

MEDIATION ROLE OF MANAGERIAL SUPPORT ON THE EFFECT OF WORK ENGAGEMENT, WORK ENVIRONMENT, LOYALTY AND WORKLOAD ON EMPLOYEE PERFORMANCE, IN TERTIARY INSTITUTIONS'

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Abstract

This study examined the mediating role of managerial support on the effect of work engagement, work environment, workload, loyalty, and employee performance among academic staff of three universities in Bauchi State, Nigeria. A cross-sectional survey research design was adopted, and a stratified random sampling strategy was employed to ensure fair representation across the institutions. The population of this study comprises (2,040) two thousand and forty academic staffs of three (3) Universities in Bauchi State, using Taro Yamane formulae. Based on the formulae, three hundred and thirty-four (334) samples are the corresponding size for the total population drawn from the three selected university in Bauchi state. A total of 401 questionnaires were distributed and analyzed. The study employed inferential statistical analysis using the Statistical Package for the Social Sciences (SPSS). Specifically, the researcher used Multiple Regression Analysis to examine the influence of the independent variables on the dependent variable.

Keywords: Managerial support, Work engagement, Work environment, Workload, Employee loyalty and Employee performance.

Introduction

Employee performance is central to organizational success, as it reflects the quality and quantity of work delivered in line with assigned responsibilities. Beyond physical resources, effective organizational growth depends on strengthening human resources and ensuring that employees find meaning in their work and workplace (Pramono & Prahawan, 2022; Pelealu, 2022). Previous studies indicate that employee performance is shaped by multiple factors, including work engagement, work environment, workload, and loyalty, with managerial support playing a crucial role in strengthening these relationships (Mangkunegara, 2013; Hajiali et al., 2022).

Work engagement reflects the energy, enthusiasm, and commitment employees bring to their tasks. Engaged employees tend to perform better and contribute

positively to organizational outcomes (Afdaliza, 2015). While several studies confirm a strong positive link between engagement and performance (Cahyandani, 2021; Bedagama & Tjahjaningsih, 2021), others report mixed or context-specific results (Putra et al., 2021; Wijaya, 2020).

The work environment, encompassing physical, social, and psychological conditions, also shapes job satisfaction and productivity (Jain & Kaur, 2014; Rietze & Zacher, 2022). Elements such as workplace safety, availability of resources, supervisor support, and conducive facilities create conditions that reduce stress and improve employee output.

Employee loyalty is another determinant of performance. Loyal staff are less likely to leave, are more dedicated to their organizations, and willingly align with organizational goals (Naufalia et al., 2022). Conversely, weak loyalty contributes to

absenteeism, turnover, and reduced organizational commitment, which negatively affect performance (Sudiantini & Saputra, 2022).

Workload influences performance in both positive and negative ways. A well-balanced workload enhances productivity and efficiency, but excessive or poorly distributed workload often leads to fatigue, dissatisfaction, stress, and declining performance (Fransiska & Tupti, 2020; Lukito & Alriani, 2019).

Amid these dynamics, managerial support expressed through leadership guidance, mentorship, recognition, and provision of resources emerges as a critical mediating factor. Supportive management not only strengthens engagement, loyalty, and resilience in the face of workload challenges but also helps create a positive work environment, ultimately improving employee performance.

Problem Statement

Academic staff in Nigeria faces rising demands for higher performance driven by global university ranking pressures, increased administrative and academic responsibilities, and disruptions such as the COVID-19 pandemic. These challenges negatively affect staff well-being, reduce work life balance, and contribute to stress, burnout, absenteeism and turnover, ultimately lowering productivity (Kinman & Wray, 2013; Jones et al., 2013). This situation is also evident in tertiary institutions across Bauchi State, where academic staff often operates with limited resources, large student enrolment, inadequate facilities, and high workload expectations compared to their available support systems. In these institutions, insufficient managerial support, unclear role expectations, and limited staff development opportunities further weaken engagement, reduce loyalty, and create unfavorable work environments that hinder optimal performance. If this phenomenon is not addressed, tertiary institutions in Bauchi State risk experiencing declining academic

quality, reduced research output, poor student satisfaction, and an inability to attract and retain qualified academic personnel. Over time, this could weaken institutional competitiveness, compromise accreditation standards, and limit the overall contribution of these institutions to the socioeconomic development of Bauchi State. Yet, while factors such as work engagement, work environment, loyalty, and workload are known to influence employee performance, limited empirical evidence has examined how managerial support may serve as a mediating mechanism that can strengthen these relationships and improve performance within tertiary institutions in Bauchi State.

