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Effect of Performance Appraisal System on Teachers' Performance— Work Motivation as a Mediating Variable

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Abstract

In recent years, the rapid development of university education has fostered a strong correlation between university performance management and the employment and management of university personnel. The effective management and implementation of performance appraisal have emerged as pressing concerns for universities. This study addresses these concerns by selecting H college teachers as a sample and examining the relationship between the performance appraisal system of college teachers and its impact on employee performance. This study introduces work motivation as a mediating variable using empirical research methods. It establishes an analytical model to investigate the relationships among the performance appraisal system, work motivation, and work performance. The findings reveal a significant impact of the performance appraisal system on employee performance. The following conclusions have been drawn by conducting regression analysis on survey data collected from 150 teachers at University H: Firstly, performance appraisal significantly and directly influences employee performance within organisations. Secondly, performance appraisal substantially directly affects employee motivation within organisations. Thirdly, job motivation has a noteworthy direct effect on organisational employee performance. Lastly, employee work motivation mediates the relationship between the performance appraisal system and employee performance. This study contributes to establishing a scientifically grounded and rational performance appraisal mechanism in colleges and universities. Such a mechanism holds immense significance in achieving the ultimate objective of talent cultivation in higher education institutions and enhancing college and university teachers' performance levels and quality.

Keywords: Performance appraisal system, Work motivation, employee performance

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Introduction

Colleges and universities have begun to work on strengthening their teacher performance appraisal and evaluation systems. The research work on teacher performance appraisal system in colleges and universities has achieved remarkable results. Scholars such as Qi, Tan, and Xuchen et al. proposed a Browser/Server (B/S) model-based teacher performance appraisal system. They provided a specific assessment of its operational effectiveness. Lanfen (2019) established an annual performance appraisal system for colleges and universities utilising micro service architecture, simplifying system

construction. Xi (2013) introduced a PHP-based performance appraisal system for university teachers, allowing for operation across multiple platforms and environments.

In another study, YANG and HE (2016) formulated an annual performance appraisal system for university teachers using key performance indicators (KPI) and the analytic hierarchy process (AHP). They aimed to strike a balance between the interests of school administrators and teachers and conducted numerous studies on the effectiveness of performance appraisal for college teachers. Wenshi (2019) analysed the utilisation of the performance appraisal system in terms of authority, objectivity, and fairness. Maharai (2020) evaluated and examined the performance appraisal system by collecting questionnaires from 178 teachers, thereby elucidating its effectiveness.

Researchers have explored various approaches to achieve the intended goals of performance appraisal, a crucial management system. However, examining existing literature shows that most studies have primarily focused on the design and technical aspects. For instance, researchers have proposed enhancing the effectiveness of performance appraisal by refining the scientific indicators used, improving the statistical analysis of performance appraisal data, and strengthening the objectivity of the appraisal process. (Zhixue et al., 2022).

Building upon the preceding analyses, this paper aims to investigate the influence of the performance appraisal system on employee performance and delve into the underlying motivation for improvement. On the one hand, it seeks to analyse the impact of the performance appraisal system on employee performance and elucidate the mechanisms involved. On the other hand, by exploring the interplay between performance appraisal and work motivation, the study aims to gain insights into how the performance appraisal system and employee performance mutually influence each other.

Literature Review

Performance appraisal system

Performance appraisal evaluates and communicates employees' work performance, ideally providing a roadmap for their development (Lin, Horng, Chen, & Tsai, 2018). In this study, performance appraisal pertains to the designated approach for determining and evaluating the actions and achievements of workers.

According to Mani's (2019) study conducted at East Carolina University, employees who experience satisfaction and trust in their supervisor tend to view the appraisal system as a more effective tool for managerial decision-making. Their perception of the system's fairness is not solely based on a project-oriented process. Supporting this perspective, Roberts (2003) emphasizes the significance of employee trust in the fairness of the performance appraisal system. Employees will only accept the results of the system if they have confidence in its transparency and equity. Without such trust, the outcomes become futile, rendering the system ineffective.

Furthermore, Cokin (2021) argues that the performance appraisal system holds importance for organizations as it primarily focuses on fostering employee competency development. Additionally, it builds capacity and enables managers to anticipate and respond to uncertain changes on time proactively. The contemporary trend in performance appraisal is to shift from assessment-based performance appraisal to performance appraisal, aiming to transform the strategic focus of performance appraisal from "settling scores" to "providing guidance" (Liao et al., 2010).

