Role of employee perceptions of equity in reward distribution in moderating the influence of reward management systems on employee performance at the University of Abuja

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Abstract

This study examined the influence of employee perceptions of equity in reward distribution on the relationship between reward management systems and employee performance at the University of Abuja. The study utilized a structured questionnaire to collect primary data. A total of three hundred questionnaires were returned from a sample of 337 respondents, selected through a stratified random sampling technique from a population of 2,145 academic and non-academic employees. For analysis, the researchers employed partial least squares structural equation modeling, along with exploratory and confirmatory factor analyses, as well as descriptive statistics. The results indicated that employee performance at the University of Abuja was positively and significantly affected by reward management systems. Additionally, the mediation analysis revealed that the relationship between employee performance and reward management systems is partially moderated by employees' perceptions of equity in reward distribution. These findings underscore the importance of implementing an effective compensation system at the University of Abuja to enhance staff capacity through equitable reward distribution.

Contents

Contribution of this paper to the literature
This study was the first, to the best of our knowledge, to provide empirical insights into the moderating role of employee perceptions of equity in reward distribution on the relationship between reward management systems and employee performance at the University of Abuja.

1. Introduction

Because employees are the lifeblood of any organization, they are essential to achieving administrative and academic objectives, as well as the overall success of many higher education institutions, including the University of Abuja. In today's competitive world, which is characterized by numerous obstacles to maintaining competitiveness, it is understandable why Bosalie, Dietz, and Boon (2003) asserted that personnel are vital resources for a business to remain competitive. It is also believed that a reward system is crucial for employee success (Gerhart & Milkovich, 1992; Lawler, 1971). In an era of acute human resource shortages, rewards are a prerequisite for improved worker performance.

It's no surprise that from its founding in 1919, the International Labour Organisation has promoted employee motivation in order to improve and establish respectable working and economic conditions (Mwende, 2015). One of the primary causes of the brain drain of African university employees to other economies is inadequate reward structures in higher education. Prior research findings have demonstrated that reward programmes can improve workers' performance (Agbaeze & Ebirim, 2020; Agbenyo, 2018; Arikwera, 2015; Ejikeme, Ugwu, Nebeife, & Ngige, 2020; Eze, 2012; Kabuki, 2019; Kampororo, Wafula, & Mwangi, 2021; Kathombe, 2018; Mudey, 2019; Noorazem, Md Sabri, & Mat Nazir, 2021; Ogbu, Ewelike, & Udeh, 2020; Pradhan, 2022; Rashid, Hamza, & Said, 2018; Rugami, Wambua, & Mwatha, 2016; Sajuyigbe, Olaoye, & Adeyemi, 2013).

However, the efficacy of a reward system is determined by how equitable and fair employees believe the distribution of benefits is (Adams, 1963). Employees compare their inputs (skills, effort, and experience) to their outcomes (rewards, recognition, and promotions) and compare this ratio to that of their peers, according to the equity hypothesis (Adams, 1963). When workers see that their input-outcome ratio is the same as that of their peers, they feel more equitable and are motivated to perform better. On the other hand, if employees perceive that they are not being treated fairly, they will become demotivated and perform worse (Greenberg, 1987).

Employee perceptions of reward distribution equity have been found to affect the relationship between reward systems and employee performance (Sweeney & McFarlin, 1993; Tremblay, Sire, & Balkin, 2000). Investigation established that employee morale, trust, and productivity can be negatively affected by perceived inequities in promotion and reward distribution (Erdogan & Bauer, 2014). Employee perceptions of the fairness and justice of the rewards given determine how effective a compensation system is at improving employee performance. The study's conclusions may lead to the development of new information that will help the University of Abuja create and execute efficient incentive programmes that would improve worker performance. Employees' desire to achieve unparalleled performance at the University of Abuja is expected to be greatly aided by the reward scheme. However, it is necessary to look into how the impact of the reward system on employees' performance is moderated by their beliefs of equity in reward distribution.

Even though there is a litany of research on the connection between reward programmes and worker performance with an intervening component (Adoe, Frans, & Neolaka, 2025; Aidi, Salifu, & Ijuwo, 2023; Alkandi et al., 2023; Bintang & Indrawan, 2025; Fahlevi & Rahadi, 2024; Hadi, 2023; Hussain, Khaliq, Nisar, Kamboh, & Ali, 2019; Kamselem, Nuhu, Lawal, Liman, & Abdullahi, 2022; Karami, Dolatabadi, & Rajaeepour, 2013; Khan et al., 2022; Kumar & Vasudevan, 2024; Kumari, Ali, & Abbas, 2021; Lili, Sri, & Santi, 2024; Liman, Santamoko, Limajatini, & Anggraeni, 2024; Mitalo & Wanyama, 2025; Mugaa, Guyo, & Odhiambo, 2018; Notmayanti, Yusuf, Nadirah, & Junaidi, 2024; Pratiwi, Kistyanto, & Wardoyo, 2024; Prihantoko & Ferijani, 2021; Rifqi, Siregar, & Ghifary, 2025; Siswanto, Maulidiyah, & Masyhuri, 2021) only Mitalo and Wanyama (2025) conducted research on the relationship between academic staff performance and employee salary in Kenyan Chartered Public Universities, using perceived equity as a moderating factor.

This study, conducted at Kenyan Chartered Public Universities, focused on the performance of academic personnel. However, our research, carried out at the University of Abuja in Nigeria, concentrated on the performance of both academic and non-academic staff. To the best of our knowledge, no research has examined this link, let alone its exploration within the context of the University of Abuja, with employees' opinions of equity in reward distribution as a moderating factor. Additionally, the management of the University of Abuja finds it challenging to effectively restructure its reward management systems to ensure optimal employee performance and mitigate unfavorable outcomes such as low morale, poor commitment, and high turnover due to a lack of clarity on this moderating task (Alonso & Elovainio, 2022). This work aims to address this information gap by suggesting actionable insights for the university's human resources policy. Furthermore, various environments can produce different outcomes and lead to variations in reward management systems. Moreover, there is a notable lack of research on this subject.

Therefore, additional data from other situations and nations is required to support the link between reward systems and employees' performance. Furthermore, despite the conventional role of reward management systems in attracting, inspiring, and retaining high-performing workers (Kalkidan, 2017; Shields et al., 2016), organizations such as the University of Abuja continue to face persistent difficulties in increasing employee turnover. Research indicates that reward systems positively influence employees' performance in Nigerian universities; however, a significant obstacle is that certain reward practices, such as the lack of automatic rewards for good performance or the disconnect between appraisal and reward, can negatively impact employees' performance at the University of Abuja (Ekeoma & Darko, 2023; NDIC, 2025).

The following research questions were put forth to address the goals of this study: Does the relationship between the University of Abuja personnel's performance and reward systems get tempered by their opinions of equity in reward distribution? What connection exists between the University of Abuja employees' performance and reward management systems? Therefore, the purpose of this study is to investigate how the University of Abuja employees' perceptions of equity in reward distribution may mitigate the impact of reward systems on workers' performance.

Additionally, it will examine how the University of Abuja staff performance is affected by reward management systems. This study contributes to the existing body of literature: Our research demonstrated that reward management systems have a positive impact on employees' performance at the University of Abuja. First, the impact of reward management systems on employees' performance, with the moderating role of employees' perceptions of equity in reward distribution, has not been thoroughly examined in the literature. The findings can serve as a guide for human resource managers at the University of Abuja to develop and sustain effective reward management systems that enhance employee performance and help achieve the highest standards of excellence, comparable to those of the best universities in developed nations.