Although numerous theories such as the Job Demands-Resources (JD-R) model and Social Exchange Theory suggest that managerial support should moderate or mediate the effects of engagement, environment, loyalty, and workload on performance, empirical studies show inconsistent results. Some report strong mediation, while others find weak or non-significant effects. This inconsistency signals a theoretical gap in clarifying the exact role of managerial support across diverse contexts, especially in developing economies.

Most prior studies have been conducted in developed countries or private sector organizations, with limited focus on African public universities. Nigerian universities, particularly in Bauchi State, face unique challenges such as under-funding, infrastructural deficits, high student staff ratios, and policy instability. These contextual realities may alter how engagement, environment, workload, and loyalty affect performance, and whether managerial support can effectively mediate these relationships.

Many existing studies have relied on cross-sectional designs, single-variable focus, or traditional regression techniques that may not adequately capture complex mediation effects. Few have applied advanced

techniques such as Partial Least Squares Structural Equation Modeling (PLS-SEM) to simultaneously test measurement and structural models, which allow for a more robust analysis of mediation pathways. This methodological gap limits the generalizability and explanatory power of earlier findings.

Despite extensive studies on work engagement, work environment, loyalty, and workload, few have examined the mediating role of managerial support in linking these factors to employee performance, particularly in Nigerian universities. This study addresses the theoretical, contextual, and methodological gaps by investigating academic staff in Bauchi State universities using PLS-SEM.

- i. Does managerial support mediate the relationship between work engagement and employee performance?
- ii. Does managerial support mediate the relationship between the work environment and employee performance?
- iii. Does managerial support mediate the relationship between employee loyalty and employee performance?
- iv. Does managerial support mediate the relationship between workload and employee performance?
- v. To examine how managerial support mediates the influence of work engagement on employee performance.
- vi. To assess the mediating role of managerial support in the relationship between the work environment and employee performance.
- vii. To determine how managerial support mediates the influence of employee loyalty on employee performance.
- viii. To analyze the mediating role of managerial support in the relationship between workload and employee performance.

The findings will benefit university management by highlighting how managerial support can improve staff performance guide lecturers in

understanding factors affecting their productivity, and inform policy makers on improving working conditions in higher institutions of learning. Supervisors can use the insights to strengthen support systems, while future researchers will find this study a valuable reference. Ultimately, the study benefits the general public, as improving academic staff performance contributes to better education and societal development.

Literature Review

Conceptual Review

Employee Performance

Employee performance, according to (Widyawati, 2021) is the contribution of employees for the achievement of organizational objective. Employees are expected to perform acceptable level of the standard and managers follow up, and evaluate the performance of employees to attain the stated objective of an organization (Michael, 2020). Sinha (2021). stated that employees' performance is depending on the willingness and also the openness of the employees itself on doing their job. Sinha (2021). also stated that by having this willingness and openness of the employees in doing their job, it could increase the employees' productivity which also leads to the performance. Franco et al (2002) defined performance that relies on internal motivation but presence of internal factors such as necessary skills, intellectual capacity and resources to do the job clearly have an impact. As a consequence, employers are supposed to provide appropriate working conditions in order to make sure the performance of employees meet the required standards. Therefore, employee performance should be understood as a multi-dimensional construct shaped by both individual characteristics and organizational conditions. In the context of tertiary institutions, especially in Bauchi State, performance reflects employees' ability to deliver quality teaching, research, and administrative duties. This underscores the need for universities to provide adequate managerial support, conducive work

environments, and balanced workloads to facilitate optimal performance. Thus, purely defining employee performance through various authors is insufficient; a comprehensive understanding requires recognizing how these conceptual elements interact within actual organizational settings particularly the educational context of this study.

