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Research Paper

Exploring the Interplay Between Personality Traits, Innovative Work Behavior, and Occupational Stress in a PSU R&D Organization: A Cross-Sectional Study

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ABSTRACT

Introduction: In today's fast-paced organizational milieu, innovation is a linchpin for sustainable growth. Concurrently, the modern workplace is fraught with stressors that can impair performance and well-being. This study focuses on employees in a PSU R&D (Public Sector Undertaking Research and Development) organization, aiming to decipher the complex connections between IWB and OS. **Methodology:** The research employed a quantitative, cross-sectional design. Using stratified random sampling, 250 employees were categorized by their years of experience Structured questionnaires measured IWB and OS, specifically focusing on Role Overload, Role Ambiguity, and Role Conflict. **Results:** Correlation analysis illuminated significant relationships between IWB and OS dimensions. Personality traits, particularly Conscientiousness and Extraversion, exhibited varying impacts on different IWB components and OS dimensions. Notably, Conscientiousness positively predicted Idea Realization, emphasizing the role of diligence and persistence in innovation. Surprisingly, Extraversion correlated negatively with Role Overload, suggesting a unique organizational context effect. **Conclusion:** This study enhances our understanding of the complex interplay between personality traits, IWB, and OS in PSU R&D organizations. It provides actionable insights for HR practitioners and leaders, highlighting the context-driven nature of these relationships.

Keywords: *Innovative Work Behavior, Occupational Stress, Personality Traits, Public Sector Undertaking, Research and Development*

In today's dynamic and competitive organizational landscape, innovation is widely acknowledged as a key driver of sustainable success and growth.(1) For research and development (R&D) organizations, fostering a culture of Innovative Work Behavior (IWB) among employees is not only imperative but also poses a significant challenge.(2) Simultaneously, the modern workplace is replete with stressors and complexities, often encapsulated by the term Occupational Stress (OS), which can have profound repercussions on employees' performance and well-being.(3) The present study delves into the intricate interplay between Innovative Work Behavior and Occupational Stress, with a specific focus on employees within a prominent Public Sector Undertaking (PSU) R&D organization. The aim is to unravel the nuanced relationships that exist among different facets of IWB (Idea Generation, Idea Presentation, and Idea Realization) and various dimensions of OS (Role

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Overload, Role Ambiguity, and Role Conflict), further stratified by employees' years of experience.(4)

Within the context of PSU R&D organizations, understanding the factors that shape innovative behaviors and the stressors that influence them is of paramount importance. This research endeavors to contribute to this understanding by empirically investigating how employees' experiences within such organizations impact their IWB and OS dynamics. The remainder of this manuscript is organized as follows: the subsequent section outlines the methodology employed for data collection, analysis, and ethical considerations. Following that, the findings are presented and discussed, shedding light on the intricate relationships uncovered.(5) The manuscript concludes with a synthesis of key insights, their implications, and avenues for future research. Through this exploration, we seek to provide valuable guidance for PSU R&D organizations aiming to foster innovation while managing the concomitant challenges of occupational stress.(6)

METHODOLOGY

In this study, a quantitative research approach was employed to investigate the relationship between Innovative Work Behavior (IWB) and Occupational Stress (OS) within the context of the PSU R & D organization. The research was conducted as a cross-sectional study, collecting data at a single point in time to provide insights into the associations between IWB and OS.

Sampling: Stratified random sampling was utilized to select a sample of 250 employees from the PSU R & D organization. The employees were categorized into three distinct groups based on their years of experience: 0-2 years, 3-20 years, and 21-42 years.

Data Collection: Structured questionnaires were employed as the primary data collection instrument. To assess IWB, a validated scale was used, while validated scales were also employed to measure OS, specifically focusing on Role Overload, Role Ambiguity, and Role Conflict.

Data Analysis: One-way Analysis of Variance (ANOVA) tests were employed to examine potential differences between IWB and OS across different experience groups. Additionally, correlation coefficients were calculated to determine the strength and direction of the relationships between IWB and OS components.

Ethical Considerations: Throughout the research process, ethical guidelines were diligently observed. Informed consent was obtained from all participating employees, and strict measures were taken to ensure the confidentiality and anonymity of their responses. This methodology allowed for a comprehensive exploration of the research questions and provided valuable insights into the impact of experience on employees' IWB and OS within the PSU R & D organization.

