Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2024): 8.431 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 11 | Issue: 12 | December 2024 -Peer-Reviewed Journal

EXAMINING THE ROLE OF INTRINSIC AND EXTRINSIC MOTIVATION AND WORK ENVIRONMENT ON ACADEMICIAN JOB PERFORMANCE AT MALAYSIAN PUBLIC UNIVERSITIES

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ABSTRACT
The performance of academicians at public institutions is essential for institutional growth, impacting not only teaching quality but also research productivity, student engagement, and overall academic reputation. The main objective of this research is to study the effect of intrinsic motivation, extrinsic motivation and work environment on academicians' job performance at public universities in Malaysia. The inconsistency of findings in past literature between the independent variables has prompted researchers to explain the inconsistency. The survey questionnaire was distributed online to academic staff of northern region public universities. The model was tested utilising Partial Least Squares Structural Equation Modelling (PLS-SEM) using data that was collected from 212 academicians from northern region public universities. The results show that intrinsic and extrinsic motivation has a significant relationship with academicians' job performance, while work environment is found to be insignificant in academicians' job performance. This study contributes to public universities building comprehensive motivating methods that meet intrinsic and extrinsic demands and optimize the work environment to improve job satisfaction and productivity among academicians.
KEYWORDS: *Academicians' job performance; Intrinsic motivation; Extrinsic motivation; Work performance*

INTRODUCTION

The effect of employee motivation and work environment on employee performance has been the subject of extensive research, especially in the context of educational institutions. Employee performance, a critical measure of organizational success, refers to the quality and efficiency of employees fulfilling their job responsibilities (Deel., 2024). In academia, particularly at public institutions, performance among academicians is essential for institutional growth, impacting not only teaching quality but also research productivity, student engagement, and overall academic reputation. According to Abdelwahed (2023), societal expectations are intrinsically linked to the effective implementation of educational processes and policies. The education system's success largely depends on academicians' dedicated efforts and significant contributions. Consequently, factors such as job motivation and the work environment are essential elements for every educational institution. Elevated levels of academicians' Motivation result in enhanced performance, which fosters a healthy and positive climate within the institutions (Yang, 2022).

In the context of higher education institutions, employee performance is multifaceted, encompassing teaching effectiveness, research output, and administrative efficiency. Both individual and organizational factors influence these dimensions. For instance, higher levels of work engagement characterized by vigour, dedication, and absorption—have been linked to improved productivity and institutional performance (Abdelwahed, 2023). Academic performance is complex, as it includes the direct impact of teaching and mentorship and the indirect contributions through research and institutional service (Virgana, 2022). High employee performance among academicians can lead to enhanced student learning, more significant innovation in research, and an increased reputation for the institution. However, achieving and sustaining this level of performance depends on several factors, particularly employee motivation (extrinsic and intrinsic motivation) and the work environment (Aljumah, 2023). Public institutions in Malaysia play a critical role in delivering essential services and implementing

government policies. However, achieving sustained high performance within these institutions requires a nuanced understanding of the interplay between motivation and work environment. Empirical evidence underscores the necessity of addressing intrinsic and extrinsic motivational factors alongside creating supportive work settings to mitigate challenges and enhance employee productivity (Yating, 2024).

In the University Professional Association for Human Resources, or CUPA-HR survey, a considerable percentage of employees in higher education (33%) indicated they were actively looking for new jobs or likely to look within the next year, which is indicative of the retention problem in higher education (University, 2023). Furthermore, rising task demands among academicians have produced a hard and demanding working environment for academic personnel, exacerbating their mental and physical disorders. Research indicates that the pressure for increased research outputs, as measured through publications, collaborations, and innovations, continues to grow. Universities are tasked with fostering an environment conducive to productivity while addressing challenges such as resource limitations and workload imbalances.

Therefore, this study examines the relationship between intrinsic motivation and academicians' job performance. It also investigates the relationship between extrinsic motivation and academicians' job performance. Additionally, the study examines the relationship between the work environment and academicians' job performance.

LITERATURE REVIEW

Overview of Higher Education Institutions

The Ministry of Higher Education (MOHE) oversees Malaysia's higher education sector, including federal-funded institutions such as public universities, polytechnics, community colleges, and vocational schools, as well as private institutions, foreign branch campuses, and hybrid arrangements funded by the public sector but operated privately (StudyMalaysia.com, 2022; Sandrasegaran, 2024). Education consistently receives the largest national development budget, reflecting the government's commitment. HEIs perform multifaceted roles in teaching, research, and community involvement. They aim to equip students with knowledge, critical thinking, and practical skills for the job market (Altbach, 2019). Research fosters innovation and contributes to scientific, technological, and social progress. HEIs also engage in community service, collaborating with local and international groups to address social issues, promote development, and share knowledge (Wit, 2011).

