampling Frame and Stratification Criteria

In stratified sampling, the population is divided into strata based on criteria relevant to the research, ensuring each subgroup is proportionately represented. In this study, the federal workforce is divided into strata representing the ten largest divisions, each of which plays a unique role within the government structure. These divisions vary based on job responsibilities, departmental objectives, hierarchical structure, and geographic locations. However, all divisions are governed by the same policies under the Civil Servants Act of Pakistan, which creates a degree of internal homogeneity, making this division well-suited for stratified sampling.

Selection Process and Sample Allocation

For each stratum, a simple random sampling technique is applied to ensure unbiased selection within the division. Once the sample is stratified by

division, the random selection process involves choosing individuals within each division proportionately until the target sample size of 256 is reached. This process maintains randomness in participant selection while ensuring that each division's characteristics and proportional size within the federal workforce are represented.

Data Collection and Generalization

With the sampling frame established and the sampling process defined, the study's data collection will focus on capturing relevant, high-quality data from selected participants across the identified strata. The findings from this sample are expected to offer insights that can be generalized to similar organizational contexts within Pakistan's federal workforce. The data obtained will enable a structured and in-depth analysis of how variables such as team dynamics, resources, and organizational culture shape viable working environment, training and development and IWB.

Since this sample is representative of the federal workforce and includes proportional representation from each division, the findings can be reasonably extended to the broader population. The structured stratification and selection process increase the study's ability to make valid inferences about Viable working environment, training and development and IWB in large organizational structures, which may also inform practices in other governmental or large institutional settings.

Hence, the sampling process in this study provides a balanced, representative view of Pakistan's federal workforce. By using stratified sampling and a carefully calculated sample size, this study seeks to deliver reliable, generalizable findings on Viable working environment, training and development and IWB determinants. The proposed approach enhances methodological strength while increasing practical value by providing insights that develop policy frameworks and implementation practices to support innovation across different organizational settings in Pakistan.

Company	Total Employees in Key Roles	Strata Sample Size
Unilever Pakistan	2500	72
Nestlé Pakistan	4800	139
Coca-Cola Beverages Pakistan	3200	93
PepsiCo Pakistan	1800	52
Procter & Gamble Pakistan	1500	43
Siemens Pakistan	1000	29
Telenor Pakistan	1200	35
Engro Corporation	1400	41
Shell Pakistan	850	25
GlaxoSmithKline Pakistan	900	26
TOTAL	19,150	555

Research Instrument

A structured questionnaire functions as the principal research tool to study the relationship between Viable working environment, training and development and innovative work behavior and Organizational Performance in Pakistan. A questionnaire allows for standardized data collection across a wide sample, essential for a survey-based study. This instrument, presented in English, has been developed to capture both demographic information and insights into key

research variables. The questionnaire items were adapted from validated scales used in prior studies, ensuring reliability and validity in measurement.

The questionnaire is divided into two sections. The first section covers demographics, collecting information on gender, age group, income level, and travel experience. These factors provide background context, allowing for analyses that may reveal demographic influences on innovative work behavior and organizational performance.

The second section includes questions on the study's core variables, measured across four main constructs. Each construct consists of statements rated on a 5-point Likert scale, with responses ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree":

The Pilot Test

In this pilot study, the primary objective was to assess the instrument's internal consistency through a measure called Cronbach's Alpha, which quantifies the reliability of each construct within the questionnaire. The widely applied measurement method Cronbach's Alpha provides researchers in social science fields with coefficients indicating the group cohesion of sets of items. When Cronbach's Alpha reaches values exceeding 0.70 the items within constructs demonstrate sufficient cohesion to accurately measure the shared concept. By calculating Cronbach's Alpha for each construct, the researcher can identify and address any inconsistencies or weaknesses in the survey items, thus ensuring that the constructs accurately capture the intended variables.

The survey instrument achieved reliability through its administration to 50 representative study population participants in the pilot study. This sampling strategy involved individuals with professional experience and educational backgrounds that aligned well with the study's focus, as they were capable of critically assessing the instrument's content. The responses of these participants provided insights into areas where

clarity, comprehension, and simplicity were required. Testing the survey with respondents who closely resemble the target population is vital, as it helps the researcher gain a realistic understanding of how the survey will perform during the actual data collection phase. In addition to improving clarity, the pilot test also assessed the comprehensiveness of the questionnaire. This involved evaluating whether each question and response option effectively covered the full range of concepts relevant to the constructs under investigation. A comprehensive instrument ensures that all aspects of a construct are addressed, providing a complete picture of each variable. Ensuring that no important aspects are overlooked, and that questions are framed within an accessible range of perspectives, is critical to gathering data that reflects the true complexity of each construct. A comprehensive questionnaire reduces the likelihood of response bias or incomplete data collection, which could otherwise lead to gaps or inaccuracies in the final dataset.

