



Exploring the Relationships among Workplace Deviance, Employee Engagement and Research Quality in Higher Education Institutions: A Moderated-Mediation Study in Sokoto State, Nigeria

Nura Abubakar Allumi^{1*}, Musa Muhammad Lawal², Muhammad Zayyanu²

¹ School of Technology Management and Logistics, College of Business, Universiti Utara Malaysia, 06010 Sintok, Malaysia

² Department of Public Administration, Faculty of Management Sciences, Usmanu Danfodiyo University Sokoto, 840001 Sokoto, Nigeria

* Correspondence: Nura Abubakar Allumi (nura.abubakar.allumi@uum.edu.my)

Received: 04-09-2024

Revised: 05-26-2024

Accepted: 06-15-2024

Citation: Nura, A. A., Lawal, M. M., & Zayyanu, M. (2024). Exploring the relationships among workplace deviance, employee engagement and research quality in higher education institutions: A moderated-mediation study in Sokoto State, Nigeria. *Educ. Sci. Manag.*, 2(2), 101-115. <https://doi.org/10.56578/esm020204>.



© 2024 by the author(s). Published by Acadlore Publishing Services Limited, Hong Kong. This article is available for free download and can be reused and cited, provided that the original published version is credited, under the CC BY 4.0 license.

Abstract: This study investigates the intricate relationships among workplace deviance, employee engagement, and research quality within the context of higher education institutions (HEIs) in Nigeria, specifically in Sokoto State. Grounded in dynamic capability theory, the normative perspective, and employee engagement theory, this study posits that workplace deviance detrimentally influences employee engagement, which in turn adversely impacts research quality. A moderated-mediation model was proposed, suggesting that employee engagement mediates the relationship between workplace deviance and research quality, while also being moderated by institutional support mechanisms. The analysis, conducted using SmartPLS 4, includes an examination of response rates, preliminary data assessment, validation of measurement instruments, and hypothesis testing. The findings reveal a complex dynamic where workplace deviance, when moderated by a supportive institutional environment, indirectly enhances research quality through increased employee engagement. This paradoxical outcome underscores the significance of fostering a positive work culture that can mitigate the adverse effects of deviant behavior, thereby promoting research excellence. The study's theoretical and practical implications suggest that mitigating workplace deviance, enhancing employee engagement, and encouraging participatory decision-making are crucial for improving research outcomes. Future research is encouraged to further explore the interplay between workplace deviance and employee engagement and to assess the generalizability of these findings across diverse institutional contexts.

Keywords: Workplace deviance; Employee engagement; Research quality; Higher education institutions; Nigeria

1. Introduction

The surge in Ph.D. graduates from African institutions marks a significant advancement in the commitment to higher education and research across the continent. This increase not only signifies a burgeoning dedication to academic excellence but also reflects a broader shift towards more dynamic and innovative educational environments. The growing number of doctoral candidates highlights an encouraging trend towards a more robust academic framework capable of addressing complex societal challenges through advanced research and scholarship. However, this rise in doctoral candidates also brings to light a series of complex challenges that extend beyond individual achievements to impact the entire landscape of African higher education. The expansion in the number of Ph.D. graduates is accompanied by an array of systemic issues that pose significant obstacles to realizing the full potential of this growing academic workforce. Among these challenges, issues related to workplace deviance, employee engagement, and research quality emerge as critical factors that collectively shape the effectiveness and reputation of academic institutions.

Workplace deviance, which encompasses a range of detrimental behaviors such as absenteeism, tardiness, and sabotage, poses a severe threat to the productivity and morale of academic staff. Absenteeism, where employees

frequently miss work without valid reasons, disrupts the continuity of research projects and academic activities. Tardiness interferes with scheduled meetings and collaborative efforts, leading to delays and inefficiencies. Sabotage, including actions that undermine colleagues' work or hinder institutional goals, erodes trust and cooperation among staff members. These negative behaviors collectively undermine the collaborative and supportive atmosphere essential for high-quality research, creating an environment where academic output and institutional performance suffer.

In this context, employee engagement emerges as a crucial factor in mitigating the adverse effects of workplace deviance. Employee engagement refers to the level of commitment, enthusiasm, and involvement that staff members exhibit towards their work and institutional goals. Engaged employees are characterized by their proactive attitude, high motivation, and dedication to their roles. They are more likely to take ownership of their responsibilities, contribute positively to team dynamics, and work collaboratively with colleagues. This high level of engagement fosters a culture of excellence and supports a positive work environment conducive to high-quality research. Engaged employees are also more resilient in the face of challenges and are better equipped to overcome obstacles, thus enhancing the overall research output and institutional effectiveness. Conversely, low levels of employee engagement can exacerbate workplace deviance and its detrimental effects. When employees are disengaged, they often exhibit reduced motivation, a lack of enthusiasm, and minimal investment in their work. This disengagement can lead to increased absenteeism, tardiness, and other forms of deviant behavior, further disrupting the academic environment (Golparvar, 2015). The resulting decline in motivation and productivity has a direct impact on research quality. Disengaged employees are less likely to contribute effectively to collaborative research efforts, resulting in lower standards of academic output and diminished impact.

To address these challenges, it is essential for African institutions to develop and implement strategies that enhance employee engagement while combating workplace deviance. This involves creating a supportive and inclusive work culture that promotes accountability, encourages positive behavior, and fosters collaboration. By investing in initiatives that improve employee engagement and address the root causes of workplace deviance, institutions can create an environment where high-quality research can flourish. This, in turn, will contribute to the advancement of knowledge, the enhancement of institutional performance, and the overall growth of higher education in Africa.

Research quality itself is a reflection of both the institutional environment and the individual efforts of researchers. High-quality research relies on well-maintained facilities, access to resources, and a supportive academic culture. When workplace deviance and low employee engagement compromise these elements, the resulting research may suffer in terms of rigor, originality, and impact. This creates a cycle where diminished research quality can further disillusion academic staff and perpetuate a negative work environment.

Understanding the interplay between workplace deviance, employee engagement, and research quality is essential for developing effective strategies to enhance research output and institutional effectiveness. By addressing workplace deviance and fostering higher levels of employee engagement, African institutions can improve research quality and support the broader goal of advancing academic and scientific contributions. This interconnected approach not only benefits individual researchers but also strengthens the overall educational landscape, contributing to the growth and development of higher education in Africa. Despite the notable increase in Ph.D. graduates across African universities, many institutions continue to grapple with subpar research quality. This paradox often stems from underlying issues related to workplace deviance and insufficient employee engagement, which collectively impede the effectiveness and productivity of academic research.

Workplace deviance includes behaviors such as frequent absenteeism, tardiness, and undermining colleagues. These actions undermine the integrity and functionality of an academic environment, disrupting research continuity, delaying academic processes, and creating a toxic work culture. Such behaviors fracture team dynamics, erode trust and cooperation, and ultimately hinder high-quality research. The consequences of workplace deviance are far-reaching. Absenteeism and lateness disrupt research projects, leading to missed deadlines and incomplete work. Undermining colleagues fractures team dynamics and erodes cooperation, which is crucial for high-quality research. As trust and cooperation diminish, researchers may experience increased stress and frustration, leading to reduced motivation and engagement. This, in turn, further exacerbates the decline in research quality, as disengaged employees contribute less effectively and display lower levels of commitment.

To address these challenges, it is essential for African universities to implement effective strategies that combat workplace deviance and enhance employee engagement. Developing robust policies and support systems that promote accountability, encourage positive behavior, and foster a collaborative work culture are crucial steps. By addressing these underlying issues, institutions can create an environment where research quality thrives, leading to more impactful and credible academic contributions.