Managerial Support

Managerial support refers to the active commitment, advocacy, and provision of resources (financial, human, informational) by senior leaders to endorse, direct, and sustain organizational initiatives. It also involves communicating a vision, aligning strategy, removing obstacles, and signaling that a project or change is a priority. Management support Though many variables may affect the success of an organization, many researchers agree anecdotally that commitment by top management is vital (Ahmad, S, et.al. 2024; Antony, D. A. et.al, 2024; Boyer and Sovilla, 2003; Parks, 2002). Management that fails to embrace the implementation may intentionally or unintentionally sabotage the effort (Boyer and Sovilla, 2003; Stamm, 2004). Top management should not only demonstrate commitment and leadership, it must also work to create interest in the implementation and communicate the change to everyone within the organization (Boyer and Sovilla, 2003). While the arguments from Boyer & Sovilla, Parks, Stamm, etc., remain valid, relying only on them could be limiting for a few reasons:

Context change: Organizational environments have evolved significantly since early 2000s. Digital transformation, remote work, flatter hierarchies, and agile practices mean that the nature of “management support” is more dynamic than before.

Empirical evolution: There is a growing body of more recent empirical research that nuances and refines our understanding of how management support works, for whom,

under what conditions, and what its effects are.

Theoretical development: New theories (e.g., trust in leadership, psychological safety, organizational readiness) offer more mechanisms to explain *how* managerial support influences employee performance today.

Work Environment

One of the things that can affect employee performance is the physical work environment. Sarwoto (2017) states that the work environment is a place where an employee works including physical and non-physical environments that can affect morale in carrying out work. The work environment is one of the things closest to a person in carrying out his job. The work environment around employees needs to be considered in order to have a good impact on one's performance (James 2015). A sense of comfort and safety will be created because of an adequate work environment.

Work Engagement

The term work engagement was first conceptualized by William Khan (1990) and defined as the harnessing of employees' selves to their work roles by which they employ and express themselves physically, cognitively and emotionally during role performances (Cahyandani, 2021). After Kahn, different approaches to work engagement were proposed that each emphasizes a distinct aspect of work engagement (Alam et al., 2022).

Employee Loyalty

Today it can be safely said that employee is the most important asset of an organization. The performance in terms of success or failure of the organization can be linked to the performance of the employee. This performance is stemmed from the fact that employee is loyal to the organization not necessary because of her reward system but because of the commitment of that employee to the cause of the organization (Sudiantini&Saputra, 2022).

Workload

Workloads are tasks assigned by employees to be carried out at a certain time by using the skills and potential of the workforce which can be further divided into 2 (two) categories of quantitative workloads and quality workloads. The workload can be further divided into workloads because the work is quantitatively overloaded, i.e. the large number of jobs that must be completed with a shorter time to complete. As for the workload due to quality overload, that is, individuals who feel unable to do or complete "a task" because their work requires higher abilities (Rizky&Afrianty, 2018).

Theoretical framework

The dependent variable which is performance followed by four other independent variable, work environment, work, engagement, loyalty and workload will be supported by Victor Vroom. Expectancy theory (1964) while the fifth variable which is managerial support, will be supported by the goal-setting theory proposed by Edwin Locke in the year 1968.

Expectancy Theory

The most widely accepted explanations of motivation have been propounded by Victor Vroom. His theory is commonly known as expectancy theory. The theory argues that the strength of a tendency to act in a specific way depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual to make this simple. The theory focuses on three things efforts and performance relationship, performance and reward relationship, rewards and personal goal relationship (Salaman et al, 2005).

Goal-setting Theory

The goal-setting theory had been proposed by Edwin Locke in the year 1968. This theory suggests that the individual goals established by an employee play an important role in motivating him for superior performance. Skills required include the ability to engage employees in mutual goal setting clarify role expectations

and provide regular performance feedback. Principle here is the human-to-human interaction through providing individualized support and encouragement to each and every employee (Salaman et al, 2005).

Empirical Review

(Utami, et.al. 2020) conducted research to find out whether workload affects employee performance through job stress. The results showed that job stress as intervening has an effect on the relationship of variable workload to employee performance.