Employee motivation

Motivation encompasses the psychological process of inspiring and directing efforts towards achieving desired outcomes (Hom, Mitchell, Lee, & Griffeth, 2012). For the purposes of this study, the definition provided by Hitt et al. (2019) will be adopted, which posits that motivation refers to the mechanisms through which an employee's behaviours are initiated, guided, and sustained in pursuit of a specific goal.

Furthermore, Yongjian and Guoqiang (2021) conducted a model analysis and discovered that intrinsic motivation significantly influences individual behaviour, leading to increased effort. They also found that intrinsic motivation serves as a substitute for extrinsic motivation, acting as the

foundational driving force behind an individual's efforts. Therefore, it should be the core of the incentive mechanism. Extrinsic motivation, on the other hand, serves as a supplementary factor to intrinsic motivation.

On the other hand, according to self-regulated motivation theory, performance appraisals create a favourable, efficient, and positive interaction and feedback environment. This further strengthens employees' recognition of their ability and autonomy in delivering public services, leading to increased intrinsic motivation. As a result, there is a crowding-in effect of external incentives on internal motivation, fostering a gradual internalization process from external to internal motivation (Kuvaas, 2017).

Regarding the impact of internal motivation on organizational commitment, most researchers argue that internal motivation serves as a prerequisite. However, there are still scholars who contend that organizational commitment can also act as a prerequisite in certain cases (Taylor et al., 2018). Therefore, based on a synthesis of existing literature, a reasonable inference can be drawn. In such cases, the role of performance appraisal as an externally managed incentive is relatively more effective in promoting individual performance. However, the impact of performance appraisal, as an external incentive, on both individual and organizational performance is relatively limited.

Employee performance

Performance encompasses a comprehensive range of meanings. As stated by Bates and Holton (2009), "Performance is a multidimensional construct, and the outcomes will vary depending on the factors being measured." Therefore, to effectively measure and manage performance, it is crucial to establish a conceptual definition. Campbell, McCloy, and Oppler (2017) and other scholars define job performance as the behaviours exhibited by employees in relation to organizational goals. This definition carries three key implications. Firstly, performance is a multidimensional concept, indicating that there is no singular performance variable, and in most contexts, a wide array of behaviours is relevant to organizational goals. Secondly, performance pertains to behaviour rather than solely focusing on outcomes. Lastly, these behaviours are under the control of the employee. A proper understanding of performance serves as the foundation for subsequent performance appraisal and forms an integral part of performance management.

To ensure competitiveness, organizations must achieve their goals with productivity and effectiveness (Frese, 2012). Employee performance appraisals serve as a means to assess the extent to which an individual has fulfilled their job responsibilities and the quality of their work. Performance appraisal is a fundamental element in organizations to ensure that employees achieve and surpass performance expectations. Through measures like responsiveness and customer satisfaction, the success of employees can be evaluated both quantitatively and qualitatively (Ali & Opatha, 2018).

Performance appraisal system and employee performance

Performance appraisal is a critical practice in human resource management, functioning to motivate and regulate employee work behaviours, thereby enhancing organizational performance. Although empirical research on the direct impact of performance appraisal on organizational performance is limited, scholars have provided evidence of the close relationship between performance appraisal and organizational performance. Some studies have explored the influence of developmental performance appraisal on specific aspects of organizational performance. In contrast, others have examined the impact of performance management and human resource activities incorporating performance appraisal characteristics. For instance, Minglei and Desheng (2021) surveyed 472 enterprises and found that performance appraisal can facilitate open innovation performance in science and technology-based SMEs. Peiguan and Tingting (2009) demonstrated that development-oriented performance appraisal promotes employee cooperation, fostering positive interpersonal interactions and enhancing team performance. Similarly, Shanshi et al. (2017) investigated high-tech companies. They discovered that organizations adopting a commitment-based HR management system outperform those with a control-based HR management system in terms of operational and

innovation performance. High-performance work systems generate collective human capital and foster extensive social exchange within the organization, which correlates positively with overall organizational performance (Takeuchi et al., 2007). Both committed HR management systems and high-performance work systems prioritize the "employee," emphasizing the emotional connection between the employee and the organization and the employee's skills and efforts. These characteristics align with the managerial focus of performance appraisals, which emphasize employee development through effective communication, feedback, and targeted training opportunities. In light of this, the present study puts forth the following hypotheses:

H1: The performance appraisal system is significantly and positively related to employee performance.