This study was designed to explore the complex interplay between workplace deviance, employee engagement, and research quality within four state-owned HEIs in Sokoto State: Sokoto State University, Umaru Ali Shinkafi Polytechnic Sokoto, Shehu Shagari College of Education Sokoto, and the School of Nursing and Midwifery Sokoto. Using a quantitative research approach with SmartPLS4, the study aims to analyze how these factors interact and affect research quality. By uncovering how workplace deviance influences employee engagement and

how these elements, in turn, impact research quality, the study seeks to identify key areas for intervention and improvement. Insights gained from this analysis can provide valuable recommendations for enhancing academic performance, fostering a supportive and engaging work environment, and ultimately improving the overall quality of research output. Through this investigation, the study aims to contribute to the development of effective strategies and policies that address the challenges faced by HEIs in Sokoto State. By focusing on improving employee engagement and reducing workplace deviance, the research aspires to enhance institutional success and advance the quality of academic research in the region.

2. Theoretical Framework

2.1 Dynamic Capability Theory

Dynamic Capability Theory, as articulated by Teece et al. (1997), provides a valuable framework for understanding how organizations adapt to rapidly changing environments. This theory emphasizes the importance of an organization's ability to develop, integrate, and reconfigure internal and external resources to respond to dynamic market conditions and technological advancements. In the context of higher education, where institutions face constant shifts in academic trends, technological innovations, and global competition, the theory underscores the need for institutions to continuously reinvent themselves to maintain their relevance and effectiveness. Ilmudeen (2022) highlighted that such adaptability is not merely a strategic option but a critical necessity for HEIs to survive and thrive in a continually evolving academic landscape (Guerrero-Alba et al., 2022).

The relevance of Dynamic Capability Theory to this research becomes evident when examining the connections between workplace deviance, employee engagement, and research quality. In this context, the theory suggests that HEIs' ability to adapt and respond to challenges can influence how deviant behaviors impact employee engagement. Institutions that effectively harness their dynamic capabilities can foster a supportive work environment, thereby mitigating the negative effects of workplace deviance on employee engagement. Engaged employees are likely to emerge from such institutions, where adaptive practices and supportive environments are in place to address and manage deviant behaviors constructively (Jnaneswar & Ranjit, 2023; Kareem & Alameer, 2019; Mikalef et al., 2020). Similarly, according to the theory, HEIs' dynamic capabilities enable them to adapt and reconfigure their resources and practices, which can influence the quality of research outputs. Deviant behaviors that undermine research integrity or quality can be addressed through the institution's adaptive strategies, which help maintain high standards of research practice. By continuously evolving and integrating new approaches, HEIs can mitigate the adverse effects of workplace deviance on research quality (Ilmudeen, 2022). The ability to adapt is crucial for ensuring that research practices remain robust and effective despite challenges posed by deviant behaviors (Kareem & Alameer, 2019; Mikalef et al., 2020). Furthermore, the theory suggests that dynamic capabilities enhance employee engagement by creating an adaptive and supportive work environment. Engaged employees, who are committed and enthusiastic, are likely to contribute more effectively to high-quality research. This mediation effect highlights the importance of dynamic capabilities in influencing employee engagement and, consequently, research outcomes (Guerrero-Alba et al., 2022; Jnaneswar & Ranjit, 2023). Finally, the theory implies that the working environment, shaped by an institution's dynamic capabilities, can influence the relationship between employee engagement and research quality. A well-resourced and adaptable environment can amplify the positive effects of employee engagement on research quality, demonstrating how dynamic capabilities help optimize organizational practices to improve research outcomes (Jnaneswar & Ranjit, 2023; Kareem & Alameer, 2019).

Integrating Dynamic Capability Theory into the analysis of workplace deviance, employee engagement, and research quality provides a comprehensive understanding of how HEIs can adapt to challenges and maintain high standards. This theoretical approach contributes to the literature by highlighting the crucial role of dynamic capabilities in addressing workplace deviance and enhancing research quality in higher education settings (Guerrero-Alba et al., 2022; Ilmudeen, 2022).

2.2 Practic-Based View

The PBV, an evolution of the resource-based view, provides a significant framework for understanding the flexibility and adaptability of practices within organizations. As articulated by Almohri (2018) and Wamba et al., (2017), PBV emphasizes the importance of flexible and context-specific practices in achieving organizational success. In the realm of higher education, where teaching methods, research systems, and administrative practices are continuously evolving, PBV underscores the necessity for educational institutions to adapt their practices in response to changing academic and societal demands.

In the context of HEIs, PBV highlights how the adaptability of teaching and research practices can influence various organizational outcomes. For instance, PBV aligns with the notion that effective teaching methods and research frameworks must evolve to meet the needs of diverse student demographics and shifting academic trends

(Barney et al., 2021; Gerhart & Feng, 2021). This adaptability is crucial for maintaining high standards of educational quality and research excellence. When examining the relationship between workplace deviance, employee engagement, and research quality, PBV offers valuable insights. PBV suggests that the flexibility of institutional practices can impact how deviant behaviors affect employee engagement and research outcomes. HEIs that integrate adaptable practices can better manage workplace deviance by fostering an environment where employees are engaged and motivated to contribute positively. This adaptability helps in addressing the challenges posed by deviant behaviors and supports the continuous improvement of research quality (Almohri, 2018; Wamba et al., 2017). Furthermore, PBV emphasizes the role of sustainability in organizational practices. In higher education, this translates to the implementation of sustainable research practices and ethical standards. PBV highlights that maintaining high research quality involves integrating sustainability into research methodologies and administrative processes (Barney et al., 2021; Gerhart & Feng, 2021). By adopting flexible and sustainable practices, HEIs can enhance research quality and mitigate the negative impacts of workplace deviance. Moreover, PBV suggests that employee engagement is influenced by the adaptability and effectiveness of institutional practices. Engaged employees are more likely to be involved in practices that support high-quality research and contribute to the institution's success. The alignment of PBV with employee engagement theories indicates that flexible and supportive practices can enhance employee motivation and commitment, leading to improved research outcomes (Almohri, 2018; Wamba et al., 2017).

In summary, incorporating PBV into the analysis of workplace deviance, employee engagement, and research quality provides a comprehensive understanding of how adaptable practices influence organizational performance. PBV underscores the importance of flexibility and sustainability in maintaining high standards of research and effectively managing workplace deviance. This theoretical approach contributes to the literature by demonstrating how adaptive practices can enhance employee engagement and research quality in HEIs (Barney et al., 2021; Gerhart & Feng, 2021).

2.3 Employee Engagement Theory

Employee Engagement Theory provides a vital lens through which to understand the impact of employee attitudes and behaviors on organizational outcomes. As articulated by Schaufeli et al. (2002) and further developed by Bhatnagar (2007), employee engagement encompasses cognitive, emotional, and behavioral dimensions, emphasizing the profound connection between employees and their roles within the organization. In the context of higher education, where engagement is crucial for fostering high-quality research and a productive academic environment, this theory highlights the importance of cultivating a committed and enthusiastic workforce.