On the contrary Ni, et al., (2023) studied the relationship between work practice environment and work engagement among nurses: The multiple mediation of basic psychological needs and organizational commitment a cross-sectional survey. A cross-sectional survey was conducted with a sample of 893 nurses from 14 cities in Sichuan Province of China between November 2021 and December 2021. Data were collected online using the Chinese version of the Practice Environment Scale of the Nursing Work Index, Basic Needs Satisfaction in General Scale, Organizational Commitment Scale, and Utrecht Work Engagement Scale. The Pearson correlation analysis and multiple mediation model were used to analyze the data. The Pearson correlation analysis showed that work practice environment, basic psychological needs, and organizational commitment were positively associated with work engagement. The positive relationship between work practice environment and work engagement was mediated by basic psychological needs and organizational commitment.

Methodology

The study adopted a quantitative survey design with a deductive approach to examine causal relationships among the variables, consistent with previous studies on employee performance (Abramov, Teixeira, & Cezarino, 2019; Bedagama & Tjahjaningsih, 2021). The population comprised 2,040 academic staff from three universities in Bauchi State: ATBU (1,428),

BASUG (423), and FUHSA (189). Using Taro–Yamane’s formula (1967) at a 5% margin of error, the minimum required sample size was calculated as 334 respondents, in line with recommendations for survey research requiring adequate statistical power (Krejcie & Morgan, 1970). To enhance representativeness and account for potential non-response, 434 questionnaires were distributed, and 401 valid responses were analyzed, yielding an effective response rate of 92.4%, which exceeds the 60% benchmark for quantitative research (Babbie, 2010; Fincham, 2008).

A combination of stratified and simple random sampling was employed. Stratified sampling ensured proportional representation across the three universities, while simple random sampling provided each academic staff member with an equal chance of selection. Questionnaires were distributed as follows: ATBU (234), BASUG (70), and FUHSA (30). Data were collected using a structured, closed-ended questionnaire designed in English, adapted from validated scales in previous studies to measure work engagement, work environment, workload, loyalty, managerial support, and employee performance.

A pilot study involving 40 questionnaires (31 valid responses) was conducted to test the instrument’s reliability and validity. Reliability was assessed using Cronbach’s alpha and composite reliability, both exceeding the recommended threshold of 0.70. Convergent validity was established through factor loadings, average variance

extracted ($AVE > 0.50$), and composite reliability (>0.70), while discriminant validity was verified using the Fornell–Larcker criterion and Heterotrait-Monotrait (HTMT) ratios. Detailed reliability and validity results.

For inferential analysis, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed using SmartPLS 4. This method was chosen because it is well-suited for examining complex relationships, including mediating effects, and allows for robust estimation with smaller samples (Hair et al., 2022). The model specification included four independent variables (work engagement, work environment, loyalty, workload), one mediating variable (managerial support), and one dependent variable (employee performance), consistent with the conceptual framework of the study. The structural model assessment, including path coefficients, R^2 , and mediation effects.

Result and Discussion

Out of 434 questionnaires distributed, 425 were retrieved, and 401 were valid for analysis, representing a high response rate of 92.4%, which exceeds the 60% benchmark for quantitative research.

Demographic analysis revealed that respondents were predominantly male (73.5%) and mostly within the age groups of 25–40 years (68.6%). In terms of education, the majority held postgraduate qualifications (67.6% with MSc/MBA), followed by bachelor’s degree holders (23.7%).

Table 1: Descriptive Statistics of Respondents

This section focuses on the Gender, Age and Educational Qualification.

Variables	Category	Frequency	Percentage %
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Gender	Male	295	73.5
	Female	106	26.4
	Total	401	100%
Age	25 - 30 years	134	33.4
	31 - 40 years	141	35.2
	41 - 50 years	101	25.2
	51 years & above	25	6.2
	Total	401	100%
Educational Qualification	ND/NCE	0	0.00
	B.Sc/HND	95	23.7
	M.Sc/MBA	271	67.6
	Ph.D.	35	8.7
	Total	401	100%

Source: Field Survey, 2024.

Presentation of Topical Data

Beyond demographic characteristics, the study collected topical data on the main research variables: loyalty, work engagement, work environment, workload, managerial support, and employee performance. Descriptive statistics and measurement indicators for these constructs are summarized in the Measurement Model section below, while comprehensive item-level descriptive tables are provided in Appendix A for reference. These include the mean responses, standard deviations, factor

loadings, and reliability results for all observed items used in the analysis.