Second, to the best of our knowledge, this study was the first to use an interactive term to investigate the indirect effects of reward management systems on the University of Abuja personnel's performance. Third, in contrast to covariance-based SEM (CB-SEM), which concentrates on theory testing and necessitates stringent assumptions, the Partial Least Squares Structural Equation Modelling (PLS-SEM) technique, a variance-based method appropriate for exploratory research and prediction, was used in this study. It is suitable for complex models, small sample sizes, and non-normally distributed data. Its adaptability enables the estimation of individual construct scores, complex model architectures, and the simultaneous linking of indicators to several latent variables. This test confirmed the validity of our findings. This research proceeds as follows: The second portion discusses the literature review and the theoretical framework. The methodology is discussed in Section 3. The findings and debates are the main focus of Section 4, and the conclusion and suggestions are the main focus of Section 5.

2. Theoretical Framework, Empirical Issues, and Hypotheses

This study was guided by the expectancy theory of Vroom and Jones (1964) and the equity theory of Adams (1963). According to this equity thesis, workers seek justice and fairness in their workplace. Based on the equity theory, employees evaluate the fairness of their incentives by comparing their inputs (such as effort and talents) to their outcomes (such as compensation and promotions). According to Greenberg (1987), employees who perceive that rewards are distributed fairly tend to be more motivated and satisfied at work. Adams (1963) proposed that perceived unfairness results in discontent, demotivation, and poorer performance. According to Deci (1971), reward systems can be categorized into intrinsic and extrinsic rewards. While intrinsic benefits, such as autonomy and recognition, are intangible and originate from the work itself, extrinsic rewards, like compensation and promotions, are material and provided by the company (Osterloh & Frey, 2000).

Both forms of rewards have the potential to influence employee performance, but their effectiveness depends on how equitable and fair they are perceived by the workforce. According to the hypothesis, the relationship between reward systems and employee performance is moderated by employees' sense of equity in reward distribution. Equity theory has drawbacks despite its advantages. Walster, Berscheid, and Walster (1973) emphasized that fairness was difficult to measure using the equity approach. This problem stems from the fact that this theory relies on subjectivity to measure equity. This may lead to inconsistent outcomes and difficulties connecting findings across studies. Limited generalizability is another critique leveled against this theory. Western civilizations were considered when developing the thesis. This can make it less applicable in different cultural contexts (Hofstede, 1980).

The authenticity of the equity theory may be impacted by many cultural norms and beliefs around equity. According to the notion, a person's perspective on equity is unchanging. This involves evaluating equity only once, ignoring the fact that relationships are dynamic and that opinions may evolve over time (Cropanzano, Byrne, Bobocel, & Rupp, 2001). Employees' perspectives on equity can change in response to a variety of life experiences and encounters. Once more, this theory's predictions are unclear. Although the theory emphasizes the value of justice, it never predicted how or when people would react to injustices they observed (Greenberg, 1987). This flaw may restrict how this theory can be used in real-world situations. Moreover, this ideology places too much emphasis on individualism. The approach focuses on individual perceptions of fairness while ignoring the impact of organizational and group-level factors on motivation and satisfaction (Adams, 1963).

Opponents argued that the individualistic approach ignored how organizational culture and team dynamics influenced employee attitudes and behaviors (Huseman, Hatfield, & Miles, 1987). Lastly, this paradigm overlooked other motivating reasons. The approach ignored important aspects of motivation, such as intrinsic drive, autonomy, and work complexity, in favor of focusing primarily on fairness and justice (Hackman & Oldham, 1976). These flaws justified combining expectancy theory and equity theory. According to the expectancy hypothesis, employees are motivated when they believe their efforts will yield the desired results. Employee motivation increases when they see a positive correlation between their performance and compensation. Because employees assess the likelihood of attaining desired results based on their inputs and outputs, equity theory and expectancy theory are complementary.

Despite its appeal, this idea has some drawbacks. There are measurement issues with the theory. This methodology is heavily reliant on human perceptions, which are difficult to assess accurately. According to research findings, people's given measures of anticipation, instrumentality, and valence may not always reflect their actual beliefs (Bandura, 1986). Individual differences in personality, aptitude, or motivational styles that may influence anticipation, instrumentality, and valence are not taken into account by the model (Kanfer, 1990). According to the notion, motivation is a constant process. However, a variety of circumstances, like habituation or shifting goals, might cause motivation to shift over time (Klein, 1989). Furthermore, Deci (1971) contended that the theory ignores the role of intrinsic motivators (such as enjoyment and personal fulfilment) in influencing behaviour in favour of extrinsic motivators (such as rewards and recognition).

Despite these drawbacks, expectancy theory addressed some of equity theory's shortcomings by offering a more sophisticated understanding of motivation. While expectancy theory considers the individual's estimated likelihood of achieving a specific outcome, equity theory focuses on reward fairness. Expectancy theory also recognises that each person's motivation is influenced by their own set of values, beliefs, and preferences. This individualised perspective can address the equity theory's more general emphasis on equality and fairness. Additionally, expectancy theory acknowledges that motivation is influenced by a variety of elements, including instrumentality, valence, and anticipation. This broad approach can address the complexity of motivation aside from merely perceived fairness. By combining these components, expectancy theory provides a more comprehensive understanding of motivation that can help address some of the equity theory's drawbacks.

Various investigations on the association between reward systems and employees' performance through various intervening variables in the literature have outweighed the relationship between reward systems and employees' performance through employees' views of equity in incentive distribution. As can be observed from the examined research, only one of them focused on this subject, highlighting the study's shortcomings. Furthermore, using other intervening variables, the majority of the research evaluated here examined the relationship between reward systems and employee performance. Rifqi et al. (2025) employed PLS-SEM to investigate the impact of rewards and punishments on employee performance through leadership style and found that leadership style mediated the effect of rewards and punishments on employee performance.

Employing work motivation as a moderating variable, Adoe et al. (2025) employed the PLS technique to investigate the impact of self-efficacy and reward on employee performance at Bank NTT Head Office. They found that work motivation did not mitigate the effect of self-efficacy and reward on performance. Using motivation as a moderating variable, Prihantoko and Ferijani (2021) applied the Moderated Regression Analysis (MRA) test to examine the impact of pay and benefits on employee performance. The results indicated that the impact of pay and benefits on worker performance is moderated by motivation. This finding contradicts Adoe et al. (2025). Utilizing work motivation as an intervening variable, Bintang and Indrawan (2025) used PLS to investigate how rewards and punishments affect employee performance in the Sidikalang Sub-district Office.

The findings demonstrated that the relationship between employee performance and rewards is mediated by motivation. In a similar vein, research by Prihantoko and Ferijani (2021) discovered that motivation mediates the relationship between employee performance and rewards. Aidi et al. (2023) examined the moderating role of job satisfaction on financial incentives and worker performance in Nigerian pharmaceutical companies using the multiple regression technique. The findings demonstrated that the relationship between financial rewards and employee performance is significantly moderated by work satisfaction. Likewise, Khan et al. (2022) examined the connection between job performance and remuneration, using job happiness as a moderator. The findings showed that the relationship between reward and job performance was mediated by job satisfaction.