As part of the service industry, HEIs focus increasingly on student satisfaction, viewing education as both a professional necessity and a financial investment for parents. A high standard of education is essential for attracting and retaining students in public and private institutions. The concept of world-class universities is relative, involving diverse stakeholders such as students, parents, staff, employers, businesses, and lawmakers (Jalali, 2011). Recent trends include greater emphasis on multidisciplinary education, soft skills, and technology integration in teaching. Flexible curricula combining traditional and emerging fields provide holistic perspectives on global issues (Abo-Khalil, 2024). Post-COVID-19, technology has transformed pedagogical methods and expanded HEI access through online platforms (Akram, 2021)

Academicians' Job Performance

Academics' commitment, effort, contribution, and professional qualities are critical to the success of the education sector. Their performance provides higher education institutions (HEIs) with insights into human skills necessary to adopt strategies to achieve objectives (Tengah, 2022). As the number of universities in Malaysia grows, academicians face professional obstacles due to increased competition. Recent global changes, such as curriculum design shifts and multi-tasking responsibilities, have led to job stress and high-performance standards for universities (Yousefi, 2019). A significant amount of research has focused on academicians at public HEIs in Malaysia, where government funding provides organizational support and fair salaries, eliminating challenges with incentives or assistance. However, private HEIs, funded by tuition and related fees, face work structure and resource allocation challenges. Despite similar workloads to public HEIs, private academicians are paid based on their institution's yearly earnings (Liu, 2014).

Academicians' job performance encompasses teaching, research, service, and administrative duties, making it a key indicator of efficacy and productivity in HEIs (Ismayilova, 2019). It requires intellectual engagement, continuous self-improvement, and balancing various duties, with evaluation focusing on teaching quality, research outcomes, and contributions to the academic community. Unlike corporate performance, academic performance includes subjective metrics like mentoring efficacy and creative teaching approaches (Wu, 2024).

Higher education is a foundation for navigating globalisation, with services crossing boundaries through online or physical campuses. It is considered a critical investment in students' futures, second only to buying a house (Fang, 2020). Malaysia's education system emphasises devotion, ethics, moral behaviour, high spirits, and perfection, fostering individual and societal progress (Higdon, 2021).

New institution types like community colleges and vocational colleges improve opportunities, but enrollment rates vary based on socioeconomic conditions (Chankseliani, 2020). Financial restrictions, government budget deficits, and reliance on tuition fees create access barriers for students (Lee, 2020). Globalisation intensifies competition among HEIs for international students and research, leading to market-oriented policies. Rapid technological advancements have driven a shift toward digital education to increase access and address diverse student needs (Guri-Rosenblit, 2020)

EMPLOYEE MOTIVATION

Employee motivation is crucial to organisational performance, driving productivity, innovation, and job satisfaction. In academia, motivation influences teaching quality, research output, and alignment with institutional goals (Li, 2024). For academicians, motivation involves excelling in teaching, research, and service roles, shaped by leadership support, resources, recognition, and professional development. Effective leadership fosters motivation through clear expectations, feedback, and aligning institutional goals with personal aspirations (Capunitan, 2023). Institutional culture promoting collaboration and intellectual freedom enhances motivation, with resources like research facilities and mentoring programs contributing to professional growth.

Universities that invest in staff motivation see higher retention and performance outcomes. Initiatives like workshops, sabbaticals, and recognition programs enhance professional advancement and well-being. Motivation can be intrinsic or extrinsic, with studies indicating a strong correlation between motivation and productivity (Vo, Tuliao, & Chen, 2022). Motivated employees contribute to organisational success and improved financial performance, while unmotivated staff may lead to instability and underperformance (Ryan, 2020). Researchers emphasise that motivated academicians help achieve institutional goals and foster a strong organisational culture (Sharma, 2020; Krishnan, 2021).

Intrinsic Motivation

Intrinsic motivation refers to an individual's internal drive to engage in activities for their inherent satisfaction. Three types of intrinsic motivation are highlighted: pursuing enjoyable and rewarding activities like hobbies, completing monotonous but tension-relieving tasks like meeting deadlines, and acting to meet standards such as ethical principles and group commitments (Cherry, 2023).