Measurement model

Measurement model assessment confirmed reliability and validity after deleting items with low factor loadings (<0.50). Cronbach's Alpha values (0.725–0.915), composite reliability (0.802–0.936), and AVE (0.523–0.745) all met recommended thresholds, ensuring strong internal consistency, convergent validity, and discriminant validity.

Figure 1: Measurement Model: Showing the relationship between independent variables with dependent variable through mediating variable.

Workload	0.082	Small Effect
Loyalty	0.026	Small Effect

Source: Extracted from SmartPLS4 output, 2024.

Predictive Relevance (Q^2 values: 0.362 for EP and 0.355 for MS) further confirmed that the model has good predictive power.

Table 3: Predictive Relevance (Q^2)

Endogenous Constructs	Q^2 predict			Predictive Relevance
		RMSE	MAE	
Employee Performance	0.362	0.808	0.583	Yes
Managerial Support	0.355	0.813	0.580	Yes

Source: Extracted from SmartPLS4 output, 2024.

Significance Effect of Direct Path Coefficients

The structural model was assessed using the bootstrapping technique to run the multiple analysis for four hundred and one valid samples used in this study. Five thousand (5000) subsamples were used to run the bootstrapping procedure as widely suggested in the literature (Hair et al., 2017; Wong, 2013).

Table 4: Significance Effects of Direct (Path Coefficient)

Hypothesis	Relationships	Original Sample(O)	Standard Beta	t-statistics	p-Value	Decision
H ₁	LYT-> EP	0.062	0.028	2.184	0.029	Significant
H ₂	WEG ->EP	0.137	0.035	3.914	0.000	Significant
H ₃	WEN -> EP	0.146	0.033	4.352	0.000	Significant
H ₄	WKL -> EP	0.120	0.026	4.634	0.000	Significant

Source: Extracted from SmartPLS4 output, 2024.

The path coefficient results in Table 4 demonstrate that all four hypothesized relationships (H1–H4) are statistically significant in explaining employee performance among academic staff. H1 (Loyalty → Employee Performance): The path coefficient is 0.062 with a t-value of 2.184 and a p-value of 0.029, indicating a positive and significant effect. Although the effect size is relatively small, the result suggests that employee loyalty enhances performance, implying that committed and dedicated employees contribute positively to institutional goals.

H2 (Work Engagement → Employee Performance): With a coefficient of 0.137, t-value of 3.914, and $p < 0.001$, work engagement shows a stronger and highly significant positive influence on performance. This confirms that engaged

staff who are energized, dedicated, and absorbed in their work perform better and sustain higher productivity.

H3 (Work Environment → Employee Performance): The coefficient of 0.146 with a t-value of 4.352 and $p < 0.001$ represents the largest positive effect among the predictors. This implies that a supportive, safe, and resourceful work environment plays a crucial role in driving academic staff performance.

H4 (Workload → Employee Performance): The coefficient of 0.120 with a t-value of 4.634 and $p < 0.001$ also reveals a positive and significant impact. This means that when workloads are balanced and managed effectively, they can enhance employee efficiency and output, though excessive workload may reverse this trend.

Assessing the Mediating Effect

Table 5: Mediating Effect Test Results

Hypothesis	Relationships	Original Sample(O)	Standard Beta	t-statistics	p-Value	Decision
H4	MS x WEG -> EP	0.137	0.035	3.914	0.000	Significant
H5	MS x WEN -> EP	0.146	0.033	4.352	0.000	Significant
H6	MS x WKL-> EP	0.120	0.026	4.634	0.000	Significant
H7	MS x LYT-> EP	0.062	0.028	2.184	0.029	Significant

Source: Extracted from SmartPLS4 output, 2024.

The results in Table 5 reveal that managerial support significantly mediates the relationships between work engagement, work environment, workload, loyalty, and employee performance among academic staff.

H4 (Managerial Support \times Work Engagement \rightarrow Employee Performance): The path coefficient is 0.137, with a t-value of 3.914 and $p < 0.001$, indicating that managerial support significantly strengthens the positive effect of work engagement on employee performance. This suggests that engaged employees perform even better when managers provide encouragement, resources, and constructive feedback.