This outcome supported the arguments made by Aidi et al. (2023). In addition to examining the mediating role of job satisfaction in the relationship between reward, punishment, and organizational climate and employee performance, Lili et al. (2024) employed PLS-SEM to examine the impact of these factors on the performance and job satisfaction of NTB Province Bappenda employees. The results showed that the relationship between employee performance and rewards is partially mediated by work satisfaction. Furthermore, the relationship between employee performance and punishment is partially mediated by work satisfaction. This outcome contradicts the submissions of Aidi et al. (2023) and Khan et al. (2022). With job satisfaction acting as a moderator, Kumari et al. (2021) investigated the impact of incentives and rewards on workers' job performance. While job performance was assessed from the standpoint of task and contextual performance, motivation and rewards were examined from both intrinsic and extrinsic perspectives. The results demonstrated that the relationship between employee job performance and reward is partially mediated by job satisfaction.

Additionally, the relationship between motivation and job performance is partially mediated by job satisfaction. The relationship between compensation and employee performance is entirely mediated by job satisfaction, according to research by Kumar and Vasudevan (2024), Khan et al. (2022), and Aidi et al. (2023). Utilizing inferential statistics, PLS-SEM was used by Liman et al. (2024) to examine the impact of innovative behaviour and reward systems on employee performance, using the ability to think creatively as a moderator. The findings demonstrated that the impact of innovative behaviour and reward systems on employee performance is moderated by creative thinking capacity. Hussain et al. (2019) used perceived organisational support as a mediator to examine the impact of job-related stress, rewards, and recognition on employee performance. The results showed that the impact of job stress, rewards, and recognition on employee performance is entirely mediated by perceived organisational support.

Employing employee engagement as a mediator, Kamselem et al. (2022) employed PLS-SEM to investigate how job conditions and reward systems affect employee retention. The results showed that the impact of job conditions and reward systems on employee retention is partially mediated by employee engagement. Utilizing regression analysis, Mitalo and Wanyama (2025) examined how perceived equity affected the connection between employee pay and performance in Kenya's chartered public universities. The findings showed that the relationship between employee compensation and performance is moderated by perceived equity. Using SEM and employee welfare as an intervening variable and morality as a moderating variable, Pratiwi et al. (2024) investigated the relationship between compensation and employee performance. The results showed that the relationship between compensation and employee performance is moderated by morality.

Furthermore, the relationship between employee performance and welfare is moderated by morality. Figure 1 illustrates the connection between reward management systems, workers' perceptions of reward distribution equity, and workers' performance. The theoretical and empirical review produced the conceptual framework. Employee performance is the dependent variable, reward management systems are the independent variables, and employees' opinions of equity in incentive distribution are the moderating variables. Directly beneath it are the five reward system construct indicators. From a theoretical perspective, the link between these variables is described by equity and expectancy theory. Regarding the impact of reward systems on employees' perceptions of equity, the nature and layout of an organisation's reward systems influence how employees perceive equity in reward distribution.

A transparent and equitable incentive system is expected to improve employees' perceptions of equity (Greenberg, 1987). From the perspective of how employees perceive equity in the allocation of rewards, employees' motivation, job satisfaction, and performance are all impacted. Adams (1963) proposed that when workers see that their rewards are equitable, they become more motivated to perform better. Regarding how employees' perceptions of equity in reward distribution moderate the relationship between reward systems and employee performance, employees' perceptions of equity in reward distribution moderate the relationship between reward systems and employee performance. Employee perceptions of fairness and equity in reward distribution are therefore critical to the effectiveness of reward systems in improving employee performance. The existing research on the relationships between the constructs used in this study served as the basis for testing these hypotheses.

H_{01}: *This university gives promotions to the individuals who merit them and has no significant effect on employees' performance at the University of Abuja.*

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H_{02}: *Supervisors acknowledging employees for executing jobs of high quality has no significant effect on employees' performance at the University of Abuja.*

H_{03}: *The process of performance appraisal, connected to the reward systems, has no significant effect on employees' performance at the University of Abuja.*

H_{04}: *This university does not automatically reward good performance and has no significant effect on supervisors acknowledging employees for executing jobs of high quality.*

H_{05}: *Reward systems have no significant effect on this university gives promotions to the individuals who merit them.*

H_{06}: *Reward systems have no significant effect on supervisors acknowledging employees for executing jobs of high quality.*

H_{07}: *Reward systems have no significant effect on the process of performance appraisal is connected to the reward system.*

H_{08}: *Reward systems have no significant effect on promotions, and pay increases depend on the attainment of known performance goals.*
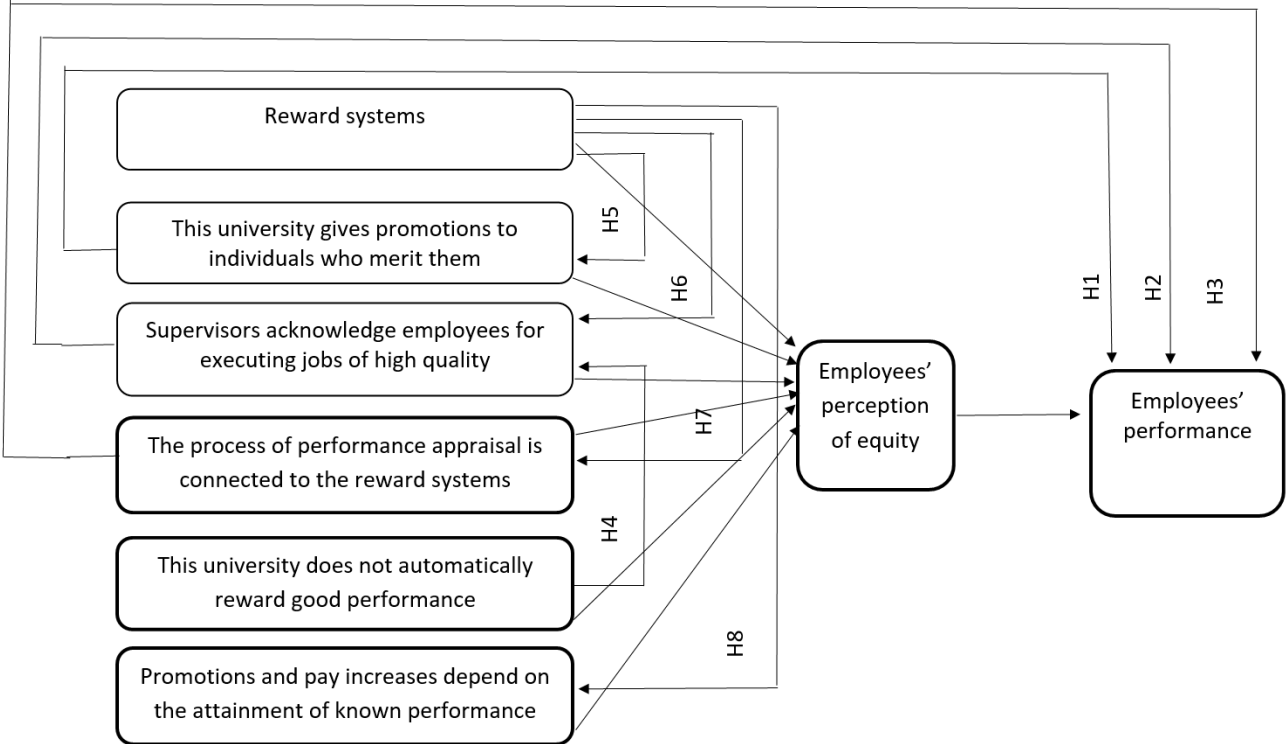

Figure 1. Conceptual framework.