Performance appraisal system and Employee Motivation

Based on the review of the literature, it is evident that specific organizations express dissatisfaction with their performance appraisal systems. This suggests that the existing system may not effectively enhance employee motivation within the organization (Rue & Byars, 2015). Hence, it is imperative to prioritize the development of a well-designed performance appraisal system that can positively influence employees.

Motivation is a psychological process that influences human actions. It is not solely determined by external comments or behaviours, and it is not an inherent characteristic. Performance appraisal serves as a mechanism for assessing and communicating employee performance. It provides insights into the workflow, job roles, and how employees fulfil their responsibilities. The appraisal is crucial for organizational management regarding future planning, as it identifies training needs and facilitates employee development plans (Rue & Byars, 2015). Furthermore, effective performance appraisal is an integral component of successful human resource management in an organization (Bach & Sisson, 2010).

The primary objective of performance appraisal is to encourage employees to enhance their existing performance, as their motivation to improve is influenced by their improvement behaviour. Performance improvement motivation refers to the strength of employees' drive to enhance their performance following a performance appraisal. When performance evaluation is primarily based on the relationship instead of the employee's actual performance, the correlation between work results and appraisal outcomes weakens. Consequently, employees may not prioritize behaviours that genuinely improve performance, and they may not exert efforts in actions that can enhance their performance. Therefore, according to expectancy theory, individual motivation for performance improvement is naturally weaker in organizations with higher reliance on relational practices. Building on the analysis above, this study presents the following hypotheses.

H2: The performance appraisal system is significantly and positively related to employee motivation.

Employee work motivation and employee performance

Employee motivation plays a significant role in shaping employee performance. Rudman (2013) asserts that employees with high work motivation are likelier to achieve high performance. Conversely, employees with low work motivation often exhibit subpar performance. The enhancement of employee performance within an organization heavily relies on the effectiveness of the performance appraisal system implemented. It is crucial to note that utilizing inadequate performance appraisal systems can detrimentally affect employee performance and motivation.

Extensive research has been conducted to explore various factors influencing employee performance. These factors encompass performance appraisal systems, intra-organizational communication, and employee motivation (Rarung et al., 2015; Udayanto et al., 2015; Munthe and Tiorida, 2017; Cinintya, 2019). Likewise, studies examining the relationship between employee performance and intra-organizational communication reveal that effective internal communication management can positively influence employee performance and promote job engagement (Cinintya, 2019). Furthermore, research focusing on the connection between employee performance and work motivation has consistently highlighted the significant influence of high levels of work motivation

on employee performance (Udayanto et al., 2015; Munthe and Tiorida, 2017). Artha and Sari (2015) suggest that work motivation is the most critical factor impacting employee performance. Additional studies by Komara and Nelliawati (2014), Ananda and Sunuharyo (2018), and Irvan and Heryanto (2019) have demonstrated that job motivation serves as a mediating variable with other factors. Building upon these observations, the following hypothesis is proposed:

H3: Employee motivation has a significant and positive relationship with employee performance.

Performance appraisal system on employee performance through motivation

Performance appraisal standards play a crucial role in the performance appraisal system as they encompass measures of job performance and rating scales for assessing that performance. These standards serve as a foundation for managers to evaluate employees and can impact how employees embrace performance appraisal results. A study conducted by Luo Xinxing et al. (2022) found that performance appraisal standards significantly influence perceptions of procedural fairness and organizational commitment. The effectiveness of performance appraisal standards can be understood through three dimensions: indicator specificity, relevance, and standard consistency. Specifically, the concept of "performance appraisal indicator specificity", defined by Luo Xinxing et al. can be applied as the evaluation index for "measurability of appraisal standards" in this study. This refers to how performance appraisal standards enable appraisers to assess employees' actual performance in a concrete and quantifiable manner.

Based on Denisi and Pritchard's (2010) motivational model rooted in expectancy theory, it is suggested that performance appraisals positively impact motivation to improve performance when employees perceive a strong connection between their performance and appraisal scores. Additionally, measurable performance appraisal standards significantly convey organizational performance expectations to employees, outlining specific goals and directions to guide their efforts. The stronger the clarity of these standards, the more robust the association between employees' exerted effort and high-performance appraisal ratings. Building upon this understanding, the following hypothesis is posited:

H4: Employee Work Motivation Mediates the Positive Effects of Performance Appraisal Systems on Employee Performance.