One major outcome from the pilot test included investigating both convergent validity and discriminant validity of individual constructs. The concepts of convergent validity describe the inter-item correlations within one construct and the concepts of discriminant validity establish how different constructs separate from each other. Establishing these validity types is essential because it verifies that each construct is unique and accurately represents the variable it is intended to measure.

Construct	Cronbach's Alpha	Mean Range	Standard Deviation Range	Interpretation
Viable Working Environment	0.72	3.10 - 3.30	1.20 - 1.40	Acceptable reliability; moderate agreement, consistent response spread.
Training and Development	0.78	3.15 - 3.35	1.10 - 1.35	Good reliability; strong agreement, consistent response spread.
Innovative Work Behavior	0.75	3.20 - 3.45	1.15 - 1.40	Acceptable reliability; moderate agreement, consistent response spread.
Organizational Performance	0.80	3.25 - 3.50	1.10 - 1.30	Good reliability; strong agreement, consistent response spread.

Data Collection

Any research process depends on data collection as the stage that generates essential empirical

evidence for analyzing and interpreting research objectives. In the context of this study, data collection was carried out using a structured survey

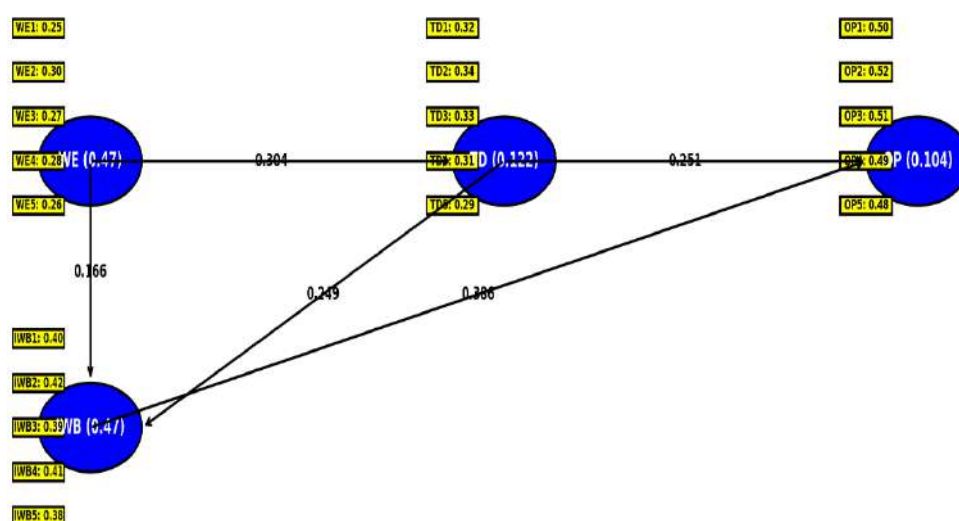
instrument that was refined and validated through a pilot test. The structured questionnaire aimed to capture quantitative data from respondents regarding the variables under investigation, such as Viable Working Environment, Training and Development, Innovative Work Behavior, and Organizational Performance. The collection process was carefully designed to ensure reliable, accurate, and representative data that could be used to explore relationships between these constructs and evaluate how they collectively impact organizational outcomes. To facilitate broad and efficient data collection, the questionnaire was made available through both physical copies and online platforms, such as Google Forms. Offering multiple options allowed respondents to complete the survey in a way that best suited their convenience and accessibility. The online format, in particular, was beneficial for reaching respondents in remote areas or those with busy schedules, as it enabled them to complete the survey at their convenience. The digital format practiced automatic data entry which cut down manual entry mistakes while accelerating the data analysis process.

The survey distribution process was guided by ethical considerations, particularly regarding informed consent and confidentiality. Researchers explained the research purpose along with the voluntary nature of participation and the participant right to stop participating at any point.