3. Methodology

For this study, we used a descriptive research approach. The staff of the University of Abuja served as the study's population. The 2,145 personnel of the University of Abuja are the target population. Both academic and non-academic employees of the organization participated in the survey. There are 640 academic staff members and 1,505 non-academic staff members included in this. Based on the calculation above, the study's sample size was 337. This was done using the stratified random sampling technique, and the sample size was determined using Yamane's (1967) formula. In order to complete the sample, employees from each stratum are chosen at random using this technique, which ensures that the sample size is representative of the stratum in the overall population.

This method reduces bias in population parameter estimation, and the sample was guaranteed to precisely reflect the population's structure. For this study, we used proportionate stratified random sampling. A 30/70% demographic split between academics and non-academics was maintained through proportionate stratified random sampling. For each stratum, academic employees received $337/2145 * 640 = 101$, while non-academic employees received $337/2145 * 1505 = 236$. Among the academic and non-academic staff, 101 and 236 people were chosen, respectively, to reach a sample size of 337 employees. Both primary and secondary data were used in the investigation. The information was gathered through a structured survey. Each construct in the structured questionnaire was given a five-point Likert scale, with 1 denoting strongly disagree and 5 denoting strongly agree.

In order to assess employee performance, we adopted the 11 work performance variables proposed by Duru, Eze, Yusuf, Udo, and Saleh (2022). Furthermore, eight of the thirteen components of reward management systems that Duru, Eze, Yusuf, Udo, and Saleh (2023) modified from Krivokapic-Skoko, O'Neill, and Dowell (2009) were adopted to gauge the effectiveness of the system. To measure the fairness of reward distribution, the remaining five fairness-related components were adopted and used. Out of the 11 indicators, investment in research was utilized to measure employee performance since it had the highest loading value compared to other indicators, with correlation values of 0.8 or less. PLS-SEM, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and descriptive statistics of distribution frequency and percentages were all used in this study's data analysis.

To measure the fundamental structure of the study's components, exploratory factor analysis (EFA) was employed. Additionally, the relationship between observable variables and their underlying latent components was examined using confirmatory factor analysis (CFA). To ensure the reliability of each construct in the study, tests such as Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) were performed. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 25, Jamovi version 2.6.44, and JASP version 0.19.3. This study properly complied with survey research protocols and ethical standards when using human subjects in research.

4. Results and Discussions

Of the 337 questionnaires distributed to the participants, three hundred were recovered. This showed that 89% of respondents responded, whereas 11% did not. Table 1 presents the profile of the responders.

Table 1. Profile of respondents.

Demographic	Categories	Frequency	Percentage (%)
Type of Staff	Academic Staff	220	73.3
	Non-Academic Staff	80	26.7
	Total	300	100.0
Number of Years Worked	Less than 5 years	40	13.3
	6-10 years	49	16.3
	11-15 years	116	38.7
	16-20 years	29	9.7
	21-25 years	40	13.3
	26 years and above	26	8.7
	Total	300	100.0
Marital Status	Married	225	75.0
	Single	75	25.0
	Widowed	0.0	0.0
	Separated	0.0	0.0
	Never Married	0.0	0.0
	Divorced	0.0	0.0
	Engaged to be Married	0.0	0.0
	Total	300	100
Gender	Male	235	78.3
	Female	65	21.7
	Total	300	100.0
Age	21-25 years	4	1.3
	26-30 years	41	13.7
	31-35 years	124	41.3
	36 - 40 years	14	4.7
	41-45 years	42	14.0
	46-50 years	15	5.0
	51-55 years	45	15.0
	56-60 years	15	5.0
	61-65 years	0.0	0.0
	66-70 years	0.0	0.0
	Total	300	100
Education	No Education	0.0	0.0
	Primary Education	0.0	0.0
	Secondary Education	16	5.3
	Polytechnic Education	12	4.0
	Tertiary Education	272	90.7
	Total	300	100

Source: Field Survey, 2022.

It was discovered that 220 responders, or 73.3%, were academic staff. Conversely, 80 respondents, or 26.7%, were non-academic staff. It was found that 116 respondents, or 38.7%, had worked at the University of Abuja for 11–15 years. Those under five, six to ten, eleven to fifteen, sixteen to twenty, twenty-one to twenty-five, and twenty-six and older made up the remaining portion, or 61.3%. Furthermore, 75 respondents, or 25% of the sample, reported being single, whereas 225 respondents, or 75% of the sample, reported being married. However, the same value of 0 or 0% was given to individuals who were widowed, separated, divorced, never married, and engaged to be married.

Two hundred and thirty-five respondents, or 78.3% of the sample, were men, while the remaining 65 respondents, or 21.7% of the sample, were women, according to the data. Furthermore, 124 respondents, or 41.3% of the total, were between the ages of 31 and 35. In contrast, 58.7% of the remaining respondents were between the ages of 21 and 25, 26 and 30, 36 and 40, 41 and 45, 46 and 50, 51 and 55, and 56 and 60 years past the age of sixty. In terms of education, 272 respondents, or 90.7%, had a university degree. In addition, 16 respondents, or 5.3%, had finished secondary school. However, 12 respondents, or 4%, had a degree from a polytechnic.

Table 2 shows the findings of the data adequacy and EFA analysis. To determine the link between the latent and observable variables, an EFA was used. The factor loadings reflect the strength of the relationship between the measured constructs and their corresponding factors. The EFA results can be used to determine the number of factors that best reflect the data. EFA was used to investigate eight elements that measure reward management systems, five components that measure how equitable employees believe rewards are distributed, and eleven factors that measure employee performance.

In this study, the terms factor and element are used interchangeably. Cross-loading of an element rendered the initial EFA insufficient. Factors with loadings of 0.50 or higher should be eliminated from the study if they exhibit cross-loading, as recommended by Costello & Osborne (2005). Consequently, RMS5 was eliminated before conducting another EFA. However, the results of the EFA did not exclude any other factors related to reward management systems, employees' perceptions of equity in reward distribution, or employees' performance conceptions. Only aspects of employees' performance with correlation values of 0.80 or below were included in this

study to address multicollinearity issues. Out of the eleven employee performance indicators, only EP5, EP6, and EP7 exhibited correlation values of 0.8 or less.

Table 2. Exploratory Factor analysis and data adequacy results.