In higher education, intrinsic motivation is linked to enhanced engagement, job satisfaction, and performance among faculty. As academia increasingly focuses on student outcomes, research output, and institutional responsibilities, intrinsic motivation becomes crucial for a committed workforce. Research by Mnyani (2024) emphasises the positive effect of intrinsic motivation on academic job performance, especially when work aligns with personal values and autonomy. Similarly, Hoxha (2024) finds that intrinsic motivation boosts productivity and engagement when tasks resonate with individuals' interests. Skaalvik (2017) notes that intrinsic motivation fosters proactive learning and adaptability, which are key traits in academia.

Supportive institutional environments encouraging autonomy enhance intrinsic motivation, leading to higher teaching and research effectiveness (Erturk, 2023). Conversely, pressures to prioritise productivity over intellectual discovery can undermine intrinsic motivation. Oclaret (2021) stresses the need for policies that balance institutional goals with personal aspirations to sustain motivation. Alyouzbaky (2022) argues in favour of flexibility and academic freedom to create conditions in which intrinsic motivation thrives, benefiting both academics and institutions.

Extrinsic Motivation

Extrinsic motivation occurs when individuals act in response to external stimuli, focusing on achieving objectives distinct from the activity itself. In the workplace, extrinsic motivation involves external factors such as money, recognition, and rewards. Common incentives include financial compensation, employee awards, and structured activities, significantly impacting academicians' job performance. Salary, career advancements, recognition, and stability are extrinsic motivators widely used in higher education to enhance research output, academic achievements, and administrative efficiency, particularly in institutions prioritizing measurable results and competitive rankings.

Research highlights a complex relationship between extrinsic motivation and academic performance. Sofian (2022) found that financial incentives and recognition boost short-term productivity, particularly in research publications and administrative tasks, as they align with institutional goals and professional ambitions. Similarly, Sinniah (2022) emphasises the importance of aligning rewards with professional aspirations, with Awain (2023) showing that monetary incentives, recognition, and career advancement correlate positively with productivity and organizational commitment. These motivators sustain focus and drive, ensuring continuous effort toward institutional goals.

However, over-reliance on extrinsic incentives may reduce intrinsic motivation, known as the "crowding-out effect." This phenomenon can diminish job satisfaction, impacting teaching quality and student engagement. Resh (2019) observed that excessive external rewards negatively affect academics' long-term commitment and work quality. Despite these drawbacks, recognition-based incentives, such as official acknowledgement of achievements, foster work satisfaction by aligning with the desire for status and validation (Baqir, 2020). Policies offering career development, professional growth tools, and merit-based promotions improve faculty performance and satisfaction by addressing both extrinsic and intrinsic needs (Pandya, 2024).

Work Environment

As described by Kiiru (2019), the work environment is the setting where people work, encompassing physical surroundings, professional persona, culture, and marketplace conditions. Each element is interconnected, affecting an employee's overall efficiency and motivation, ultimately improving performance. It includes physical aspects like temperature and hardware, job-related factors like workload and complexity, personality traits like tradition and history, and external contextual elements like local labour market conditions.

Zhenjing (2022) defines a work environment as a setting that inspires people to join its workforce, offering opportunities to perform efficiently. Attractive and supportive environments enable individuals to effectively utilise their talents, competencies, and knowledge. Satisfaction arises when tasks align with colleagues' support. Chandrasekar (2011) highlights that physical aspects like office design and psychological factors such as workplace conditions and policies shape the work environment and influence employee productivity.

In academia, the work environment involves physical conditions, corporate culture, leadership, and interpersonal interactions. Physical factors, such as well-equipped offices and modern teaching tools, directly enhance academic staff efficiency and research output (Gusho, 2023). Conversely, inadequate resources hinder performance by causing frustration and wasting time. Organizational and social factors are equally vital in academic settings. A culture promoting professional growth, recognition, and collaboration boosts educator performance, as an interactive and supportive atmosphere fosters satisfaction and productivity (Li, 2022). Work-life balance is another crucial aspect. Flexible arrangements and support for balancing personal and professional commitments improve job performance and satisfaction among academicians (Ghimire, 2023).

METHODOLOGY

This study employs a quantitative approach using a questionnaire to collect data on academicians' job performance in public universities. Quantitative research is defined as an approach that uses statistical techniques to analyse numerical data and understand phenomena. The population comprises full-time academicians employed in northern public universities. Academicians are suitable participants because their roles involve high engagement and adaptability, making them ideal for studying the effects of motivation and work environment on job performance.