In relation to workplace deviance, Employee Engagement Theory suggests that engaged employees are less likely to engage in deviant behaviors. Engaged individuals, driven by enthusiasm and a strong sense of ownership, tend to adhere to organizational norms and ethical standards (Hakanen et al., 2008; Román-González et al., 2017). They are more likely to contribute positively to their institution, avoiding actions that could undermine organizational effectiveness. This connection underscores the role of employee engagement in mitigating the negative impacts of workplace deviance on organizational performance. Furthermore, Employee Engagement Theory also plays a significant role in understanding the quality of research produced by HEIs. Engaged researchers are more likely to be committed to their work, leading to higher-quality research outcomes. The enthusiasm and dedication of engaged employees can translate into meticulous and innovative research practices, enhancing the overall research quality (Kim et al., 2012; Sharma & Kumra, 2020). Engaged scholars, who invest time and effort into their research, are better positioned to produce impactful and high-quality academic work. Incorporating Employee Engagement Theory into the analysis of research quality and workplace deviance emphasizes the importance of fostering an environment that supports and nurtures employee engagement. Institutions that prioritize engagement are likely to see improved research quality and a reduction in negative deviant behaviors. The theory supports the notion that engaged employees are more motivated and committed, leading to better research outcomes and a more positive organizational climate (Brockhoff & Rao, 1993; Davies et al., 2001). Moreover, Employee Engagement Theory highlights the mediating role of engagement in the relationship between workplace deviance and research quality. Engaged employees are likely to demonstrate greater resilience and dedication, which can buffer the adverse effects of deviant behaviors on research quality. By fostering high levels of engagement, institutions can enhance their ability to produce high-quality research and effectively manage workplace challenges (Muzee et al., 2021; Pattnaik & Jena, 2021; Shuck et al., 2021).

In summary, integrating Employee Engagement Theory into the examination of workplace deviance and research quality provides valuable insights into how employee attitudes and behaviors influence organizational outcomes. The theory underscores the importance of engagement in improving research quality and mitigating the effects of deviant behaviors, contributing to a more comprehensive understanding of organizational dynamics in higher education settings.

3. Hypotheses Development

3.1 Workplace Deviance and Employee Engagement

Recent research into workplace deviance has broadened its scope by introducing and differentiating various concepts such as positive deviance and constructive deviance. Positive deviance, as explored by Kibirango et al. (2017) and Kim & Choi (2018), refers to behaviors that deviate from established organizational norms but result in beneficial outcomes for the organization. These behaviors challenge traditional norms and can lead to innovative practices or improvements that enhance organizational effectiveness. This perspective shifts the focus from solely negative implications of deviant behavior to recognizing its potential positive contributions under specific circumstances. Constructive deviance, similarly, has been highlighted by Appelbaum et al. (2007), Kura et al. (2016), Malik & Lenka (2019), and Sharma & Singh (2018). This concept involves unauthorized actions that are aimed at positively contributing to the organization's objectives. Unlike traditional forms of deviance that are often viewed negatively, constructive deviance involves behaviors that, while not formally sanctioned, support and advance the organization's goals, potentially driving better performance and innovation. Despite these evolving perspectives, traditional views still predominantly emphasize the negative impacts of workplace deviance, especially in relation to employee engagement. Employee engagement, characterized by enthusiasm, dedication, and a strong commitment to one's work (Schaufeli et al., 2002), is often considered negatively correlated with workplace deviance. Deviant behaviors, which breach established organizational norms (Robinson & Bennett, 1995), are seen as disruptive to the work environment and are expected to undermine employee engagement. Engaged workers, motivated by a sense of pride and ownership in their roles, are more likely to adhere to organizational codes of conduct and maintain high moral standards, thereby minimizing their involvement in deviant activities (Hakanen et al., 2008; Román-González et al., 2017). Given this understanding, the hypothesis posits that higher levels of workplace deviance are associated with lower levels of employee engagement. This expectation is grounded in the notion that as workplace deviance increases, it disrupts organizational norms and standards, which in turn diminishes employee engagement. The disruption caused by deviant behavior is likely to undermine the positive work environment that fosters engagement, leading to a decrease in overall employee commitment and enthusiasm. Thus, the following hypothesis was proposed:

Hypothesis 1: Workplace deviance is negatively related to employee engagement.

3.2 Workplace Deviance and Research Quality

Recent research has increasingly focused on the impact of workplace deviance on various organizational outcomes, including the quality of research within HEIs. Workplace deviance, defined by Robinson & Bennett (1995) as behaviors that violate established organizational norms, encompasses a range of actions from minor infractions to serious violations. In the academic context, these deviant behaviors may include unethical research practices or substandard research performance, both of which can negatively impact the integrity and quality of research outputs (Akgunduz et al., 2023; Srivastava et al., 2023). Workplace deviance in research settings can manifest in two primary forms: departures from ethical research practices and norms of scholarly conduct, and substandard research performance. Unethical behaviors, such as falsifying data or neglecting proper peer review processes, directly undermine the credibility and validity of research findings. Such actions can lead to flawed research outputs and tarnish the institution's academic reputation (Akgunduz et al., 2023). Deviant behaviors, whether driven by protective, repair, or defensive motivations, further complicate this issue. Protective motivations may lead researchers to engage in deviant behaviors to shield themselves from errors or criticism. Repair motivations might drive researchers to correct mistakes but can also influence their collaborative efforts to enhance research quality. Defensive motivations may cause researchers to attribute lapses in research quality to external factors rather than addressing internal issues, potentially compromising research standards and collaborative projects (Arshad, 2023; Aleksić et al., 2019). In addition to these behavioral aspects, there is a broader implication for HEIs: the need for preventive measures and strategies to address workplace deviance. Cultivating a culture of integrity and commitment to high research standards is crucial. HEIs should implement measures such as providing research ethics courses or seminars, establishing supportive research environments, and creating transparent channels for addressing quality-of-research concerns. By doing so, HEIs can play a significant role in maintaining the quality of research conducted within their academic communities and upholding scholarly traditions (Golpalvar, 2015). Based on these considerations, the hypothesis posits that workplace deviance is negatively related to research quality. This hypothesis reflects the expectation that as workplace deviance increases, particularly through unethical or substandard practices, the quality of research outputs declines. Therefore, to preserve high research standards, HEIs must address and mitigate the adverse effects of workplace deviance through targeted strategies and interventions. Thus, the following hypothesis was proposed:

Hypothesis 2: Workplace deviance is negatively related to research quality.

3.3 Employee Engagement and Research Quality

The relationship between workplace deviance and employee engagement is complex and multifaceted. Employee engagement is typically characterized by enthusiasm, dedication, and a strong commitment to one's work (Schaufeli et al., 2002). Engaged employees are more likely to adhere to organizational norms and exhibit high levels of productivity and commitment. On the other hand, workplace deviance involves behaviors that breach established organizational norms, ranging from minor infractions to significant violations (Robinson & Bennett, 1995). While it is well established that workplace deviance can negatively affect employee engagement (Hakanen et al., 2008; Román-González et al., 2017), the influence of employee engagement on research quality introduces additional considerations. Engaged employees, who are committed to their roles and take pride in their work, are expected to exhibit higher levels of performance and adherence to research standards. As a result, their engagement positively affects the quality of their research outputs. Research has shown that positive employee engagement can lead to enhanced performance and higher quality of work (Schaufeli et al., 2002). In the context of research within HEIs, engaged employees are likely to be more diligent, ethical, and committed to producing high-quality research. Thus, employee engagement can act as a mediator, improving the quality of research outcomes by fostering a more dedicated and rigorous approach to academic work. Given this understanding, the hypothesis posits that employee engagement positively influences research quality. This reflects the expectation that higher levels of engagement among employees result in better quality research outputs, as engaged researchers are more likely to adhere to high standards and contribute to rigorous academic practices. Thus, the following hypothesis was proposed:

Hypothesis 3: Employee engagement is positively related to research quality.