Construct	Code	Factors	Factor Loadings	KMO
Employees' performance (EMP)	EMP1	Quality services	0.770	0.688
	EMP2	Effectiveness	0.848	
	EMP3	Service delivery	0.880	
	EMP4	Productivity	0.921	
	EMP5	Mental production (Decisions)	0.753	
	EMP6	Return to government	0.886	
	EMP7	Investment in research	0.902	
	EMP8	Web ranking	0.891	
	EMP9	Task done	0.922	
	EMP10	Observable action	0.923	
	EMP11	Rate of innovation	0.932	
Employees' perceptions of equity (FDR)	FDR1	This university grants promotions to individuals who merit them.	0.880	0.585
	FDR2	Excellent service is remarkably celebrated by this university.	0.943	
	FDR3	Supervisors acknowledge employees for executing jobs of high quality.	0.929	
	FDR4	The process of performance appraisal is connected to the reward system.	0.868	
	FDR5	Promotions and pay increases depend on the attainment of known performance goals.	0.908	
Reward management systems (RMS)	RMS1	This university does not automatically reward good performance.	0.916	0.754
	RMS2	Employees are content with the recognition accorded to them for executing good works.	0.892	
	RMS3	Exceptional incentives and rewards are provided by management to all employees at each level.	0.807	
	RMS4	Supervisors are open to assist or direct employees.	0.847	
	RMS6	Supervisors utilize the rewards at their disposal to show employees that they have done a good job.	0.888	
	RMS7	Supervisors' expectations from employees regarding the execution of the job are not always clear to them.	0.888	
	RMS8	The standards for job performance evaluation are regularly communicated to employees by the managers.	0.684	

Note: EMP denotes employees' performance.
FDR means fairness in the distribution of rewards.
RMS represents reward management systems.

Therefore, the remaining employee performance elements were eliminated, while EP5, EP6, and EP7 were recommended for additional examination. Additionally, the multicollinearity problem led to the abandonment of FDR2. As a result, every variable under investigation met the correlation criteria of 0.80 or below. The reward management system's construct Kaiser-Meyer-Olkin (KMO) index of 0.767 was higher than the suggested value of 0.6. This demonstrated that common variance accounted for 77% of the variance in the tested variable. Statistical significance was attained through Bartlett's Test of Sphericity (χ^2 413.671, p<0.0000).

This suggests that there were sufficient correlations between the variables under investigation. The data were suitable for factor analysis, according to the KMO and Bartlett's Test of Sphericity indices. Employee performance and perceptions of equity in reward distribution, on the other hand, had KMO indices of 0.688 and 0.585, respectively. Once more, it showed that common variance accounted for 69% and 59% of the variance in the measured variables. They met the 0.6 and higher recommended values. For employee performance, Bartlett's Test of Sphericity achieved statistical significance (χ^2 205.907, p < 0.000). Additionally, employees' opinions of equity in reward distribution passed Bartlett's Test of Sphericity with statistical significance (χ^2 187.567, p < 0.000). It also demonstrated that the connections among the variables under investigation were sufficient.

4.1. Confirmatory Factor Analysis Results

In order to offer a confirmatory test for the components that represent reward management systems, employees' views of equity in reward distribution, and employees' performance constructs, we used the measurement model (CFA). Table 3 shows the outcomes of the validity and reliability tests for the constructs. Employee performance, employee perception of equity, and reward management systems showed Cronbach's alpha values of 0.969, 0.855, and 0.845, respectively, according to the data. For the entire instrument, a Cronbach's alpha score of 0.926 was obtained. Cronbach's alpha values of 0.7 and higher are suitable for determining the internal consistency of the factors (DeVellis, 2003; Nunnaly & Bernstein, 1994). Every construct meets this criterion. There are certain restrictions on using Cronbach's alpha for dependability analysis (Kusumawardhani, 2013). When the set of indicators is not unidimensional, the Cronbach's alpha value misjudges reliability (Danes & Mann, 1984; Hair, Black, & Babin, 2010; Ping Jr, 2004). This is predicated on the nearly irrational assumption that factors have perfect correlation with their fundamental constructs (i.e., no measurement error) in practice (Ping Jr, 2004). Therefore, to provide a reliability scale, CR and the AVE were also calculated in conjunction with CFA. As an alternative to the Cronbach's alpha coefficient, the values of CR and AVE were used to assess scale reliability. Regarding the CR findings, the corresponding values for employee performance, employee impression of equity, and reward management systems were 0.971, 0.926, and 0.943.

According to Hair, Ringle, and Sarstedt (2011), internal consistency should be demonstrated by a CR of at least 0.70. Therefore, the structures in our investigation satisfied the CR value of 0.70, which was the minimum requirement. All values exceeded 0.70. According to Henseler, Ringle, and Sarstedt (2015), construct elements should be removed if their loading values are less than 0.50 following CFA. These values indicate the strength of each factor's relationship to its primary construct. The instrument may be considered invalid if the value is less than 0.50, as it cannot adequately explain the relationship between indicators and latent variables in the structural model. The findings showed that, except for RMS1, RMS2, and RMS7, all factor loadings were above the 0.50 cutoff. RMS1, RMS2, and RMS7 were therefore discontinued.

Nonetheless, construct elements that demonstrated good indicator reliability with loadings of 0.50 and higher were recommended for additional examination. Additionally, it was proven that the factors loaded onto the relevant latent variables and measured the desired outcomes by the significance of the p-values for the constructs of reward management systems, employees' sense of equity, and employees' performance. Employee performance, employee impression of equity in reward distribution, and reward management systems all exhibited AVE values of 0.855, 0.645, and 0.694, respectively. Additionally, Hair and Alamer (2022) advocated for data from any construct to be considered if the AVE value was 0.50 or higher.

Therefore, an AVE value of 0.50 or higher indicates that at least 50% of the variance in the indicators can be explained by the construct. Our research constructs satisfied the AVE criteria of 0.50 or higher. Our instrument's convergent validity can explain the relationship between indicators and latent variables and is valid with factor loadings of 0.5 and higher. As a result, we demonstrate significant convergent validity between employee performance, reward management systems, and employees' perceptions of equity in reward distribution. Convergent validity measures the concept's capacity to explain the variation in its indicators. The relationship between reward management systems and employee performance, as influenced by employees' views of equity in reward distribution, was examined following the validation of these constructs' components. Figure 1 shows the path diagram for this link.

4.2. Structural Model Results

Table 4 evaluated the fit indices. Figure 2 shows the relationship between reward management systems, employees' views of reward distribution equity, and employees' performance. There were connections between the latent variables. Every construct correlated with its corresponding indicator. To determine whether reward management systems, employees' perceptions of equity in reward distribution, and employees' performance support the data, the fit indices were measured. We were surprised by the chi-squared result. It was significant. A sizable sample size is the likely cause of this. When a high sample size is present, there is a chance that the chi-square will be significant. The chi-square value is influenced by the model's complexity and sample size (Kusumawardhani, 2013).

The chi-square value and sample size are positively correlated. According to Kusumawardhani (2013), the chi-square value also increases when more observed variables are included in the model. We examine fit indices other than the chi-square because of this. The tendency of chi-square test statistics to reject models with a large sample or a high number of observable variables has led Byrne (2010) and Hair et al. (2010) to propose that RMSEA is one of the most illuminating indicators of fit. It is preferable to demonstrate that there is no difference between the observed and projected covariance matrices when the chi-square value is low. The better the model fits, the lower the chi-square value. An indicator that the data supports the proposed model is a well-fitting model.

The CFI value of 0.98 indicates a decent fit, showing that 98% of the covariation in the data can be replicated by the model. An RMSEA value of less than 0.05 suggests an excellent fit, whereas values up to 0.08 indicate an adequate fit (Byrne, 2010; Ping Jr, 2004). However, an RMSEA score of 0.20 indicates that the model did not fit well. The maximum standard of 0.08 recommended by Ping Jr (2004) and Byrne (2010) was not met. A satisfactory fit is indicated by the TLI value of 0.98. The SRMR value of 0.12 did not meet the Hu and Bentler (1999) suggested maximum benchmark of 0.08. It is reasonable to conclude that the measurement and structural models did not properly correlate with the data in light of these findings.