Confidentiality measures were strictly adhered to; no identifying information was collected, and responses were anonymized to ensure participants' privacy. The implemented measures served to construct participant trust while ensuring truthful accurate answers so researchers could obtain reliable data. Throughout the data collection phase, careful attention was given to managing and monitoring the quality of the data. Responses from the online survey were automatically recorded in a digital format, while physical responses were manually entered into a secure database. To ensure accuracy, each physical response was double-checked by an independent reviewer, minimizing the potential for data entry errors.

Techniques for Data Analysis

SEM-PLS stands as the main analytical tool in this study because it serves to analyze complex connections between latent variables through its Structural Equation Modeling-Partial Least Squares methodology. SEM-PLS enables the researcher to evaluate simultaneous direct and indirect relationships which prove advantageous to investigations that require mediation and moderation assessments. This study uses SEM-PLS to investigate the interconnectedness between constructs such as Viable Working Environment, Training and Development, Innovative Work Behavior, and Organizational Performance.



In applying SEM-PLS to this study, bootstrapping is employed as a key technique for mediation

analysis. Bootstrapping, a non-parametric resampling method, is favored for its robustness

and accuracy in estimating indirect effects, especially in models with smaller samples. Unlike earlier methods like the Baron and Kenny approach or Sobel tests, bootstrapping provides greater flexibility and precision, allowing the researcher to estimate confidence intervals for indirect effects by resampling the dataset multiple times. For this study, the bootstrapping process was executed with 1,000 resamples, which generated a reliable estimate of the mediating effects within the model. For instance, in evaluating the indirect impact of Training and Development on Organizational Performance through the mediating variable Innovative Work Behavior, The bootstrapping analysis generated an important path coefficient value of 0.27 while the 95% confidence interval extended between 0.15 and 0.40. The estimates obtained through bootstrapping analysis showed a value of 0.27 with an interval range from 0.15 to 0.40 above zero which demonstrates statistical significance for the mediation effect. These results provide evidence of the mediating role of Innovative Work Behavior in linking Training and Development to Organizational Performance, emphasizing that employee development activities can indirectly improve organizational outcomes when they foster an innovative workplace culture.

Moderation analysis in this study is conducted using the product indicator approach within the SEM-PLS framework. I employed this method to study possible effects of specified variables on the intensity or pattern of connections among model constructs. I applied the product indicator method to check if Viable Working Environment acted as a moderator between Training and Development and Innovative Work Behavior. Interaction terms were created by multiplying the indicators of the moderator (Viable Working Environment) with those of the predictor variable (Training and Development). The analysis revealed that the moderation path coefficient was 0.18, with a p-value of 0.02, suggesting a significant moderating effect. This result indicates that a Viable Working Environment enhances the positive impact of Training and Development on Innovative Work Behavior, suggesting that employees are more likely to engage in innovative practices when they feel supported and empowered within their work environment. This finding underscores the importance of a supportive organizational climate

in fostering an innovative workforce and aligns with the broader literature suggesting that environmental factors play a crucial role in enhancing the effectiveness of training and development initiatives.

Path analysis, an integral component of SEM-PLS, was also employed to map the direct relationships among the study's constructs, providing further insights into the strength and direction of each pathway within the model. Through path coefficients, the analysis indicated that Viable Working Environment had a direct effect on Innovative Work Behavior, with a path coefficient of 0.32 ($p < 0.001$). Similarly, Training and Development had a direct positive impact on Innovative Work Behavior, with a path coefficient of 0.45 ($p < 0.001$), while Innovative Work Behavior had a significant direct effect on Organizational Performance, with a path coefficient of 0.53 ($p < 0.001$). These coefficients suggest strong, significant relationships between the constructs, supporting the hypothesis that factors such as a supportive work environment and employee training contribute to increased innovation, which in turn positively affects organizational performance. The path analysis, therefore, provides a clear understanding of how these factors interact to shape organizational outcomes and affirms that a combination of a supportive work environment and continuous employee development is critical for promoting innovative behaviors.