3.4 Mediating Hypothesis

Interest in employee engagement surged significantly from 2006 to 2011, extending beyond industry discussions to academic exploration. Scholars began to investigate various dimensions of this concept, including personal engagement, job involvement, and overall satisfaction with one's job (Welch, 2011). Employee engagement involves individuals fully integrating their personal selves into their work roles, creating a deep connection that encompasses physical, emotional, and spiritual aspects. In the context of higher education, scholars are expected to fully engage with their institutions, dedicating their time, effort, and initiative to contribute to institutional success (Sharma & Kumra, 2020). A key aspect of employee engagement, as outlined by Karatepe (2014), is its direct impact on performance outcomes. Engaged scholars are more likely to produce high-quality research due to their increased motivation and dedication. Brockhoff & Rao (1993) supported this view, noting that employee engagement often emerges from adequate job resources. In academic settings where employees have access to proper equipment and supportive conditions, their engagement is likely to increase, reducing feelings of alienation and leading to enhanced research quality (Davies et al., 2001).

Employees with high levels of engagement are more likely to make positive contributions to their academic community, maintaining cooperative relationships with their institutions and producing high-quality research. This relationship highlights the crucial mediating role of researchers' engagement in linking institutional practices to research quality. Institutions with a strong culture of engagement among researchers are better positioned to achieve top-quality research outcomes (Kim et al., 2012). The relationship between employee engagement and research quality within HEIs underscores the importance of understanding how engagement affects academic outputs. Employee engagement, defined by Schaufeli et al. (2002) as enthusiasm, dedication, and commitment to one's work, plays a significant role in enhancing research quality. Engaged employees are more likely to adhere to ethical guidelines and maintain rigorous standards, leading to higher research standards and outputs (Hakanen et al., 2008; Román-González et al., 2017).

Conversely, low levels of employee engagement can lead to reduced motivation and commitment, resulting in potential lapses in research quality. Disengagement may manifest as reduced adherence to research protocols, lower ethical standards, and overall diminished performance. Therefore, employee engagement is a critical determinant of research quality, influencing the thoroughness and ethical standards of research activities. Given this understanding, the hypothesis suggests that employee engagement mediates the relationship between workplace deviance and research quality. Specifically, while workplace deviance may negatively impact research quality, this effect is moderated by the level of employee engagement. Engaged employees are better equipped to counteract the adverse effects of workplace deviance, thereby maintaining higher research quality despite the presence of deviant behaviors. Thus, the following hypothesis was proposed:

Hypothesis 4: Employee engagement mediates the relationship between workplace deviance and research quality.

3.5 Moderating Hypothesis

The working environment of HEIs in Nigeria plays a crucial role in influencing faculty performance, not only within classrooms but also in broader academic activities. Research consistently shows a correlation between poor working conditions and reduced research output in Nigerian HEIs. For instance, Babatope (2010), Kumarasamy et al. (2015), Musa & Ahmad a Baharum (2012), Ndirangu & Udoto (2011) and Raziq & Maulabakhsh (2015) highlighted how inadequate working conditions negatively impact research quality. High levels of employee engagement, which encompass commitment, motivation, and involvement, are associated with enhanced research quality. This underscores the importance of investigating whether the working environment acts as a moderator in the relationship between employee engagement and research quality. Employee engagement, characterized by dedication and enthusiasm for one's work (Schaufeli et al., 2002), positively affects research quality by fostering motivation and commitment among faculty members. A conducive working environment—one that is comfortable and well-equipped—can facilitate high-quality research by providing spaces conducive to creativity and collaboration (Babatope, 2010; Kumarasamy et al., 2015; Musa & Ahmad a Baharum, 2012; Ndirangu & Udoto, 2011). Consequently, the quality of the working environment may moderate the relationship between employee engagement and research quality. Under optimal working conditions, the positive impact of employee engagement on research quality may be strengthened. Conversely, under poor working conditions, the effect of engagement on research quality may be diminished, though engaged researchers still tend to produce higher-quality research compared to their less engaged counterparts. Thus, improvements in working conditions could enhance the impact of employee engagement on research quality outcomes. In examining the complex interplay between workplace deviance, employee engagement, and research quality, it is essential to understand how employee engagement influences the effects of workplace deviance on research quality. As defined by Schaufeli et al. (2002), employee engagement involves enthusiasm, commitment, and dedication to work, which significantly influences organizational outcomes, including research quality.

Workplace deviance, which involves behaviors that breach organizational norms (Robinson & Bennett, 1995), can adversely affect research quality. Deviant behaviors, such as ethical violations or substandard research practices, undermine the integrity of research outputs (Akgunduz et al., 2023; Srivastava et al., 2023). However, the impact of such deviance may be moderated by the level of employee engagement. Engaged employees are more likely to uphold high research standards and address the negative effects of deviant behaviors, potentially sustaining or even enhancing research quality. This suggests that employee engagement could serve as a moderating factor, influencing the strength of the relationship between workplace deviance and research quality. Thus, the following hypothesis was proposed:

Hypothesis 5: Employee engagement moderates the relationship between workplace deviance and research quality, such that the negative effect of workplace deviance on research quality is weaker when employee engagement is higher.

4. Methodology

A quantitative approach was adopted in this study, using a cross-sectional survey design to collect data from participants in HEIs. This design was chosen to capture a snapshot of the current relationships between workplace deviance, employee engagement, and research quality at a single point in time.

4.1 Data Collection Procedures

Data was collected using a structured questionnaire distributed to faculty members across several HEIs. The survey instrument was developed based on existing literature and included validated scales to measure the key variables: workplace deviance, employee engagement, and research quality. The survey was administered electronically to ensure convenience and accessibility for respondents.

4.2 Sampling Technique and Sample Size

A stratified random sampling technique was employed to ensure representation across different academic departments and roles within the HEIs. The total sample size was determined based on a power analysis to ensure adequate statistical power for hypothesis testing. A total of 300 questionnaires were distributed, and 246 responses were received. After validation, 82% of the responses were deemed valid, reflecting a high level of participant involvement and engagement.

4.3 Variable Measures Used

Workplace deviance: To assess workplace deviance, the scale developed by Robinson & Bennett (1995) was

used in this study, which has been widely recognized for its robust measurement of deviant behaviors in organizational settings. This scale includes items that capture a range of behaviors violating organizational norms, such as minor infractions like lateness or absenteeism, as well as more severe acts like theft or sabotage. The scale is grounded in comprehensive theoretical work and empirical research, providing a reliable framework for identifying deviations from expected organizational conduct. Its validation across various studies supports its applicability in diverse organizational contexts, including HEIs. By employing this scale, the study ensures that the measurement of workplace deviance is both accurate and consistent, enabling a precise examination of how such behaviors impact other variables in the research.

Employee engagement: Employee engagement was measured using the Utrecht Work Engagement Scale (UWES), developed by Schaufeli et al. (2002). This scale is highly regarded for its ability to capture the multidimensional nature of engagement, which includes enthusiasm, dedication, and commitment to one's work. The UWES consists of items that evaluate the extent to which employees are psychologically invested in their roles, driven by a sense of vigor, dedication, and absorption in their tasks. The use of UWES is supported by extensive validation in various organizational settings, confirming its reliability in measuring engagement levels. This instrument's precision in capturing the depth of engagement makes it an ideal tool for understanding how employee engagement influences research quality and the effects of workplace deviance.

Research quality: Research quality was evaluated through a combination of self-reported metrics and peer-reviewed assessments. Self-reported metrics involve collecting data on adherence to research protocols, such as compliance with ethical guidelines and thoroughness in methodological practices. These metrics provide insights into researchers' self-perceptions of their adherence to quality standards. Additionally, peer-reviewed assessments were used to gauge the overall impact and quality of research outputs. Peer reviews, conducted by experts in the field, offer an objective evaluation of the research's contribution to the academic community, its rigor, and its alignment with established standards. This dual approach—integrating both self-assessments and external evaluations—ensures a comprehensive assessment of research quality, capturing both subjective and objective dimensions of scholarly work.