Table 3. Constructs' reliability and validity test results.

Construct	Estimate	Cronbach's Alpha	CR	AVE	P-value
EMP	0.889-0.964	0.969	0.971	0.855	< 0.001
FDR	0.683-0.926	0.855	0.926	0.645	< 0.001
RMS	0.773-0.863	0.845	0.943	0.694	< 0.001

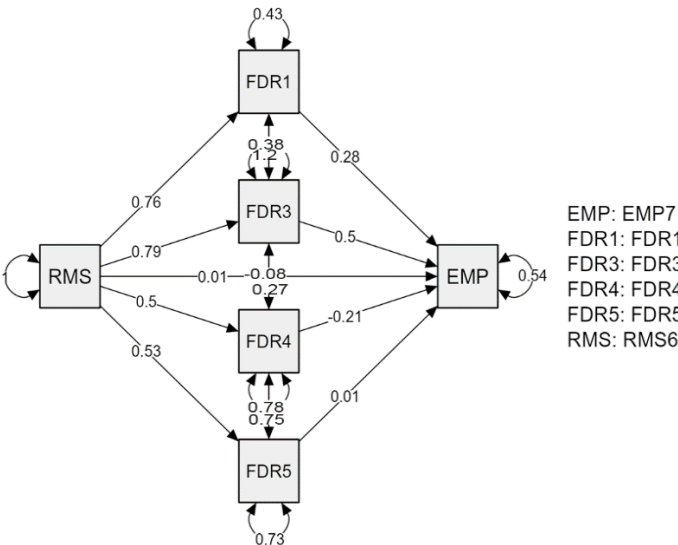**Figure 2.** Structural model for the constructs of investigation.

Table 4. Assessment of Fit Indices.

Fit Indices	Rule	Results
χ^2		201
χ^2 P-value	Should be non-significant	< 0.01
CFI	Should be at least 0.90; ideally 0.95	0.98
TLI	Should be at least 0.90; ideally 0.95	0.98
RMSEA	Should be less < 0.08	0.20
SRMR	Should be less < 0.08	0.12

Where:

$\chi 2$ =Chi-Square value.

CFI =Comparative Fit Index.

TLI =Tucker-Lewis Index.

$RMSEA$ =Root Mean Square Error of Approximation.
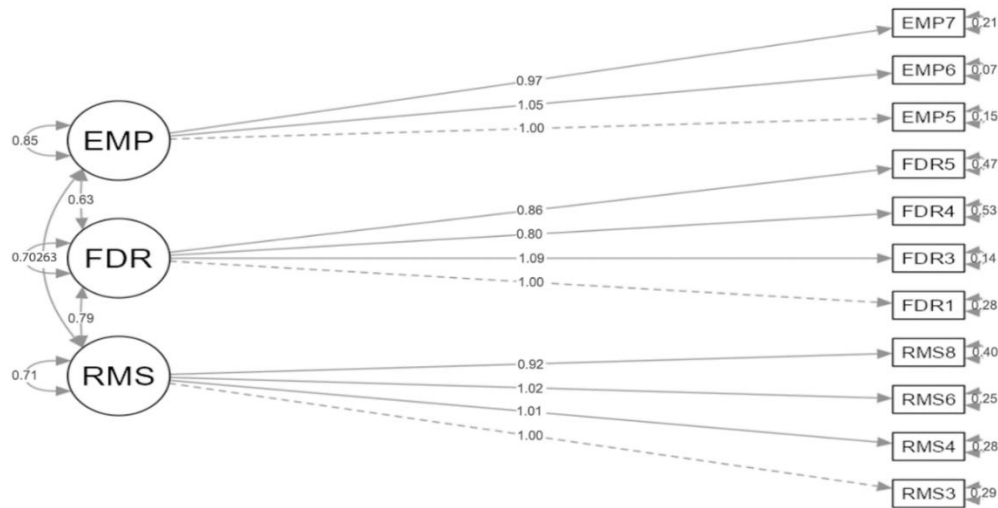
$SPMR$ =Standard Root Mean Square Residual.

Figure 3. Path plot for the effect of reward systems on employees' performance moderated by employees' perceptions of equity in reward distribution.

Figure 3 shows how employees' views of equity in reward distribution mitigate the impact of reward management systems on workers' performance. FDR1, FDR3, FDR4, and FDR5 all mitigated the impact of reward management systems on workers' performance.

4.3. Decision between Full or Partial Mediation

Decision Rule:

a. *If* $\theta =\propto \beta \neq 0$ *and* $\varphi = 0$, *then Full Mediation*

b. *If* $\theta =\propto \beta \neq 0$ *and* $\varphi \neq 0$, *then Partial Mediation*

Moderating Factor: FDR1.

EMP: EMP7
FDR: FDR1
RMS: RMS6

Figure 4. Path plot for the effect of reward systems on employees' performance moderated by FDR1.

Assuming that $\propto = 0.76, \beta = 0.45$ *and* $\varphi = 0.18$ *and* $\theta = obtained\ value$

Thus, $0.76 * 0.45 = 0.342 \neq 0$ *and* $0.18 \neq 0$, *then Partial Mediation*

This is illustrated in Figure 4.
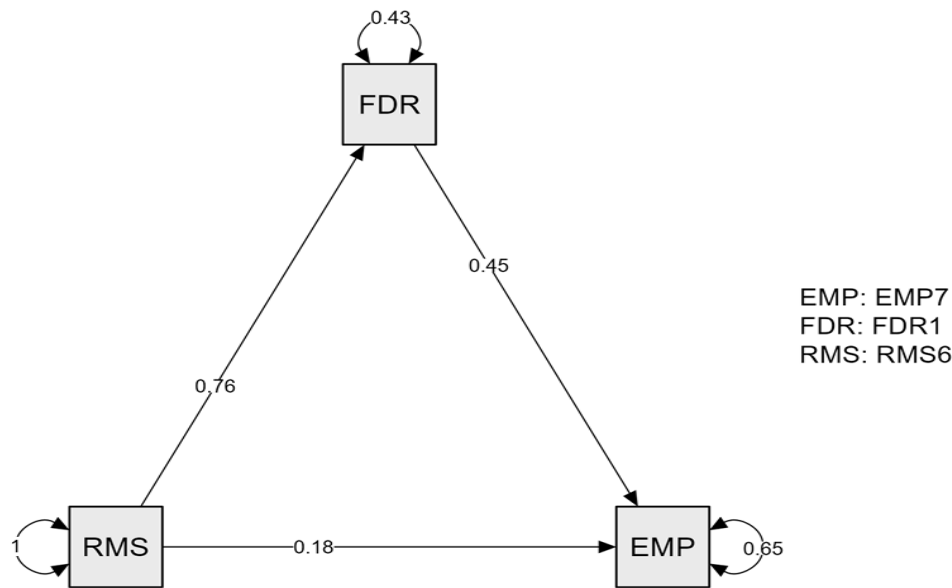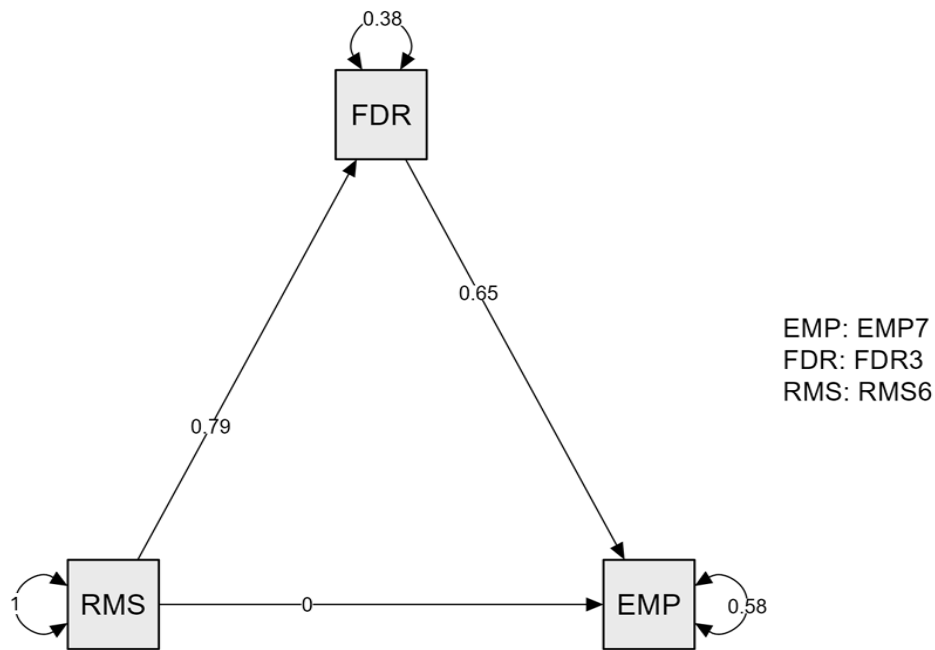
Moderating Factor: FDR3.