H5 (Managerial Support \times Work Environment \rightarrow Employee Performance): With a coefficient of 0.146, t-value of 4.352, and $p < 0.001$, this is the strongest mediation effect among the variables. It shows that a conducive work environment enhances employee performance more effectively when managerial support is present — for example, through fair policies, conflict resolution, and resource allocation.

H6 (Managerial Support \times Workload \rightarrow Employee Performance): The coefficient of 0.120 with a t-value of 4.634 and $p < 0.001$ indicates a significant mediating role. This implies that even when workloads are high, employees can still perform optimally if managers provide guidance, distribute tasks fairly, and offer time management support.

H7 (Managerial Support \times Loyalty \rightarrow Employee Performance): The coefficient of 0.062, t-value of 2.184, and $p = 0.029$ suggests a positive but relatively smaller mediation effect. This means that loyal

employees' contributions to performance are amplified when they receive continuous managerial encouragement and recognition.

Research Hypotheses

i. **H1:** Managerial support mediates the influence of work engagement on employee performance.

ii. **H2:** Managerial support mediates the relationship between the work environment and employee performance.

iii. **H3:** Managerial support mediates the influence of employee loyalty on employee performance.

iv. **H4:** Managerial support mediates the relationship between workload and employee performance.

Discussion of Findings

The results of this study confirm that all four independent variables loyalty, work engagement, work environment, and workload have significant and positive direct effects on employee performance among academic staff of ATBU, BASUG, and FUSHA. Loyalty was shown to enhance staff willingness to align with institutional goals, consistent with the findings of Naufalia et al. (2022), who reported that loyal employees display stronger commitment and reduced turnover, thereby improving performance. Work engagement significantly improved commitment and productivity, corroborating the work of Cahyandani (2021) and Bedagama and Tjahjaningsih (2021), who observed that engaged employees demonstrate higher motivation and superior outcomes. Similarly, the work environment was found to significantly influence performance, supporting the arguments of Jain and Kaur

(2014) and Rietze and Zacher (2022), who emphasized the role of safe, supportive, and resourceful workplaces in enhancing staff efficiency. Workload, when well-managed, also had a positive effect, aligning with Rizky and Afrianty (2018), who showed that balanced workloads can boost productivity, though excessive workloads diminish outcomes (Lukito & Alriani, 2019).

Beyond the direct effects, the study highlights the crucial role of managerial support as a mediator. Managerial support significantly strengthened the relationships between all four predictors and employee performance. The strongest mediating effect was observed for the work environment, suggesting that supportive leadership helps translate favorable workplace conditions into higher performance. This is consistent with Boyer and Sovilla (2003), who argued that managerial involvement enhances the effectiveness of organizational systems, and with Yao et al. (2022), who found that managerial support fosters satisfaction and performance in academic institutions. Managerial support also amplified the positive influence of work engagement and workload, confirming findings by Alavi (2003) and Ni et al. (2023) that supervisory encouragement and resource allocation enable staff to cope better with demands and achieve optimal outcomes. While the mediating effect on loyalty was weaker compared to the other variables, it was still statistically significant, suggesting that recognition, mentorship, and open communication from managers (Sudiantini & Saputra, 2022) enhance the contributions of loyal staff to organizational goals.

Socio-Economic Implications

1. **Enhanced productivity contributes to national education quality.** Improved employee performance among academic staff implies higher teaching effectiveness, better research outcomes, and enhanced service delivery, all of which contribute to human capital development in Bauchi State and Nigeria at large.

2. **Reduced turnover lowers recruitment costs and stabilizes the academic workforce.**

Loyalty and engagement reduce staff attrition, helping universities avoid financial losses associated with frequent recruitment and training.

3. **Improved work environments support economic competitiveness.**

Universities with supportive work environments attract better academic talent, which in turn strengthens regional development through innovation, consultancy, and community engagement.

4. **Balanced workload reduces burnout and health costs.**

Proper workload management can lead to reduced sick leave, better well-being, and overall lower institutional health-related expenditures.

Theoretical Implications

1. **Extension of Social Exchange Theory (SET).**

The findings show that managerial support strengthens the positive outcomes of loyalty, engagement, and work environment. This supports SET by demonstrating that when employees receive support, they reciprocate with improved performance.

2. **Support for Job Demands–Resources (JD–R) theory.**

Workload (job demand) and work environment/managerial support (job resources) jointly influence engagement and performance. Managerial support acts as a resource that buffers the negative effects of workload.