4.4 Data Analysis Techniques

Data analysis for this study was conducted using SmartPLS 4, a powerful tool for Partial Least Squares-Structural Equation Modeling (PLS-SEM), chosen for its alignment with the research objectives and methodological needs of this study. SmartPLS 4 excels in handling complex models with multiple latent variables, which is crucial for exploring intricate interactions between workplace deviance, employee engagement, and research quality. Its suitability for small to medium sample sizes—such as the sample of 246 valid responses—ensures reliable parameter estimates without the need for larger samples. The software's capabilities in latent variable modeling allow for a comprehensive examination of direct, indirect, and interaction effects. Additionally, SmartPLS 4's support for advanced techniques like bootstrapping and path analysis enhances the precision of hypothesis testing by providing robust measures of significance and confidence intervals. A preliminary data examination was carried out to identify trends and outliers, ensuring that the data analysis was based on accurate and reliable information. The validity and reliability of the measurement instruments were rigorously assessed through convergent and discriminant validity checks, as well as reliability analyses using Cronbach's alpha and composite reliability scores. Overall, SmartPLS 4's advanced functionalities and its compatibility with the research design of this study justify its selection for this study, enabling a detailed and reliable analysis of the hypothesized relationships among the variables.

5. Data Analysis, Results and Findings

5.1 Analysis and Results

In this section, a detailed exploration of the quality, longevity, and computational strategies employed in the data analysis is presented. The analysis commenced with the careful selection and application of survey instruments, which were meticulously designed to align with the study's objectives. The development of these tools incorporated advanced software-coded formulas to ensure the precision and reliability of the data collected. After examining the response rate, it was found that 82% of the questionnaires issued not only were returned but also proved valid. This considerable response rate reflects a high level of participant involvement and evidence that supports the robustness of the study results. This remarkable response rate is a testament to study participants' support and dedication in putting forward useful information for this study. Analysis of the data shifts from individual response rates to a preliminary look at the data itself, aiming to determine what are some initial patterns, trends and potential outliers one might notice here. This exploratory stage lays the plank for a better understanding of the basis of what this study is about to analyze. In this way, the subsequent analyses can be honed effectively. Rigorous scrutiny of convergence and reliability figures is a vital aspect of this study. Aid was provided by a

careful and thorough examination of the correctness, meaning they gave what this study expects to get, thereby confirming whether or not these instruments used in this study serve well as instruments. This additional examination not only strengthens the force with which deductions are made but also helps form a better foundation for the conclusions in general. Further enriching the ways of method used to prove or disprove things, hypothesis testing was observed in-depth. These hypotheses, which spring from theoretical frameworks and problems in need of solution, are subjected to empirical testing. The results of this rigorous testing not only help prove that the research claims are true but can also give us a deeper grasp on the relationships being studied. In sum, this comprehensive section on data analysis gives a detailed exploration of the response rate, begins on an insightful preliminary examination of data, carefully checks the validity and reliability of the measurement instruments, and rigorously tests the hypotheses. Massed together, such analytical efforts bring forth a rich, comprehensive portrayal of the research findings, increasing the persuasiveness and depth of the exposition. Figures 1 and 2 show the initial and modified PLS path models.

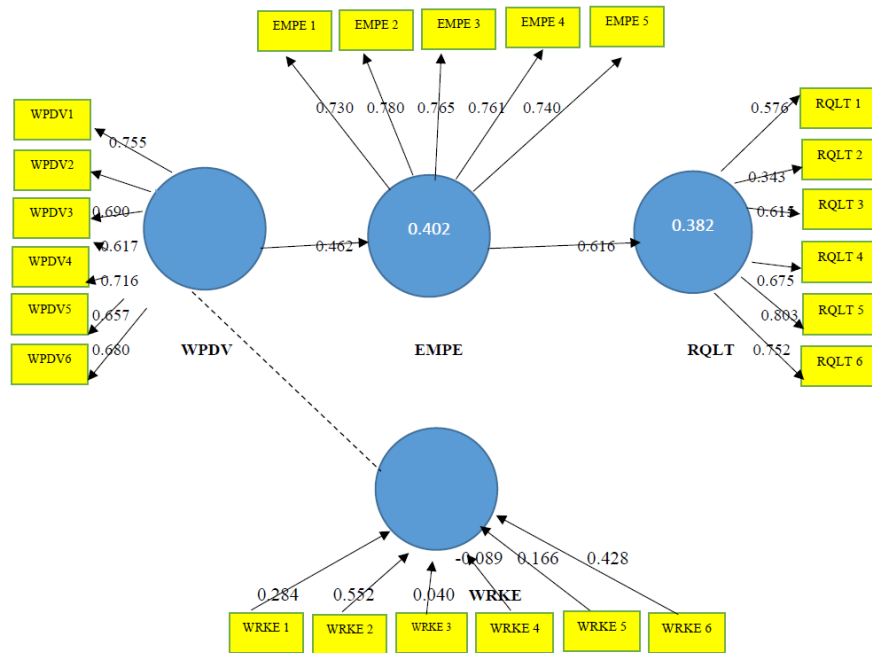


Figure 1. Initial PLS path model

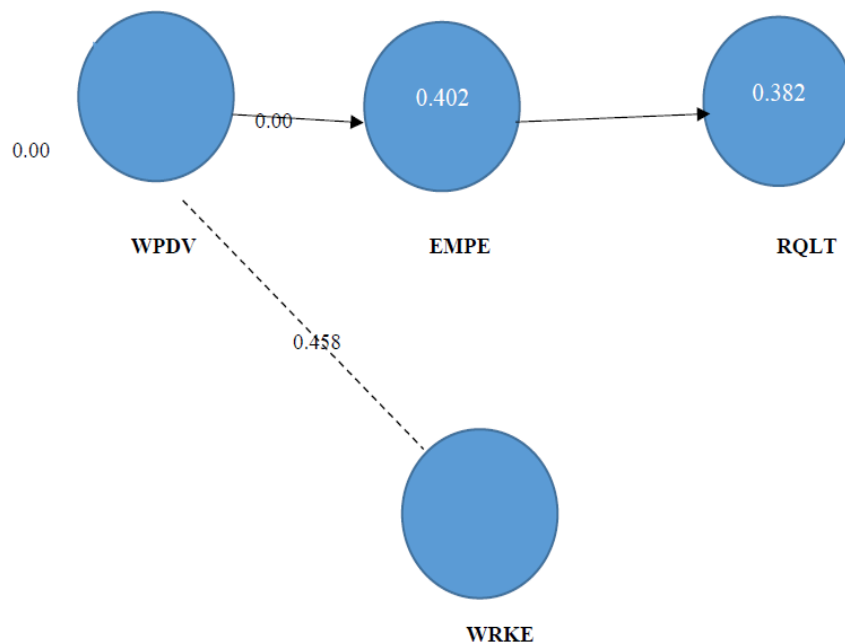


Figure 2. Modified PLS path model

As detailed by Hair et al. (2010), convergent validity is achieved when item load is higher than 0.5 and no items from other constructs have a loading superior to the one it plans to assess. As shown in Table 1, bolded items have their loadings above 0.5. Interestingly, the table confirms this because EMPE1 to EMPE5 indicate employee engagement, and the high values of these variables (0.730 to 0.740) suggest good convergent validity. Similarly, the indices RQLT1 to RQLT6, which are measures of research quality, all have values ranging from 0.576 through 0.803. Indicators WPDV1 to WPDV6 show that workplace deviance values are from 0.680 to 0.755, and WRKE1 to WRKE6 indicate that work environment values are between 0.469 and 0.725.