Research Methodology

Sample Data

This study focuses on full-time teachers at University H who are actively involved in teaching and research activities. University H is a renowned institution with a rich academic history, a comprehensive range of disciplines, distinct professional characteristics, and a profound cultural legacy. The university boasts a faculty of over 1600 teachers, including more than 300 professors and 500 associate professors.

To gather data, questionnaires were distributed using two methods: on-site distribution and network e-mail distribution. 160 questionnaires were distributed, and all 160 were successfully collected. After screening, 157 questionnaires were deemed valid, resulting in an impressive effective response rate of 98.1 percent.

Among the valid questionnaires, there were 87 male respondents and 80 female respondents. All participants possessed a minimum educational qualification of a master's degree, with 52 holding master's degrees and 102 having post-doctoral, doctoral, or in-study qualifications. The distribution of academic titles was as follows: 8 assistant professors, 48 lecturers, 65 associate professors, and 36 professors. Additionally, 22 participants held administrative positions, while 135 held no administrative roles. To ensure data validity, the questionnaire distribution process considered the participants' diverse professional backgrounds. This study employed a quantitative research method to analyze the collected data.

Measurement Scale

The Performance Appraisal System Scale, adapted from Towne (2006), was employed to assess the effectiveness of performance appraisal. This scale utilizes a five-point Likert scale, ranging from "strongly agree" (5) to "strongly disagree". The scale comprises five items, demonstrating a high level of internal consistency with a reliability coefficient (alpha) of 0.93.

The Motivation Scale, adapted from Lawter and Kopelman (2015), assessed employee motivation. This scale has been widely used and validated in previous studies. Four items that align with the research objectives were selected for this study. The pilot survey results indicate that the chosen items exhibit good internal consistency reliability and structural validity comparable to the original scale. The alpha coefficient for work motivation in this study is 0.84, indicating a satisfactory level of internal consistency.

The Work Performance Scale utilized in this study was derived from the comprehensive four-dimensional performance scale developed by Han (2016). The scale assesses various dimensions of work performance, including task performance, relationship performance, innovation performance, and learning performance. The scale consists of a total of 24 items. The internal consistency of the scale was evaluated using Cronbach's α coefficient, which yielded a value of 0.862, indicating a high level of reliability.

Control variables play a crucial role in research studies, and previous literature has indicated that demographic characteristics such as gender, age, education, position, and job title are commonly used as significant control variables. Accordingly, in this study, gender, age, education, and working hours were chosen as control variables to examine the specific impact of performance appraisal system orientation on job performance, after accounting for the influence of these demographic factors.

Theoretical Framework

This study examines the relationship between performance appraisal systems and employee performance and the influence of performance appraisal systems on work motivation. Additionally, it explores the positive effect of work motivation on performance and investigates the mediating role of work motivation in the relationship between performance appraisal systems and employee performance. Based on the analyses above, the proposed hypothetical model is illustrated in Figure 1.

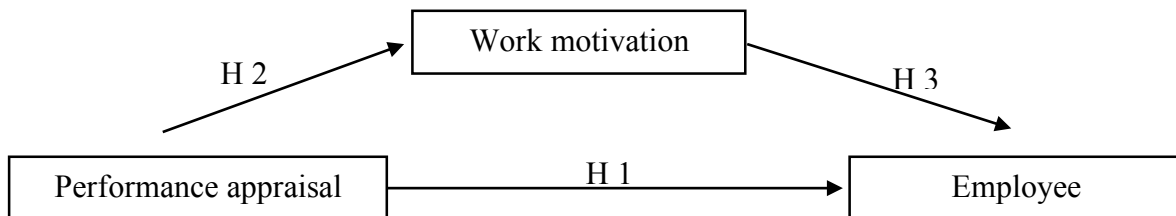


Figure 1 Theoretical Framework

Reliability Analysis

SPSS 27.0 and Amos 24.0 were used to analyse the collected data statistically. Firstly, validated factor analysis and discriminant validity tests were conducted on the measured variables of the study; then, descriptive statistics and correlation analyses were conducted; and finally, the study's hypotheses were tested using the multilevel linear model and the total effects moderation model.

Reliability test of the scale

The reliability of the questionnaire as a whole and each dimension was tested using SPSS27.0 Chinese version. The Cronbach's alpha (α) coefficient of the Performance Appraisal System Scale was 0.817, the Cronbach's alpha (α) coefficient of the Work Motivation Scale was 0.800, and the Cronbach's alpha (α) coefficient of the Employee Performance Scale was 0.713. The items with loading factors less than 0.5 were excluded. Cronbach's α (Cronbach's α) coefficient of 0.713, excluding the items with loading factor less than 0.5, the Cronbach's α (Cronbach's α) coefficient of

the overall scale of the retained questionnaire is 0.857, which indicates that the internal consistency of the questionnaire is good.