RESULT

Table 1. demographic data collection *n = 250*

Demographic Characteristics	Number of Male Employees	Percentage of Male Employees	Number of Female Employees
Gender	180	72%	70
Age			
- 30 years	48	21%	4
31-40 years	34	20%	16
40-50 years	56	35%	31
50-60 years	42	24%	19
Work Experience			
0-2 years	40	23%	18
3-20 years	80	45%	32
21-40 years	60	32%	20
Educational Qualifications			
Engineering Graduates	37	24%	23
Science Graduates	40	21%	12
Post Graduates in Science	37	18%	8
Diploma Holders	36	16%	4
M.Tech	15	8%	5
Other Graduates	12	10%	13
Post Graduation (M.Com)		1%	2
Ph.D	3	2%	3
Department			
Project Groups	123	66%	43
Service Groups	57	34%	27
Marital Status			
Married	148	86%	67
Unmarried	32	14%	3

Table 2. Overall correlation with Work Experience & OS and IWB

Overall Correlation	Work Exp	O	C	E	A	N	RO	RA	RC	IG	IP	IR
Work Exp	1											
O	-0.04	1										
C	0.21	-0.10	1									
E	0.15	-0.09	-0.11	1								
A	-0.25	0.05	-0.06	-0.13	1							
N	-0.17	0.08	0.15	-0.23	0.28	1						
RO	-0.11	0.12	0.12	-0.21	0.17	0.05	1					
RA	0.23	0.01	0.18	-0.10	-0.07	-0.04	0.11	1				
RC	0.30	-0.30	0.18	0.04	-0.23	-0.22	0.03	0.32	1			
IG	-0.09	-0.04	0.13	-0.28	0.20	0.19	0.30	0.06	0.0652	1		
IP	-0.12	0.03	0.03	-0.17	0.24	0.27	0.25	0.03	0.0002	0.39	1	
IR	-0.31	0.004	0.006	-0.33	0.11	0.17	0.38	-0.0005	0.04	0.33	0.29	1

Table 3. Association between respondents' personality traits with respect to Innovative work behaviour (Idea Generation, Idea Presentation, Idea Realization) and Occupational Stress

Independent Variable	Dependent Variable	F Value	P-value
Personality Traits	Idea Generation	37.71	0.00*
Personality Traits	Idea Presentation	47.09	0.00*
Personality Traits	Idea Realization	48.14	0.00*
Personality Traits	Role Overload	218.17	0.00*
Personality Traits	Role Ambiguity	14.22	0.00*
Personality Traits	Role Conflict	93.42	0.00*

***= significant**

Table 4. Association between Innovative Work Behavior vs. Occupational Stress

Independent Variable (Innovative Work Behavior)	Dependent Variable (Occupational Stress)	F Value	P-value
Idea Generation	Role Overload	660.86	0.00*
Idea Presentation	Role Overload	714.05	0.00*
Idea Realization	Role Overload	716.22	0.00*
Idea Generation	Role Ambiguity	47.33	0.00*
Idea Presentation	Role Ambiguity	68.59	0.00*
Idea Realization	Role Ambiguity	70.70	0.00*
Idea Generation	Role Conflict	434.60	0.00*
Idea Presentation	Role Conflict	488.23	0.00*
Idea Realization	Role Conflict	490.34	0.00*

***= significant**

DISCUSSION

The findings of this study shed light on the intricate relationship between personality traits, Innovative Work Behavior (IWB), and Occupational Stress (OS) dimensions within a prominent Public Sector Undertaking (PSU) R&D organization. In this study, personality traits were found to have a significant impact Idea Generation, Idea Presentation, and Idea Realization. These results are consistent with several existing studies in the field (Zhou 2018; Iraq abdullah, 2016).(7) (8)Arslan Zuber (2021)also reported a positive correlation between certain personality traits and IWB, aligning with established literature.(8) However, this study goes beyond the a Study conducted by Hui Wang et al (2012) by examining the specific personality traits that influence IWB in the context of a PSU R&D organization.(9) For instance, Conscientiousness was found to be a significant predictor of Idea Realization, emphasizing the importance of diligence and persistence in bringing innovative ideas to fruition.(10) This nuanced insight provides actionable guidance for HR practitioners and organizational leaders in this sector. Young-Kook Moon et al 2023 say that Extraversion was found to be positively correlated with Role Overload in Study.(11) However, our study found a significant negative correlation between Extraversion and Role Overload, suggesting that employees with higher levels of extraversion may experience lower levels of role overload in the PSU R&D context. This variance underscores the importance of considering the organizational context when interpreting the relationship between personality and stress.

Comparing the merged results of hypothesis testing (Table 4) with those of the a study conducted by N. Mohamad et al (2016) both studies found significant relationships between IWB and OS dimensions (Role Overload, Role Ambiguity, Role Conflict).(12) However, the effect sizes and specific facets of IWB that related to OS differed. In this study, it was revealed that Idea Generation, Idea Presentation, and Idea Realization are all significantly related to the dimensions of Organizational Sustainability (OS). These findings resonate with prior research in the field. For instance, I. B. Freitas 's (2011) study underscored the positive influence of idea generation on organizational innovation performance,(13) which correlates with the current study's results on Idea Generation. Moreover, Muhammad Mohiuddin et al. (2022) (14)and fan zeng et al (2020) (15)reported similar trends by demonstrating the positive impact of sustainability initiatives and effective idea implementation on various aspects of organizational performance, thereby reinforcing the notion that Idea Presentation and Idea Realization are vital components in achieving organizational sustainability. These collective findings highlight the interplay between idea management and sustainability outcomes, emphasizing the importance of fostering a culture of innovation, effective communication, and successful implementation in the pursuit of sustainability goals. This study makes several noteworthy contributions. Firstly, it provides a nuanced understanding of the relationship between personality traits, IWB, and OS within the specific context of PSU R&D organizations. These findings offer actionable insights for HR professionals and organizational leaders in this sector, facilitating more targeted interventions to enhance innovative behaviors and manage stress effectively.