Table 1. Loadings and outer loadings

EMPE1	0.730	
EMPE2	0.780	
EMPE3	0.765	
EMPE4	0.761	
EMPE5	0.740	
RQLT1		0.576
RQLT2		0.343
RQLT3		0.615
RQLT4		0.675
RQLT5		0.803
RQLT6		0.752
WPDV1		0.755
WPDV2		0.690
WPDV3		0.617
WPDV4		0.716
WPDV5		0.657
WPDV6		0.680
WRKE1		0.725
WRKE2		0.781
WRKE3		0.469
WRKE4		0.550
WRKE5		0.566
WRKE6		0.701
WRKE×WPDV		1.000

The loading in Table 2 presents the relationship between latent variables and their indicators. Specifically, the loading for the latent variable employee engagement (EMPE) internal consistency is 0.618, which is high with other variables. In addition, the latent factor itself has a high positive correlation. By comparison, work environment (WRKE) and workplace deviance (WPDV), which were denominated symbolically, represent moderate relationships between variables like these put together. Loading of latent variable WRKE is 0.313. This means some of the various aspects considered in its measurement have been strong enough to connect them with win or lose indicators. The interaction term $WRKE \times WPDV$ has a loading of 0.031 on itself, which indicates not a strong association.

Table 2. Relationship between latent variables and their indicators

	EMPE	RQLT	WPDV	WRKE	WRKE×WPDV
EMPE		0.618			
RQLT					
WPDV	0.462				
WRKE	0.313				
WRKE×WPDV	0.031				

The specific indirect effects, as shown in Table 3, offer us deep insights on how the subtlety of relationships among key constructs works out. Notably, the specific indirect effect for the route from workplace deviance to research quality, mediated by employee engagement, yields a value of 0.286. Similarly, the specific indirect effect for the path from work environment to research quality through employee engagement is 0.194, indicating a moderate positive impact. In addition, the combined effect of work environment and workplace deviance in research quality, as captured by the moderator $WRKE \times WPDV$, is a specific indirect effect of 0.019. This symbolizes a sign of moderation capability of WRKE on that contrast difference since both factors influence employee engagement. These outcomes brought to light the unique path-specific effects of the model, thereby providing a detailed understanding of how employee engagement mediates for research quality as well as through the moderator.

Table 3. Specific indirect effects

	Specific Indirect Effects
WPDV → EMPE → RQLT	0.286
WRKE → EMPE → RQLT	0.194
WRKE × WPDV → EMPE → RQLT	0.019

5.2 Findings

i. Validity and reliability

To assess the validity and reliability of the measurement instruments, the convergent and discriminant validity as well as the internal consistency of the constructs were examined in this study. According to Hair et al. (2010), convergent validity is confirmed when the factor loadings of measurement items exceed 0.5, and no items from other constructs load higher on the construct of interest than the items specifically designed for it. The results, as shown in Table 1, confirm that convergent validity is achieved for the constructs. Specifically, items representing employee engagement (EMPE1 to EMPE5) exhibit high loadings ranging from 0.730 to 0.740, indicating robust convergent validity. Similarly, indicators of research quality (RQLT1 to RQLT6) show loadings between 0.576 and 0.803. Workplace deviance indicators (WPDV1 to WPDV6) demonstrate loadings ranging from 0.680 to 0.755, while work environment indicators (WRKE1 to WRKE6) have loadings from 0.469 to 0.725. These values confirm that the constructs of this study are valid and reliable.

ii. Latent variable relationships

Table 2 presents the relationships between latent variables and their indicators. The loading for EMPE is notably high at 0.618, reflecting a strong internal consistency and positive correlation with other variables. WPDV and WRKE exhibit moderate relationships with other constructs, with loadings of 0.462 and 0.313, respectively. The interaction term WRKE×WPDV shows a relatively low loading of 0.031, suggesting a weaker association compared to other variables.

iii. Hypothesis testing and specific indirect effects

Table 3 outlines the specific indirect effects calculated in the model of this study. The indirect effect of workplace deviance on research quality through employee engagement is 0.286, indicating a substantial positive impact. This suggests that employee engagement significantly mediates the relationship between workplace deviance and research quality. The specific indirect effect for the path from work environment to research quality through employee engagement is 0.194, which is moderate, highlighting a positive yet less pronounced impact. In contrast, the combined effect of work environment and workplace deviance on research quality, as moderated by the interaction term WRKE × WPDV, shows a specific indirect effect of 0.019. This relatively small effect indicates that while work environment may influence the relationship between employee engagement and research quality, its moderating capability is limited in this context.

This implies that all constructs exhibit strong convergent validity, with high factor loadings for their indicators. Employee engagement demonstrates robust internal consistency and positive correlation with other variables, while workplace deviance and work environment show moderate relationships, and the interaction term reflects a weaker association. Employee engagement significantly mediates the relationship between workplace deviance and research quality, with a substantial indirect effect. However, the moderating impact of work environment on the connection between employee engagement and research quality is minimal. Overall, the findings highlight the pivotal role of employee engagement in mediating the effects of workplace deviance and work environment on research quality, offering valuable insights into the complex interplay of these factors within HEIs.

6. Discussion

The results from this study provide an understanding of the interplay between employee engagement, workplace deviance, work environment, and research quality in HEIs. The findings of this study validate the theoretical framework that posits employee engagement as a crucial mediator between workplace deviance and research quality. Convergent validity was robust for all constructs, as evidenced by high factor loadings for employee engagement (ranging from 0.730 to 0.740), research quality (0.576 to 0.803), workplace deviance (0.680 to 0.755), and work environment (0.469 to 0.725). These results meet the criteria outlined by Hair et al. (2010), confirming that the measurement instruments of this study are effective in capturing the intended constructs. The significant internal consistency of employee engagement, with a loading of 0.618, highlights its critical role in mediating the effects of workplace deviance on research quality. This finding reinforces the theoretical propositions by Schaufeli et al. (2002), who emphasized that high levels of engagement can buffer the negative impacts of deviant behaviors and enhance overall research outcomes. The results of this study suggest that fostering a high level of employee engagement is essential for mitigating the detrimental effects of workplace deviance, which is consistent with

previous research linking employee engagement with improved performance and reduced negative behaviors (Harter et al., 2002; Kahn, 1990).

In contrast, the moderating effect of work environment on the relationship between employee engagement and research quality was found to be minimal, with an interaction term loading of 0.031. This suggests that while a supportive work environment is beneficial, its role as a moderator in the specific context of HEIs is limited. This finding aligns with existing literature that suggests while working conditions are crucial for overall job satisfaction and performance, their moderating influence on engagement and research quality may not be as pronounced as expected (Bakker et al., 2003; Cummings & Worley, 2014). The implications for theory and practice are significant. For theory, these results underscore the importance of employee engagement as a key mechanism through which workplace deviance impacts research quality, adding empirical support to engagement theories that highlight its buffering effects. Practically, HEIs should prioritize initiatives that enhance employee engagement, as these efforts may be more effective in improving research quality than focusing solely on altering the work environment. However, the study is not without limitations. The cross-sectional design restricts causal inferences, and the sample size, although adequate, may not capture the full variability across different HEIs. Future research could address these limitations by using longitudinal studies to explore causal relationships and by including a larger, more diverse sample to enhance generalizability. Additionally, future studies could investigate other potential moderators or mediators, such as leadership styles or organizational culture, to provide a more comprehensive understanding of the factors influencing research quality in HEIs. This expanded approach could offer further insights into how various organizational and individual factors interact to shape research outcomes and contribute to the ongoing development of effective strategies for enhancing academic performance.