Validity test of the scale

Validity tests of scales generally include exploratory factor analysis and validation factor analysis.

(1) Exploratory factor analysis

The results of exploratory factor analysis show that the KMO value of performance appraisal system is 0.833, the approximate chi-square value of Bartlett's (Bartlett) spherical test is 200.130, the value of degrees of freedom df is 10, and the p-value is < 0.001 ; the KMO value of performance motivation is 0.741, the approximate chi-square value of Bartlett's (Bartlett) spherical test is 180.495, and the value of degrees of freedom df is 6, and the p-value is < 0.001 ; the KMO value of employee performance is 0.741, and the value of employees' performance is 0.741. The KMO value of employee performance is 0.736, the approximate chi-square value of Bartlett's sphericity test is 92.813, and the df value of the degree of freedom is 6, with a p-value of < 0.001 ; Table 1 shows that the KMO value of the questionnaire as a whole is 0.797, and the approximate chi-square value of Bartlett's sphericity test is 577.303. The KMO value of the questionnaire as a whole is 0.797, the p-value of the questionnaire as a whole is 0.797, and the p-value of the questionnaire as a whole is 0.797. Table 1 shows that the overall KMO value of the questionnaire is 0.797, the approximation of Bartlett's test of sphericity is 577.309, and the df value of the degree of freedom is 78, with a p-value of < 0.001 . The KMO values of the questionnaire as a whole and of each dimension are all greater than 0.7, and the items whose CITC values of the factors are all greater than 0.5 have passed the test of significance at the significance level of 1 per cent. Therefore, the sample data of the questionnaire is very suitable for exploratory factor analysis (EFA) (see Table 1).

Table 1 Overall scale KMO and Bartlett's test

Kaiser-Meyer-Olkin measure of sampling adequacy	0.797
Bartlett's test of sphericity approximate chi-square value	577.309
df	78
Sig.	< 0.001

EFA was performed using SPSS software, and the factor loading matrix was obtained using principal component analysis. The rotated component matrix was obtained by orthogonal rotation through the maximum variance method. From the data in Table 2, we can see 3 factors with factor loadings greater than 0.5 and eigenvalues greater than 1, and the total cumulative explained variance is 58.850%. This indicates that it is more appropriate to extract three factors from the 13 questions for analysis.

Table 2 Rotated component matrix

	ingredient		
	1	2	3
Benefits for the organization	0.819		
Validity of the instrument	0.796		
Instrument reliability	0.704		
Fairness of measurement	0.671		
Benefits for employees	0.649		
Enjoy working		0.855	
Have a plan and goals		0.827	
Response and responsibility		0.727	
Enjoy challenges		0.637	
Task Performance			0.781
Relationship Performance			0.758
Innovation Performance			0.703
Learning Performance			0.546

Extraction method: principal components.

Rotation method: orthogonal rotation with Kaiser normalisation.

a: Rotation converges after 5 iterations.

Validated factor analysis

Through exploratory factor analysis (EFA), 3 factors were obtained, and to get a more accurate theoretical structure of indicator weights, the data were tested for structural validity, convergent validity and discriminant validity using validated factor analysis (CFA). Establishment The validation factor analysis model is shown in Figure 2.