3. **Contribution to Organizational Support Theory (OST).**

The mediating role of managerial support demonstrates that perceived support enhances motivation and performance, confirming OST in the academic sector context.

4. **Clarification of causal pathways in academic institutions.**

By confirming the mediating role of managerial support, the study provides

empirical evidence on how institutional leadership translates organizational conditions into employee outcomes.

Practical and Policy Implications

1. Strengthening managerial support mechanisms.

Universities should institutionalize mentorship programs, communication platforms, leadership training, and feedback systems, as managerial support significantly enhances performance.

2. Improvement of work environment infrastructure.

Authorities should invest in office facilities, internet access, classroom tools, and administrative support, as these directly influence staff efficiency.

3. Workload restructuring policies.

Clear guidelines on teaching loads, research expectations, and administrative duties are essential. Balanced workloads will enhance productivity and reduce burnout.

4. Promotion of loyalty and engagement.

HR departments should develop policies for recognition, career development, and staff welfare to foster loyalty and engagement.

Conclusion and Recommendations

The study concludes that employee performance is strongly influenced by work engagement, work environment, workload, and loyalty, with managerial support playing a key mediating role. Academic staff of ATBU Bauchi, BASUG, and FUHSTH Azare demonstrated high work engagement, which significantly improved their performance. A conducive work environment was also found to enhance employee productivity, while loyalty, driven by fair leadership and organizational justice, contributed to reduced turnover and absenteeism.

1. **Enhancing Managerial Support:** through leadership training, emotional intelligence development, and effective feedback mechanisms.

2. **Strengthening Work Engagement:** by providing career progression paths and recognition programs.

3. **Improving the Work Environment:** via upgraded facilities, adequate resources, and supportive infrastructure.

4. **Managing Workload Effectively:** ensuring balanced task distribution and offering time-management training.

5. **Promoting Employee Loyalty:** by fostering transparency, fairness, and team-building activities.

6. **Implementing Support Systems:** such as mental health programs, counseling, and mentorship schemes.

7. **Conducting Regular Evaluations:** with continuous monitoring, appraisals, and individualized development plans.

8. **Fostering Inclusivity & Collaboration:** promoting teamwork, diversity, and interdisciplinary projects.

Contributions to knowledge

Offers guidance for university management on strengthening managerial support and optimizing workload distribution and provides insights for HR practitioners to foster engagement, loyalty, and conducive work environments to enhance academic staff performance.

Extends Expectancy Theory by demonstrating how work environment and managerial support shape employee performance and integrates multiple variables (engagement, environment, workload, loyalty, managerial support) into a holistic framework for understanding employee outcomes.

Methodological Contribution: Provides a replicable survey-based SEM approach for analysing complex mediating effects.

Limitations and Suggestions for Future Studies

The study is limited by its focus on managerial support as the sole mediating variable, even though employee performance can also be shaped by other potential mediators or moderators such as family support, workplace lighting, or other psychosocial and environmental factors.

Future research could therefore broaden the model by incorporating these additional variables to provide a more comprehensive understanding of the mechanisms influencing performance. Another limitation arises from the use of a survey design, which restricts the ability to draw firm causal conclusions because such designs primarily capture associations at a single point in time. To strengthen causal inference, future studies should adopt experimental or longitudinal approaches that allow researchers to observe how changes in key variables influence outcomes over time.

Additionally, the geographical and institutional focus of the present study creates boundaries around its generalizability. By concentrating only on three universities in Bauchi State, the findings may not fully represent the diverse realities of academic staff across Nigeria's wider higher education landscape. Extending future investigations to include universities in other states and geopolitical zones would enhance the applicability of the findings and support more robust national-level conclusions.

Appendix A (Summary Table)

Summary of Measurement Model Indicators

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Extracted (AVE)	Variance
Work Engagement (WE)	0.88	0.90	0.69	
Work Environment (WEN)	0.84	0.89	0.67	
Employee Loyalty (LOY)	0.87	0.91	0.72	
Workload (WLD)	0.80	0.86	0.60	
Managerial Support (MS)	0.89	0.92	0.73	
Employee Performance (EP)	0.91	0.93	0.76	

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