7. Conclusion

This study delves into the intricate relationships between the work environment, workplace deviance, employee engagement, and research quality. The findings reveal a complex interplay where employee engagement significantly mediates the effects of workplace deviance and work environment on research quality. Notably, workplace deviance exerts an indirect positive effect on research quality through enhanced employee engagement. This suggests that while deviant behaviors may directly harm research quality, higher levels of employee engagement can mitigate these negative impacts. Thus, fostering robust employee engagement is crucial in buffering against the adverse effects of workplace deviance, underscoring its pivotal role in maintaining research quality.

Furthermore, the work environment's role in this dynamic is also significant, though its moderating effect is less pronounced than anticipated. The work environment shows a slight positive indirect effect on research quality through employee engagement, aligning with the view that supportive work environments can enhance employee motivation and engagement, thereby positively impacting research outcomes. Importantly, the interaction between work environment and workplace deviance reveals that a supportive environment can amplify the beneficial effects of employee engagement on research quality. This underscores the importance of creating a supportive workplace culture that not only addresses deviant behaviors but also actively fosters employee engagement. By strategically managing workplace deviance and cultivating a supportive work environment, HEIs can significantly enhance research quality. Future research should further investigate these mechanisms and explore additional factors that might influence this complex interplay, providing deeper insights into how HEIs can effectively foster a culture of research excellence.

8. Recommendations

i. Mitigation of workplace deviance

To effectively mitigate workplace deviance, it is essential to establish and enforce a comprehensive code of conduct. This code should clearly define acceptable and unacceptable behaviors, offering detailed guidelines on what constitutes proper conduct in the workplace. It must be easily accessible to all employees and include explicit procedures for reporting any violations. Ensuring that ethical behavior is a priority at all organizational levels is crucial, not just a formal expectation. The code should also highlight the severe consequences of deviating from established norms and provide guidance on identifying and addressing such breaches. Training programs, including interactive workshops, role-playing exercises, and context-specific case studies, should be implemented to educate employees about the importance of adhering to the code. Additionally, it is vital to establish a confidential reporting system where employees can raise concerns without fear of retaliation. Promoting open communication and ensuring that all reported issues are resolved promptly and fairly will further support a culture of integrity and accountability.

ii. Creation of a positive work atmosphere

To cultivate a positive work atmosphere, it is essential to implement regular employee satisfaction surveys and

act upon the feedback received. These surveys serve as a valuable tool for identifying areas that require improvement and guiding strategic investments in workplace enhancements. By addressing the concerns and suggestions of employees, organizations can foster a more responsive and adaptive work environment. Additionally, facilitating connections between senior and junior staff members encourages the sharing of knowledge and mentorship, contributing to personal and professional growth. Public recognition and rewards for achievements, such as during annual staff events or through promotions, also play a crucial role. Acknowledging and celebrating the contributions of employees not only promotes positive behavior but also motivates and inspires a culture of excellence. Creating an environment where staff feel valued and appreciated helps in building a community of engaged and dedicated individuals, ultimately leading to a more vibrant and supportive institution.

iii. Promotion of staff participation

To enhance staff engagement and commitment, it is crucial to create opportunities for active participation in organizational processes. Allowing staff to take on challenging tasks and make decisions independently fosters a sense of ownership and alignment with the organization's goals. Offering professional development opportunities, such as relevant courses, workshops, and conferences, supports their career aspirations and skill enhancement. Encouraging lecturers to pursue professional certifications and participate in knowledge-building activities further contributes to their growth and job satisfaction. Additionally, organizing team-building activities and social events, ranging from informal staff lunches and game nights to collaborative volunteering projects and work-related contests, strengthens interpersonal relationships, builds trust, and cultivates a sense of belonging within the institution. These initiatives not only boost morale but also promote a collaborative and cohesive work environment where staff feel valued and engaged.

Future research could delve deeper into the relationship between employee engagement and workplace deviance by investigating how different dimensions of employee engagement, such as job satisfaction and organizational commitment, interact with workplace deviance. Understanding these connections could reveal additional mediating factors and provide a more comprehensive view of how engagement influences and mitigates deviant behaviors. Moreover, conducting comparative studies across various industries and organizational contexts could enhance the generalizability of the findings. By examining diverse settings, researchers could uncover how contextual variables influence the interplay between employee engagement and workplace deviance, offering richer insights into the broader implications for research quality and organizational effectiveness. These explorations could help refine strategies to improve workplace environments and boost overall research productivity.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflict of interest. No funders were involved in the design of the study, the collection, analysis, or interpretation of data, the writing of the manuscript, or the decision to publish the results. All authors have disclosed that there are no personal circumstances or financial interests that could be perceived as influencing the representation or interpretation of the research findings.

References

- Akgunduz, Y., Bardakoglu, O., & Kizilcalioglu, G. (2023). Happiness, job stress, job dedication and perceived organizational support: A mediating model. *J. Hospitality Tourism Insights*, 6(2), 654-673. <https://doi.org/10.1108/JHTI-07-2021-0189>.
- Aleksić, A., Braje, I. N., & Jelavić, S. R. (2019). Creating sustainable work environments by developing cultures that diminish deviance. *Sustainability*, 11(24), 7031. <https://doi.org/10.3390/su11247031>.
- Almohri, S. M. (2018). *A "practice-based" theory of the firm: A practice theory perspective to organizational strategy development and knowledge management*. [Doctoral Dissertation. Georgia State University]. U.S.
- Appelbaum, S. H., Iaconi, G. D., & Matousek, A. (2007). Positive and negative deviant workplace behaviors: Causes, impacts, and solutions. *Corporate Governance Int. J. Bus. Soc.*, 7(5), 586-598. <https://doi.org/10.1108/14720700710827176>.
- Arshad, M. (2023). When abusive supervision increases workplace deviance: The moderating role of psychological safety and organizational identification. *Lahore J. Bus.*, 11(1), 1-26. <https://doi.org/10.35536/ljb.2023.v11.i1.a1>.
- Babatope, B. A. (2010). Problems of facilities in South-West Nigerian universities and the way forward. *Int. J. Educational Administration Policy Stud.*, 2(3), 39-43.