Figure 5. Path plot for the effect of reward systems on employees' performance moderated by FDR3.

$$Assuming\ that\ \propto= 0.79, \beta = 0.65\ and\ \varphi = 0\ and\ \theta = obtained\ value$$
$$Thus, 0.79 * 0.65 = 0.5135 \neq 0\ and\ 0 = 0, then\ Partial\ Mediation$$

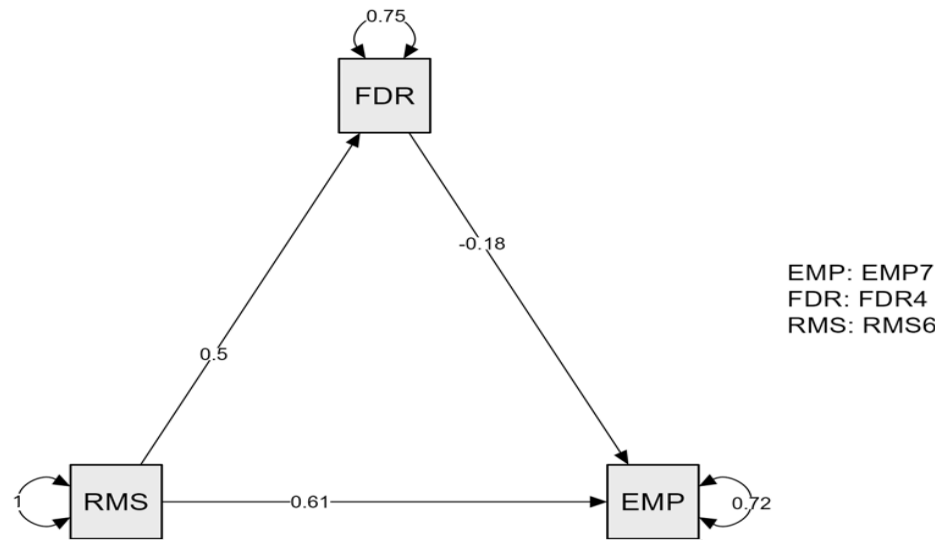This is indicated in Figure 5.

Moderating Factor: FDR4.

Figure 6. Path plot for effect of reward systems on employees' performance moderated by FDR4.

$$Assuming\ that\ \propto= 0.5, \beta = -0.18\ and\ \varphi = 0.61\ and\ \theta = obtained\ value$$
$$Thus, 0.5 * -0.18 = -0.09 \neq 0\ and\ 0.61 \neq 0, then\ Partial\ Mediation$$

This is shown in Figure 6.
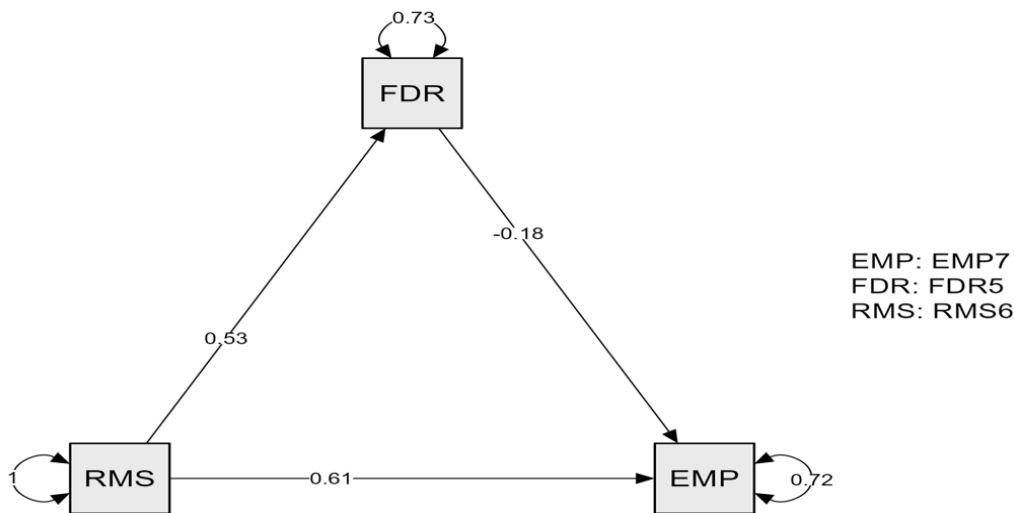
Moderating Factor: FDR5.

Figure 7. Path plot for the effect of reward systems on employees' performance moderated by FDR5.

$$Assuming\ that\ \propto= 0.53, \beta = 0.18\ and\ \varphi = 0.61\ and\ \theta = obtained\ value$$
$$Thus, 0.53 * -0.18 = -0.0954 \neq 0\ and\ 0.61 \neq 0, then\ Partial\ Mediation$$

This is depicted in Figure 7.

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Table 5. Path coefficients results.

Path	β	Std. Error	Confidence Interval		Z	P-value
			Lower	Upper		
FDR1 → EMP7	0.277	0.144	0.038	0.0617	1.929	0.054
FDR3 → EMP7	0.501	0.164	0.142	0.776	3.055	0.002
FDR4 → EMP7	-0.210	0.107	-0.420	0.003	-1.955	0.051
RMS6 → FDR1	0.756	0.040	0.668	0.824	19.046	<0.001
RMS6 → FDR3	0.791	0.047	0.687	0.872	16.860	<0.001
RMS6 → FDR4	0.504	0.084	0.306	0.641	5.995	<0.001
RMS6 → FDR5	0.526	0.071	0.357	0.648	7.373	<0.001

Note: Estimator is ML.
ML is Maximum Likelihood.
Standardised Estimate.