Selecting an appropriate sample size ensures accurate representation while optimising time, resources, and cost (Sekaran, 2009). The sample for this study includes academicians from northern public universities due to their relevance as focus and multidisciplinary universities in the region. The sample size represents the number of participants selected from the population. Accurate sample size estimation is crucial for meaningful results and generalisation to the larger population. Factors considered in determining sample size include study population size, confidence level, variance, and margin of error (Taherdoost, 2017). A formula for calculating sample size in social research, with a 95% confidence level and 5% margin of error, was applied to ensure reliability. The study uses simple random sampling, a probability sampling method where every individual in the target population has an equal chance of selection. This method is cost-effective, straightforward, and widely used in similar research (Taherdoost, 2017).

The online questionnaire was distributed via email, with respondents accessing it through a secure link hosted on Google Forms. This method was chosen for its speed, cost-effectiveness, and ability to ensure anonymity. Data

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collection was completed within a week. Out of 374 distributed questionnaires, 212 were returned, resulting in a response rate of 56.7%. All returned questionnaires were fully completed and considered valid for analysis.

RESULTS

This portion included a descriptive study of the respondents' demographics, including gender, age, race, marital status, education level, average salary, work experience, and position. The profile information of 212 respondents is shown in Table 1. The data shows that 51.9% of respondents are male (110 frequencies), and 48.1% are female (102 frequencies). Most respondents (43.4%) fall within the 41–50 age range. Regarding ethnicity, 85.9% are Malay, followed by Chinese (3.8%), Indians (4.2%), and others (6.1%). Regarding marital status, 88.2% are married, 9.4% are single, and 2.4% are divorced.

Educationally, most respondents are Ph.D. holders (71.7%), with the remaining being Master's holders. Regarding income, 7.5% earn below RM5,000, 68.9% earn RM5,001–RM10,000, 21.2% earn RM10,001–RM15,000, 1.9% earn RM15,001–RM20,000, and 0.5% earn above RM20,000. For job tenure, 14.7% have less than 5 years of experience, 20.3% have 6–10 years, 21.2% have 11–15 years, 25.9% have 16–20 years, and 17.9% have more than 20 years. Regarding job positions, 2.3% are Professors, 24.1% are Associate Professors, 56.6% are Senior Lecturers, 14.2% are Lecturers, and 2.8% are Tutors.

Table 1
Demographic Profile

Demographic	Category	Frequency	Percent (%)
Gender	Male	110	51.9%
	Female	102	48.1%
Age	20 – 30	2	0.9%
	31 – 40	82	38.7%
	41 – 50	92	43.4%
	51 – 60	33	15.6%
	61 and above	3	1.4%
Race	Malay	182	85.9%
	Chinese Indian	8	3.8%
	Others	9	4.2%
		13	6.1%
Marital Status	Single	20	9.4%
	Married Divorced	187	88.2%
		5	2.4%
Education Level	Master	60	28.3%
	PhD	152	71.7%
Average Salary	Less than RM5,000	16	7.5%
	RM5,001 – RM10,000	146	68.9%
	RM10,001 – RM 15,000	45	21.2%
	RM15,001 – RM 20,000	4	1.9%
	More than RM 20,000	1	0.5%
Work experience	Less than 5 years	31	14.7%
	6 years – 10 years	43	20.3%
	11 years – 15 years	45	21.2%
	16 years – 20 years	55	25.9%
	More than 20 years	38	17.9%
Position	Professor	5	2.3%
	Associate Professor	51	24.1%
	Senior Lecturer	120	56.6%
	Lecturer	30	14.2%
	Tutor	6	2.8%

Assessment of Reflective Measurement Model

The model's validity was evaluated using discriminant validity and composite reliability, along with convergent and divergent validity. Refer to (Hair J. F., 2014) for assessing PLS-SEM results for a reflective model. Internal coherence reliability must be assessed as a key factor. Traditionally, intrinsic consistency is necessary to calculate

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Cronbach's alpha, which estimates reliability based on the construct's intercorrelation. In contrast, the PLS-SEM method evaluates construct reliability using composite reliability, which assesses dependability with values ranging from 0 to 1. Higher values indicate superior reliability. An ideal composite reliability value falls between 0.7 and 0.9, while a range of 0.6 to 0.7 is acceptable (Hair, Hult, Ringle & Sarstedt, 2014). Convergent validity evaluates alignment with related measures. Researchers should consider outer loadings and AVE, ensuring loadings exceed 0.708, though caution is needed when removing lower values.