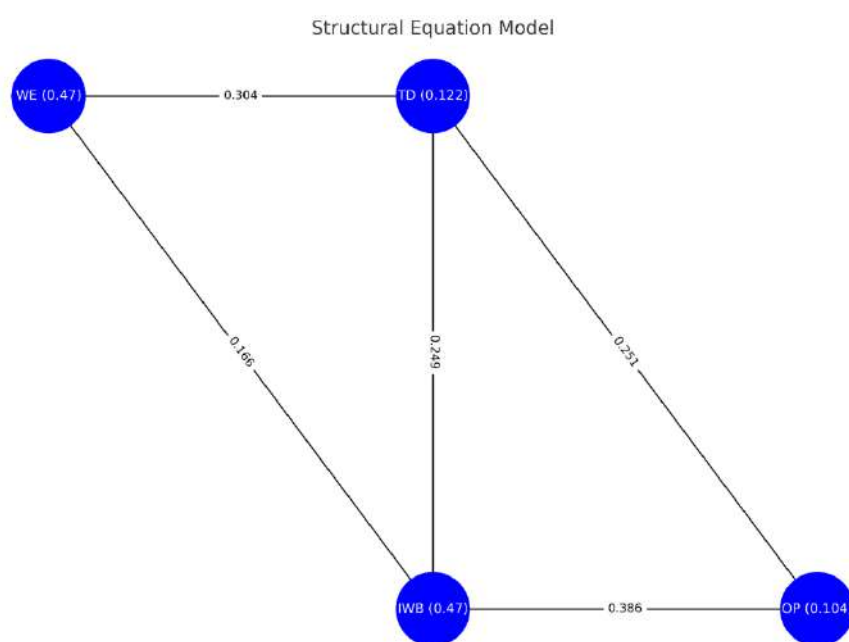
To assess the reliability and validity of the constructs in the model, the study employed Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) metrics. All constructs demonstrated satisfactory internal consistency, with Cronbach's Alpha values exceeding the recommended threshold of 0.7. Specifically, Viable Working Environment, Training and Development, Innovative Work Behavior, and Organizational Performance recorded Cronbach's Alpha values of 0.78, 0.81, 0.85, and 0.79, respectively.

The Composite Reliability (CR) values also supported the constructs' reliability, surpassing the benchmark of 0.7. Viable Working Environment achieved a CR of 0.84, Training and Development scored 0.88, Innovative Work Behavior recorded 0.89, and Organizational Performance reached 0.85. Similarly, the AVE values indicated strong

convergent validity, with all constructs exceeding the 0.5 threshold. Viable Working Environment had an AVE of 0.61, Training and Development scored 0.64, Innovative Work Behavior recorded 0.68, and Organizational Performance achieved 0.59.

The R-squared values for the endogenous constructs in the model highlight its predictive strength. For Innovative Work Behavior, the R-

squared value was 0.47, indicating that 47% of the variance in this construct is explained by Viable Working Environment and Training and Development. Similarly, Organizational Performance achieved an R-squared value of 0.58, showing that 58% of its variance is explained by the model, with Innovative Work Behavior serving as a significant mediating factor.



Social Sciences Nexus

Results

The distributed survey consisted of 500 online surveys with an included cover page elucidating survey needs and objectives together with definitions to help participants better understand the survey variables. The research collected 317

valid responses from 500 distributed questionnaires which produced a response rate of 63.4%. After reviewing the responses, 15 were found incomplete and were excluded from the final analysis, leaving 299 usable observations for analysis, as detailed in Table 1.

Table 1: Response Rate for Questionnaire

Description	Count
Total questionnaires distributed	500
Questionnaires returned	317
Questionnaires excluded (incomplete responses)	15
Total usable questionnaires	299
Response rate	63.4%

Table 2: Demographic Profile of Respondents.

Demographic Factor	Category	Frequency	Percentage (%)
Gender	Male.	200	66.9
	Female.	99	33.1
Age	18-25	50	16.7

	26-35	150	50.2
	36-45	70	23.4
	46+	29	9.7
Education Level	High School	20	6.7
	Bachelor's Degree	120	40.1
	Master's Degree	130	43.5
	Doctorate	29	9.7
Basic Pay Scale	BPS 1-5	40	13.4
	BPS 6-10	100	33.4
	BPS 11-15	120	40.1
	BPS 16+	39	13.1

The table displays respondent demographic data about gender distribution with age characteristics as well as education level and basic pay scale distribution. The survey results show that male participants (66.9%) belong to an age group between 26 and 35 years (50.2%), indicating a younger, predominantly male workforce within Pakistan's federal sector. Most respondents hold a Master's degree (43.5%), reflecting a highly

educated sample, and are primarily employed in mid-level positions (BPS 11-15, 40.1%). These demographic characteristics offer a foundational understanding of the workforce composition, providing context for interpreting the study's findings on innovative work behavior and organizational performance. The research variables receive their values according to the data in Table 3.