Table 5 displays the results of the path coefficient analysis. Promotions granted by this university to those who deserve them have a positive and significant impact on the University of Abuja staff performance. Employee performance at the University of Abuja was positively and significantly impacted when supervisors recognized staff for doing excellent work. Additionally, the performance of University of Abuja personnel suffered significantly as a result of the performance appraisal procedure, which is linked to the compensation system. The University of Abuja has benefited greatly from reward management systems, which allow advancements to be given to deserving candidates. This is because reward management systems had a positive and significant effect on this university, giving promotions to the individuals who merit them.

Additionally, supervisors at the University of Abuja were able to recognize staff members for performing excellent work thanks to reward management systems. Again, this is because reward management systems had a positive and significant effect on supervisors acknowledging employees for executing jobs of high quality at the University of Abuja. The performance review process at the University of Abuja was positively and significantly impacted by reward management systems. Additionally, promotions and pay increases at the University of Abuja are contingent upon meeting established performance targets, which was confirmed by the positive and significant impact of reward management systems. Promotions and pay increases depend on the attainment of known performance goals at the University of Abuja.

Table 6. Tested hypotheses results.

Hypotheses	Decision
H_{01}: This university gives promotions to the individuals who merit them and has no significant effect on employees' performance at the University of Abuja.	Rejected the null hypothesis
H_{02}: Supervisors acknowledge that employees executing jobs of high quality have no significant effect on employees' performance at the University of Abuja.	Rejected the null hypothesis
H_{03}: The process of performance appraisal is connected to the reward system and does not affect employees' performance at the University of Abuja.	Rejected the null hypothesis
H_{04}: This university does not automatically reward good performance and has no significant effect on supervisors acknowledging employees for executing jobs of high quality.	Rejected the Null hypothesis
H_{05}: Reward systems have no significant effect on this university's promotions to the individuals who merit them.	Rejected the null hypothesis
H_{06}: Reward systems have no significant effect on supervisors acknowledging employees for executing jobs of high quality.	Rejected the null hypothesis
H_{07}: Reward systems have no significant effect on the process of performance appraisal connected to the reward systems.	Rejected the null hypothesis
H_{08}: Reward systems have no significant effect on promotions, and pay increases depend on the attainment of known performance goals.	Rejected the null hypothesis

Table 6 shows the outcomes of the hypothesis that was tested. Based on statistical data, the null hypothesis was rejected in every instance. Promotions are given to deserving candidates by this university and have a significant impact on the University of Abuja staff performance. Employee performance at the University of Abuja was significantly impacted by supervisors praising staff for doing excellent work. Employee performance at the University of Abuja was significantly impacted by the performance appraisal process, which is linked to the reward system.

The fact that this university does not automatically recognize strong performance had a significant impact on supervisors' recognition of workers who do excellent work. This university's reward programs have a significant impact on giving promotions to people who deserve them. Systems of rewards had a significant impact on managers recognizing workers for doing excellent work. The process of performance appraisal is linked to reward systems, and reward systems have a significant impact on it. Promotions and salary raises are contingent upon meeting predetermined performance targets, which were significantly impacted by reward systems.

Table 7. Effect of reward management systems on employees' performance.

Variable	Estimate	Std. Error	P-value
Outcome Variable: EMP			
RMS	0.826	0.050	< 0.001

Table 7 reports on how reward management systems affect workers' performance. The findings showed that reward management programmes had a positive and significant effect on workers' output. This outcome is consistent with Mitalo and Wanyama's (2025) findings.

Table 8. Mediation analysis results.

Effect	Path	β	Std. Error	Confidence Interval		Z	P-value	Conclusion
				Lower	Upper			
Total	RMS6 ⟶ EMP7	0.516	0.076	-0.334	0.657	6.751	<0.001	Not applicable
Indirect	RMS6 ⟶ FDR1 ⟶ EMP7	0.209	0.114	-0.116	0.006	1.844	0.065	Partial
Indirect	RMS6 ⟶ FDR3 ⟶ EMP7	0.396	0.132	0.122	0.637	3.001	0.003	Partial
Indirect	RMS6 ⟶ FDR4 ⟶ EMP7	-0.106	0.059	0.017	0.277	-1.787	0.074	Partial
Indirect	RMS6 ⟶ FDR5 ⟶ EMP7	0.006	0.060	-0.113	0.132	0.106	0.915	Partial
Direct	RMS6 ⟶ EMP7	0.010	0.150	-0.289	0.310	0.068	0.946	Not applicable

Note: Standardised estimate.

Table 8 displays the results of the mediation analysis. EP7, which represents research investment and had a loading value of 0.902, was utilized as a proxy for employee performance in the mediation study, in contrast to EP5 and EP6. However, based on the CFA results, RMS2 and RMS7 with loading values of 0.892 and 0.888 were eliminated, leaving RMS6 with a loading value of 0.888 to be employed as a proxy for reward management systems. The direct effect results demonstrated that reward management systems had a positive and insignificant impact on employees' performance when workers believed their perspective on equity inspired them to perform well.

Furthermore, the results of the indirect effect or mediation effect showed that this university promotes only those who deserve it; FDR1 partially moderates the association between employee performance and reward management systems. Supervisors compensate workers for well-done work; FDR3 partially modifies the relationship between reward management systems and worker performance. Therefore, the relationship between reward management systems and employee performance is partially moderated by employees' sense of equity in reward distribution. This is because, following the removal of FDR2 with a loading value of 0.943 due to multicollinearity issues, FDR3, which had the highest loading value of 0.929, was utilized as a proxy for employees' perceptions of equity in reward distribution.

Additionally, the reward system is linked to the performance appraisal process; FDR4 partially moderates the relationship between reward management systems and employee performance. Furthermore, the achievement of established performance targets is a prerequisite for promotions and pay raises; FDR5 partially moderates the relationship between reward management systems and worker performance. Additionally, the total effect results showed that reward management systems significantly and positively impacted workers' performance. This research suggests that the relationship between reward management systems and employee performance has greatly expanded since employees believe that fairness in reward distribution motivates them to perform well.

5. Conclusion and Recommendations

The results showed that reward management systems had a positive and significant effect on workers' output. The findings of the mediation analysis demonstrated that, when mediated by employees' views of equity in the distribution of rewards, the direct impact of reward management systems on workers' performance was positive but insignificant. Furthermore, the results of the indirect impact, also known as the mediation effect, indicated that the relationship between reward management systems and the University of Abuja personnel's performance is partially moderated by their perceptions of equity in incentive distribution. This finding suggests that using equity as a management technique will have less impact on how reward management systems affect the University of Abuja employees' performance. Additionally, the results of the indirect effect or mediation effect showed that this university promotes only those who deserve it; FDR1 partially moderates the relationship between reward management systems and employees' performance.

Furthermore, supervisors recognize employees for performing high-quality work - FDR3 partially moderates the relationship between reward management systems and employee performance. In addition, the process of performance appraisal is connected to the reward system – FDR4 partially moderates the link between reward management systems and employees' performance. Moreover, promotions and pay increases depend on the attainment of known performance goals – FDR5 partially moderates the association between reward management systems and employees' performance. Additionally, the total effects results verified that the performance of employees was positively and significantly impacted by the reward management system. It is recommended that institutions enhance their performance-based reward system and give staff members opportunities for growth so they can reach their full potential. These findings demonstrate how important it is to implement the right compensation system at the University of Abuja in order to increase staff capacity through equitable reward distribution.

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