Table 2
Results Summary for Reliability and Validity for the Construct

First Order Construct	Scale Type	Item	Loadings	AVE	CR	Item deleted due to low loading
Intrinsic Motivation	Reflective	IM1	0.70	0.69	0.90	-
		IM2	0.83			
		IM3	0.89			
		IM4	0.90			
Extrinsic Motivation	Reflective	EM1	0.84	0.62	0.86	-
		EM2	0.85			
		EM3	0.87			
		EM4	0.53			
Work Environment	Reflective	WE1	0.86	0.56	0.83	-
		WE2	0.83			
		WE3	0.67			
		WE4	0.58			
Academicians Job Performance	Reflective	AJP1	0.80	0.67	0.91	-
		AJP2	0.79			
		AJP3	0.85			
		AJP4	0.84			
		AJP5	0.82			

Discriminant Validity

Table 3 shows the discriminant validity assessment using the heterotrait-monotrait ratio (HTMT) criterion. The HTMT values indicate the correlations between the constructs, and according to Henseler, Ringle, and Sarstedt (2015), discriminant validity is given if the HTMT values are below the threshold value of 0.85 (or in some cases below 0.90, depending on the context). In this case, the HTMT values between all construct pairs are well below the recommended threshold. In particular, the HTMT value between the work performance of an academic and extrinsic motivation is 0.62, while it is 0.67 between the work performance of an academic and intrinsic motivation and 0.40 between the work performance of an academic and the work environment. Similarly, the HTMT value between extrinsic motivation and intrinsic motivation is 0.61, between extrinsic motivation and work environment is 0.57 and between intrinsic motivation and work environment is 0.69. These results confirm that the constructs meet the discriminant validity requirements based on the HTMT criterion. Therefore, it can be concluded that each construct is sufficiently distinct from the others, supporting the reliability of the measurement model in this study (Henseler et al., 2015).

Table 3
Discriminant validity using Heterotrait-Monotrait Ratio (HTMT)

	Academician Job Performance	Extrinsic Motivation	Intrinsic Motivation	Work Environment
Academician Job Performance				
Extrinsic Motivation	0.62			
Intrinsic Motivation	0.67	0.61		
Work Environment	0.40	0.57	0.69	

Assessment of Structural Model

The hypothesis was tested using the PLS-SEM approach, and the structural model was bootstrapped. Based on Figure 1, the hypothesis was tested to determine the conventional path coefficient, focusing on the direct connection.

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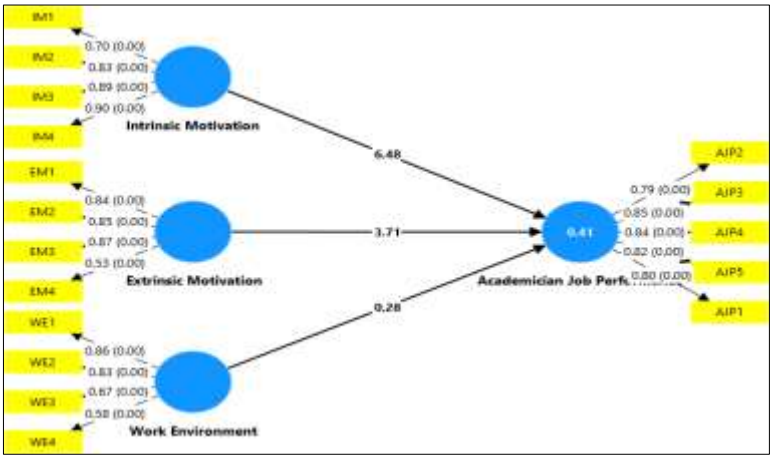

Figure 1
Structural Model of the Study

Table 4 shows the results of the direct relationships among the variables, as analysed using the PLS-SEM approach, revealing that intrinsic and extrinsic motivation significantly impact academicians' job performance. Intrinsic motivation shows a strong positive relationship with job performance ($\beta = 0.45$, $t = 6.48$, $p < 0.01$), with a moderate effect size ($f^2 = 0.21$). Similarly, extrinsic motivation has a positive and significant impact on job performance ($\beta = 0.30$, $t = 3.71$, $p < 0.01$), though its effect size is smaller ($f^2 = 0.11$). These findings highlight the critical role of motivation, particularly intrinsic factors, in driving academicians' performance.