Additionally, the study highlights the importance of considering the unique organizational context when exploring these relationships. By doing so, it expands the applicability of existing personality theories to real-world settings, challenging traditional assumptions and encouraging a context-driven approach. These insights can inform evidence-based practices, ultimately fostering innovation and well-being among employees in this sector. Further research in similar contexts and with diverse samples can continue to enrich our understanding of the intricate interplay between personality, work behaviour, and stress.

REFERENCES

1) Rajapathirana RPJ, Hui Y. Relationship between innovation capability, innovation type, and firm performance. Journal of Innovation & Knowledge. 2018 Jan 1;3(1):44–55.
2) Saether E. Motivational antecedents to high-tech R&D employees' innovative work behavior: Self-determined motivation, person-organization fit, organization support of creativity, and pay justice. The Journal of High Technology Management Research. 2019 Jun 1; 30:100350.
3) Sarpong D, Boakye D, Ofosu G, Botchie D. The three pointers of research and development (R&D) for growth-boosting sustainable innovation system. Technovation. 2023 Apr 1;122:102581.
4) Bos-Nehles A, Bondarouk T, Nijenhuijs K. Innovative Work Behaviour in Knowledge-Intensive Public Sector Organizations: The Case of Supervisors in the Netherlands Fire Services. The International Journal of Human Resource Management. 2017 Jan 19;28.
5) Dwivedi YK, Hughes L, Baabdullah AM, Ribeiro-Navarrete S, Giannakis M, Al-Debei MM, et al. Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management. 2022 Oct 1;66:102542.

6) Sivadas E, Dwyer FR. An Examination of Organizational Factors Influencing New Product Success in Internal and Alliance-Based Processes. Journal of Marketing. 2000;64(1):31–49.
7) Zhou L, Zhang Z, Zhao L, Yang P. Understanding the effects of personality traits on the quality of individual ideas on open innovation platforms: a mediated empirical investigation. Aslib Journal of Information Management [Internet]. 2023 Jan 1 [cited 2023 Sep 22]; ahead-of-print(ahead-of-print). Available from: https://doi.org/10.1108/AJIM-07-2022-0345
8) Abdullah I, Omar R, Panatik SA. A Literature Review on Personality, Creativity and Innovative Behavior. International Review of Management and Marketing [Internet]. 2016 Jan 21 [cited 2023 Sep 22]; Available from: https://www.semanticscholar.org/paper/A-Literature-Review-on-Personality%2C-Creativity-and-Abdullah-Omar/3ecec374554eb41339ae289c90da98d7f0cb0286
9) Wang H, Begley T, Hui C, Lee C. Are the effects of conscientiousness on contextual and innovative performance context specific? Organizational culture as a moderator. The International Journal of Human Resource Management. 2012 Jan;23(1):174–89.
10) Ziegler M, Knogler M, Bühner M. Conscientiousness, achievement striving, and intelligence as performance predictors in a sample of German psychology students: Always a linear relationship? Learning and Individual Differences. 2009 Jun;19(2):288–92.
11) Moon YK, O'Brien KE, Mann KJ. The role of extraversion in the Great Resignation: A burnout-quitting process during the pandemic. Personality and Individual Differences. 2023 Apr 1;205:112074.
12) Mohamad N, Ismail A, Mohamad NM, Ahmad S, Yahy Z. Role Ambiguity and Role Overload as Important Predictors of Work-Family Conflict. Humaniora. 2016 Oct 30;7(4):473.
13) Freitas IB. Imprints from idea generation on innovation and organizational strategic selection. In 2014 [cited 2023 Sep 22]. Available from: https://www.semanticscholar.org/paper/Imprints-from-idea-generation-on-innovation-and-Freitas/5ff7db00e98c3f824dd80171160a42f26e3579d5
14) Mohiuddin M, Hosseini E, Faradonbeh SB, Sabokro M. Achieving Human Resource Management Sustainability in Universities. Int J Environ Res Public Health. 2022 Jan 14;19(2):928.
15) Zeng F, Lee SHN, Lo CKY. The Role of Information Systems in the Sustainable Development of Enterprises: A Systematic Literature Network Analysis. Sustainability. 2020 Jan;12(8):3337.

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Conflict of Interest
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