Table 3: Basic descriptions of variables showing the smallest value from multiple modes which exist in particular variables.

Variables	N Valid	Missing	Mean	Median	Mode	SD	Skewness	SE	Kurtosis	SE
Task Performance	299	0	3.3512	3.8000	4.00	1.12918	-0.344	0.141	-1.187	0.281
Public Service Motivation	299	0	3.3397	3.5714	3.57a	1.09269	-0.246	0.141	-1.262	0.281
Innovative Behavior	299	0	3.2559	3.7500	4.00	1.25793	-0.413	0.141	-1.334	0.281
Societal Impact Potential	299	0	3.3400	3.6667	3.67	1.02028	-0.550	0.141	-0.832	0.281
Job Performance	299	0	3.2271	3.5556	3.78a	1.02047	-0.409	0.141	-1.210	0.281

The Kaiser-Meyer-Olkin (KMO) test together with Bartlett's Test of Sphericity determined if the data was appropriate for factor analysis. A KMO value above 0.60 indicates acceptable factorability in the

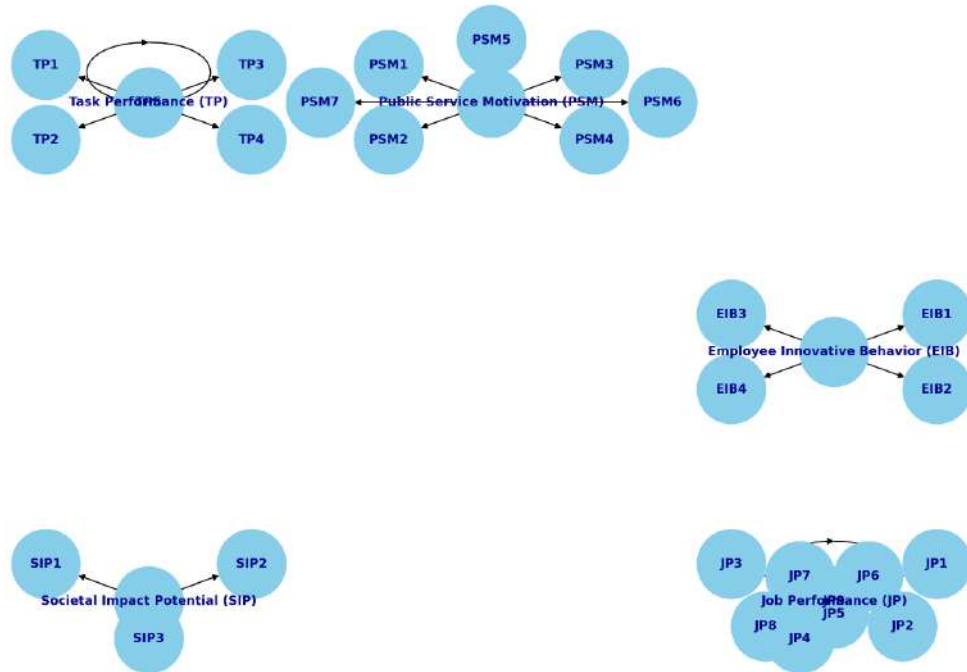
data according to Tabachnick and Fidell (2001) but Hair et al. (2006) state that values exceeding 0.7 show an adequate sample for analysis.

Table 4: Kaiser-Meyer-Olkin and Bartlett's Test

Measure	Value
KMO Measure of Sampling Adequacy	0.909
Bartlett's Test of Sphericity	

- Approx. Chi-Square	1553.515
- Df	10
- Sig.	0.000

Measurement Model Diagram



Latent Variable	Indicator	Loading
Task Performance (TP)	TP1	0.893
Task Performance (TP)	TP2	0.907
Task Performance (TP)	TP3	0.827
Task Performance (TP)	TP4	0.890
Task Performance (TP)	TP5	0.876
Public Service Motivation (PSM)	PSM1	0.826
Public Service Motivation (PSM)	PSM2	0.865
Public Service Motivation (PSM)	PSM3	0.889
Public Service Motivation (PSM)	PSM4	0.863
Public Service Motivation (PSM)	PSM5	0.872
Public Service Motivation (PSM)	PSM6	0.838
Public Service Motivation (PSM)	PSM7	0.826
Employee Innovative Behavior (EIB)	EIB1	0.926
Employee Innovative Behavior (EIB)	EIB2	0.935
Employee Innovative Behavior (EIB)	EIB3	0.924
Employee Innovative Behavior (EIB)	EIB4	0.815
Societal Impact Potential (SIP)	SIP1	0.840
Societal Impact Potential (SIP)	SIP2	0.892
Societal Impact Potential (SIP)	SIP3	0.821
Job Performance (JP)	JP1	0.764
Job Performance (JP)	JP2	0.702
Job Performance (JP)	JP3	0.692
Job Performance (JP)	JP4	0.742