Table 4
List Summary of Direct Relationship

Hypothesis	Relationship	Beta	SE	T-value	P value	f2	Decision
H1	Intrinsic motivation -> Academician Job Performance	0.45	0.07	6.48	0.00	0.21	Supported
H2	Extrinsic motivation -> Academician Job Performance	0.30	0.08	3.71	0.00	0.11	Supported
H3	Work Environment -> Academician Job Performance	-0.02	0.07	0.28	0.39	0.00	Not Supported

In contrast, the relationship between the work environment and job performance is insignificant ($\beta = 0.02$, $t = 0.28$, $p = 0.39$), with an effect size of 0.00, indicating no measurable impact. This suggests that, in this context, the work environment does not directly influence academicians' performance.

The analysis evaluates the predictive relevance (R^2) of the constructs using the PLS blindfolding process, with the R^2 value for the "Academician" construct recorded at 0.41, categorised as "Good". This indicates a substantial level of predictive accuracy, as per Cohen's (1988) thresholds, where R^2 values of 0.26, 0.13, and 0.02 represent substantial, moderate, and weak predictive relevance, respectively. Effect sizes (f-squared) show extrinsic motivation has a small effect (0.11), intrinsic motivation has a medium effect (0.21), and the work environment no significant effect (0.00) on academic performance. These findings highlight the contributions of each variable and align with Hair et al. (2019) on effect size assessment in structural equation modelling.

DISCUSSION

The research reveals a positive and significant relationship between intrinsic motivation and job performance among academicians at public universities, supported by a t-value of 6.48 using PLS analysis. The findings confirm Hypothesis H1, aligning with Mnyani (2024), who emphasised that intrinsic factors like self-efficacy, autonomy, and intellectual engagement positively impact job performance and satisfaction. Intrinsic Motivation fosters job satisfaction and performance by aligning tasks with personal values and intellectual curiosity. Academicians with intrinsic Motivation exhibit creativity, perseverance, and joy in their work, suggesting that aligning work environments with academic' values is crucial for higher education success.

The study validates Hypothesis H2, showing a positive and significant relationship between extrinsic motivation and job performance with a t-value of 3.71. Extrinsic incentives, such as monetary rewards and promotions, significantly improve academicians' efficiency and satisfaction, as Sinniah (2022) and Pandya (2024) noted. The findings highlight the importance of incentive systems in fostering academic achievement and creating a motivated atmosphere. Institutions can enhance productivity and happiness by pairing external motivators with professional development opportunities.

The study explores the link between the work environment and job performance, finding a $\beta = -0.02$ and t-value = 0.28, which indicates a positive correlation, though less statistically robust. Previous research by Dziuba (2020) and Li Y. (2022) highlights that a supportive, interactive, and inclusive work environment enhances performance by enabling novel teaching and research exploration. Conducive policies and a collaborative atmosphere promote analytical thinking and innovative ideas, improving teaching outcomes and research achievements. External factors significantly influence performance across varying situations and individuals.

Limitations, Future Research Directions and Conclusion

The study faces several constraints. Its scope is limited to public universities, restricting the applicability of findings to private institutions or other industries. Public universities' unique cultural and institutional characteristics may influence the relationship between motivation, work environment, and job performance differently than in other contexts. The reliance on self-reported data introduces response bias, as participants may exaggerate or downplay their motivation or performance due to social desirability or subjective impressions. Methodologically, the use of the Likert scale to measure high performance, work-life quality, and academic performance presents challenges as individual.

Future studies could expand to private institutions and other industries to explore whether the relationships between motivation, work environment, and job performance differ across institutional contexts. Comparative research could illuminate how cultural, organisational, and economic factors influence these characteristics. Mixed-method approaches, incorporating quantitative and qualitative techniques such as interviews or focus groups, could mitigate response bias and provide richer insights. Additionally, research could compare the quality of work-life and performance in academic and non-academic settings or examine these factors across various regions to broaden the study's scope.

The study examined the effects of intrinsic Motivation, extrinsic Motivation, and the work environment on academicians' job performance in public universities, using independent and dependent variables. Among the three hypotheses, one was not supported, as the work environment was found to be insignificant. However, intrinsic and extrinsic motivation emerged as major determinants of academic job performance. To improve productivity, teaching quality, and research outputs, universities should implement policies that blend intrinsic and extrinsic motivators while enhancing the work environment.

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