- Bakker, A. B., Demerouti, E., de Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *J. Vocational Behav.*, 62(2), 341-356. [https://doi.org/10.1016/S0001-8791\(02\)00030-1](https://doi.org/10.1016/S0001-8791(02)00030-1).
- Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-based theory and the value creation framework. *J. Manage.*, 47(7), 1936-1955. <https://doi.org/10.1177/01492063211021655>.
- Bhatnagar, J. (2007). Talent management strategy of employee engagement in Indian ITES employees: Key to retention. *Employee Relat.*, 29(6), 640-663. <https://doi.org/10.1108/01425450710826122>.
- Brockhoff, K. K. & Rao, V. R. (1993). Toward a demand forecasting model for preannounced new technological products. *J. Eng. Technol. Manage.*, 10(3), 211-228. [https://doi.org/10.1016/0923-4748\(93\)90069-U](https://doi.org/10.1016/0923-4748(93)90069-U).
- Cummings, T.G. & Worley, C.G. (2014). *Organization development and change*. In *Dynamics of Organizational Change and Learning*. Boston: Cengage Learning.
- Davies, D., Taylor, R., & Savery, L. (2001). The role of appraisal, remuneration and training in improving staff relations in the Western Australian accommodation industry: A comparative study. *J. Eur. Ind. Training*, 25(7), 366-373. <https://doi.org/10.1108/EUM0000000005837>.
- Gerhart, B. & Feng, J. (2021). The resource-based view of the firm, human resources, and human capital: Progress and prospects. *J. Manage.*, 47(7), 1796-1819. <https://doi.org/10.1177/0149206320978799>.
- Golparvar, M. (2015). Unconventional functions of deviant behaviors in the relationship between job stress and emotional exhaustion: Three study findings. *Curr. Psychology*, 35(3), 269-284. <https://doi.org/10.1007/s12144-014-9292-8>.
- Guerrero-Alba, F., Martín-Alcázar, F., & Sánchez-Gardey, G. (2022). Exploratory analysis of the perception of academic researchers about incentives: Evidence from a Spanish Public University. *J. Higher Educ. Policy Manage.*, 44(6), 613-629. <https://doi.org/10.1080/1360080X.2022.2136380>.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate Data Analysis* (Seventh Edition). Prentice-Hall, U.S., Englewood Cliffs.
- Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The job demands-resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work Stress*, 22(3), 224-241. <https://doi.org/10.1080/02678370802379432>.
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *J. Appl. Psychology*, 87(2), 268-279. <https://doi.org/10.1037/0021-9010.87.2.268>.
- Ilmudeen, A. (2022). Leveraging IT-enabled dynamic capabilities to shape business process agility and firm innovative capability: Moderating role of turbulent environment. *Rev. Managerial Sci.*, 16, 2341-2379. <http://doi.org/10.1007/s11846-021-00501-9>.
- Jnaneswar, K. & Ranjit, G. (2023). Unravelling the role of organizational commitment and work engagement in the relationship between self-leadership and employee creativity. *Evidence-based HRM*, 11(2), 158-176. <https://doi.org/10.1108/EBHRM-08-2021-0164>.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Acad. Manage. J.*, 33(4), 692-724.
- Karatepe, O. M. (2014). Hope, work engagement, and organizationally valued performance outcomes: An empirical study in the hotel industry. *J. Hospitality Marketing Manage.*, 23(6), 678-698. <https://doi.org/10.1080/19368623.2014.855994>.
- Kareem, M. A. & Alameer, A. A. (2019). The impact of dynamic capabilities on organizational effectiveness. *Manage. Marketing*, 14(4), 402-418. <https://doi.org/10.2478/mmcks-2019-0028>.
- Kibirango, M. M., Munene, J. C., Balunywa, W. J., & Obbo, J. K. (2017). Mediation effect of novelty ecosystems on intrapreneurial behaviour process within an organisational dynamic environment among Kenyan universities: A complexity approach. *J. Organizational Change Manage.*, 30(6), 957-977. <https://doi.org/10.1108/JOCM-08-2016-0157>.
- Kim, C., Galliers, R. D., Shin, N., Ryoo, J. H., & Kim, J. (2012). Factors influencing Internet shopping value and customer repurchase intention. *Electron. Commerce Res. Appl.*, 11(4), 374-387. <https://doi.org/10.1016/j.elerap.2012.04.002>.
- Kim, S. J. & Choi, S. O. (2018). The effects of job mismatch on pay, job satisfaction, and performance. *J. Open Innov. Technol. Market Complexity*, 4(4), 49. <https://doi.org/10.3390/joitmc4040049>.
- Kumarasamy, M. A. P. M., Pangil, F., & Isa, M. F. M. (2015). Individual, organizational and environmental factors affecting work-life balance. *Asian Social Sci.*, 11(25), 111-125. <https://doi.org/10.5539/ass.v11n25p111>.
- Kura, K. M., Shamsudin, F. M., & Chauhan, A. (2016). Organisational trust as a mediator between perceived organisational support and constructive deviance. *Int. J. Bus. Soc.*, 17(1), 1-18. <https://doi.org/10.33736/ijbs.506.2016>.
- Malik, P. & Lenka, U. (2019). Identifying HRM practices for disabling destructive deviance among public sector employees using content analysis. *Int. J. Organizational Anal.*, 28(3), 719-744. <https://doi.org/10.1108/IJOA-02-2019-1658>.

- Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. (2020). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. *Info. Manage.*, 57(2), 103169. <https://doi.org/10.1016/j.im.2019.05.004>.
- Musa, M. F. B. & Ahmad a Baharum, Z. (2012). Corporate Real Estate (CRE): Public institution of higher learning in Malaysia. *Procedia Social Behav. Sci.*, 36, 273-279. <https://doi.org/10.1016/j.sbspro.2012.03.030>.
- Muzee, H., Kizza, J., & Mugabe, G. M. (2021). Organisational compassion and employee engagement in virtual work environments during Covid-19 lockdown in Uganda and Rwanda. *Int. J. Manage. Knowl. Learn.*, 9(2), 123-145.
- Ndirangu, M. & Udoto, M. O. (2011). Quality of learning facilities and learning environment: Challenges for teaching and learning in Kenya's public universities. *Qual. Assur. Educ.*, 19(3), 208-223. <https://doi.org/10.1108/09684881111158036>.
- Pattnaik, L., & Jena, L. K. (2021). Mindfulness, remote engagement and employee morale: Conceptual analysis to address the "new normal". *Int. J. Organizational Anal.*, 29(4), 873-890. <https://doi.org/10.1108/IJOA-06-2020-2267>.
- Raziq, A. & Maulabakhsh, R. (2015). Impact of working environment on job satisfaction. *Procedia Econ. Finance*, 23, 717-725. [https://doi.org/10.1016/S2212-5671\(15\)00524-9](https://doi.org/10.1016/S2212-5671(15)00524-9).
- Robinson, S. L. & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Acad. Manage. J.*, 38(2), 555-572.
- Román-González, M., Pérez-González, J. C., & Jiménez-Fernández, C. (2017). Which cognitive abilities underlie computational thinking? Criterion validity of the computational thinking test. *Comput. Hum. Behav.*, 72, 678-691. <https://doi.org/10.1016/j.chb.2016.08.047>.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *J. Happiness Stud.*, 3(1), 71-92. <https://doi.org/10.1023/A:1015630930326>.
- Sharma, N. & Singh, V. K. (2018). Psychological empowerment and employee engagement: Testing the mediating effects of constructive deviance in Indian IT sector. *Int. J. Hum. Capital Inf. Technol. Professionals*, 9(4), 44-55. <https://doi.org/10.4018/IJHCITP.2018100103>.
- Sharma, P. K. & Kumra, R. (2020). Relationship between workplace spirituality, organizational justice and mental health: Mediation role of employee engagement. *J. Adv. Manage. Res.*, 17(5), 627-650. <https://doi.org/10.1108/JAMR-01-2020-0007>.
- Shuck, B., Kim, W., & Chai, D. S. (2021). The chicken and egg conundrum: Job satisfaction or employee engagement and implications for human resources. *New Horiz. Adult Educ. Hum. Resour. Dev.*, 33(1), 4-24. <https://doi.org/10.1002/nha3.20302>.
- Srivastava, S., Madan, P., & Pandey, D. N. (2023). Does remaining silent help in coping with workplace incivility among hotel employees? Role of personality. *J. Hospitality Tourism Manage.*, 54, 361-372. <https://doi.org/10.1016/j.jhtm.2023.01.007>.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Manage. J.*, 18(7), 509-533. [http://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z](http://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z).
- Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *J. Bus. Res.*, 70, 356-365. <http://doi.org/10.1016/j.jbusres.2016.08.009>.
- Welch, M. (2011). The evolution of the employee engagement concept: Communication implications. *Corporate Commun. Int. J.*, 16(4), 328-346. <https://doi.org/10.1108/13563281111186968>.