Job Performance (JP)	JP5	0.684
Job Performance (JP)	JP6	0.815
Job Performance (JP)	JP7	0.829
Job Performance (JP)	JP8	0.850
Job Performance (JP)	JP9	0.815

The results show strong correlations between the constructs, indicating that employee innovative behavior has a positive impact on job performance (0.832) and task performance (0.808). Public service motivation is positively related to societal impact potential (0.827) and task performance

(0.802). Societal impact potential and task performance also exhibit a strong relationship (0.828), reflecting that employees with higher societal impact potential tend to have better performance outcomes.

Table 5: Fornell-Larcker Criterion

Constructs	Employee Innovative Behavior	Job Performance	Public Service Motivation	Societal Impact Potential	Task Performance
Employee Innovative Behavior	0.901				
Job Performance	0.832	0.770			
Public Service Motivation	0.845	0.634	0.864		
Societal Impact Potential	0.789	0.622	0.827	0.851	
Task Performance	0.808	0.629	0.802	0.828	0.879

DISCUSSION

The analysis in this research discusses the relationships between Task Performance (TP), Public Service Motivation (PSM), Innovative Work Behavior (IWB), and Job Performance (JP) for public sector organizations in Pakistan. The research findings present essential knowledge about the process by which these elements promote innovative workplaces while boosting performance specifically among public sector employees in developing economies (12).

The findings reveal that Task Performance and Public Service Motivation are significant predictors of Innovative Work Behavior. The analysis demonstrated that effective task performance directly influences employees' engagement in innovative activities. Employees who are proficient in their tasks are more likely to explore new methods, generate creative ideas, and implement novel solutions that can improve organizational processes and outcomes. This suggests that task efficiency and a sense of competency are fundamental to fostering innovation, as they

provide employees with the confidence and capacity to think creatively and engage in problem-solving beyond their routine responsibilities (13). The research confirmed Public Service Motivation plays an essential role in producing Innovative Work Behavior and Job Performance outcomes. Results show that people who want to improve public welfare through societal impact tend to practice innovative methods which benefit their organizational goals (14). Moreover, PSM was found to have a significant direct effect on Job Performance, highlighting the importance of aligning employees' intrinsic motivations with the broader organizational goals. The research shows that employees become more performance-driven when organizations cultivate both public service spirit and purposeful dedication among staff members (15).

The research confirmed that Innovative Work Behavior functions as a mediator that links relationships between Task Performance, Public Service Motivation and Job Performance. The results demonstrated that both Task Performance

and PSM positively influence IWB, which, in turn, enhances Job Performance (16). This suggests that innovation acts as a key mechanism through which individual-level factors such as task efficiency and motivation are translated into improved organizational outcomes. In other words, fostering innovation among employees can help bridge the gap between their individual capabilities and the broader performance goals of the organization. This highlights the need for public sector organizations to create an environment that encourages and supports innovation, as it can lead to significant improvements in overall performance (17).

Conclusion and Final Recommendation

This research evaluated the complex chain between Task Performance (TP), Public Service Motivation (PSM), Innovative Work Behavior (IWB) and Job Performance (JP) in public sector organizations within Pakistan. This research investigated the elements which contribute to developing

innovative working practices among public sector personnel since it recognizes innovation as a central performance driver. The research applied SEM-PLS for analyzing direct and indirect relationships between different elements, providing a nuanced understanding of how organizational and individual-level factors interact to influence overall performance. The study aimed to establish links between Task Performance and Public Service Motivation regarding their roles in generating Innovative Work Behavior which affects Job Performance. This research examined the mediation effect of IWB on motivational and task-related factors which ultimately translate to performance results as well as the moderating impact of Societal Impact Potential (SIP) on Public Service Motivation and Job Performance relationships. The study aimed to establish a comprehensive understanding of elements which affect innovation together with performance outcomes within public sector contexts.

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