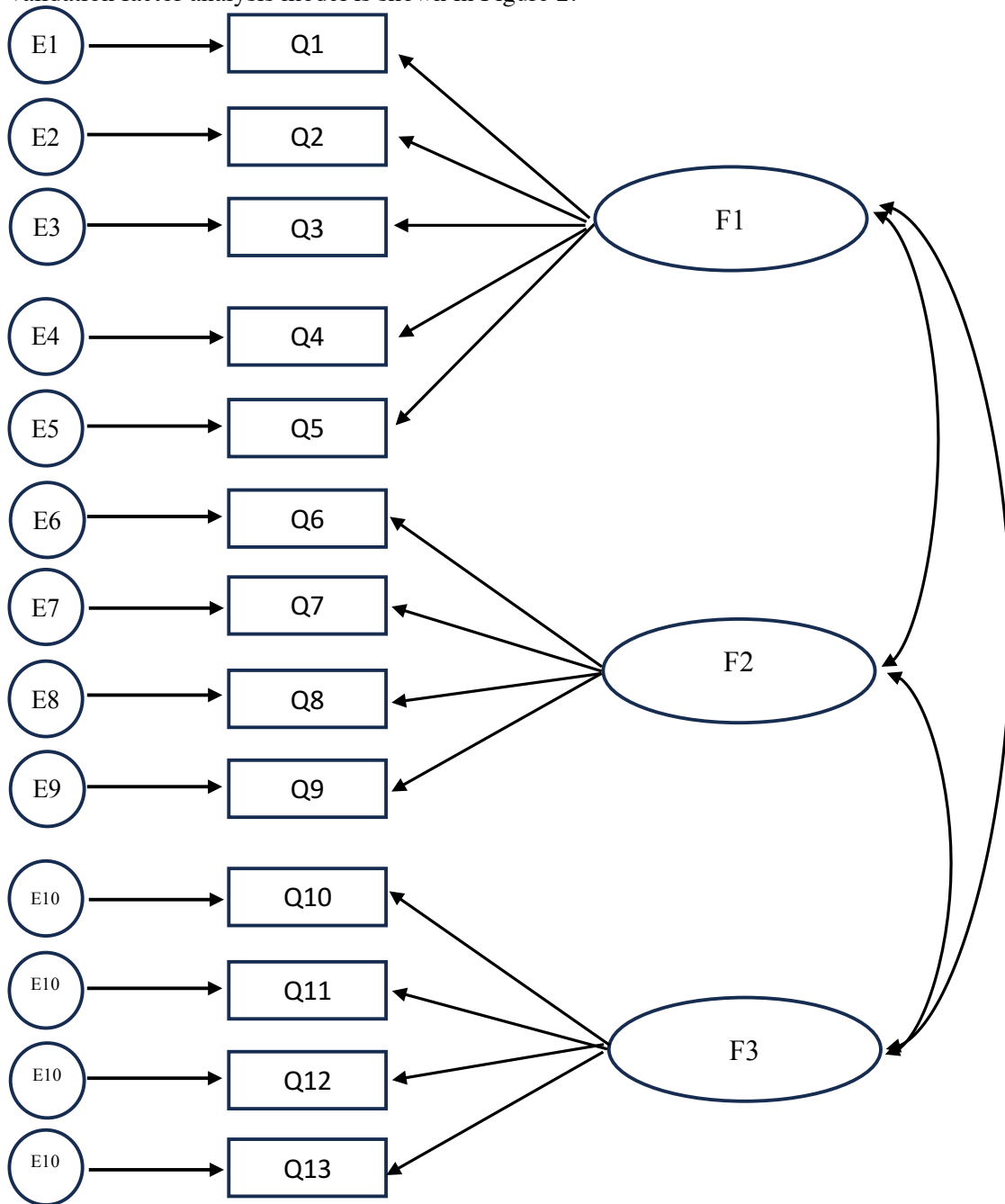


Figure 2 Validated factor analysis model

The fitness test of the model as a whole is shown in Table 3, which shows that the RMSEA value is 0.049, the IFI value is 0.965, the TLI value is 0.954, the CFI value is 0.964, the GFI value is 0.920, the PNFI value is 0.688, and the CMIN/DF value is 1.306. Overall, the indexes' values reach the model's acceptable standards, indicating that the validated factor analysis model is a good fit with the actual measurement data. The factor analysis model is well adapted to the actual measurement data. The output results of the validated factor analysis model are shown in Figure 3.

Table 3 Overall fit coefficients (structural validity)

Norm	RMSEA	IFI	TLI	CFI	GFI	PNFI	CMIN/DF
Measured value	0.049	0.965	0.954	0.964	0.920	0.688	1.306
Recommended value	<0.08	>0.9	>0.9	>0.9	>0.9	>0.5	1~3

The collated questionnaire data were imported into AMOS 24.0 software for path analysis. The factor loadings (standardised) of each observed variable were obtained from the data in Table 4. The combined reliability of the three latent variables is 0.719, 0.810, 0.819, respectively, which is greater than 0.6 and meets the judgement condition. The average variance extracted (AVE) of the three latent variables is 0.394, 0.525, 0.478, respectively, greater than 0, i.e., the convergent validity is greater than 0. It is smaller than the combined reliability, which meets the judgement condition, and the model has good intrinsic quality. In summary, the intrinsic quality of the model is good.

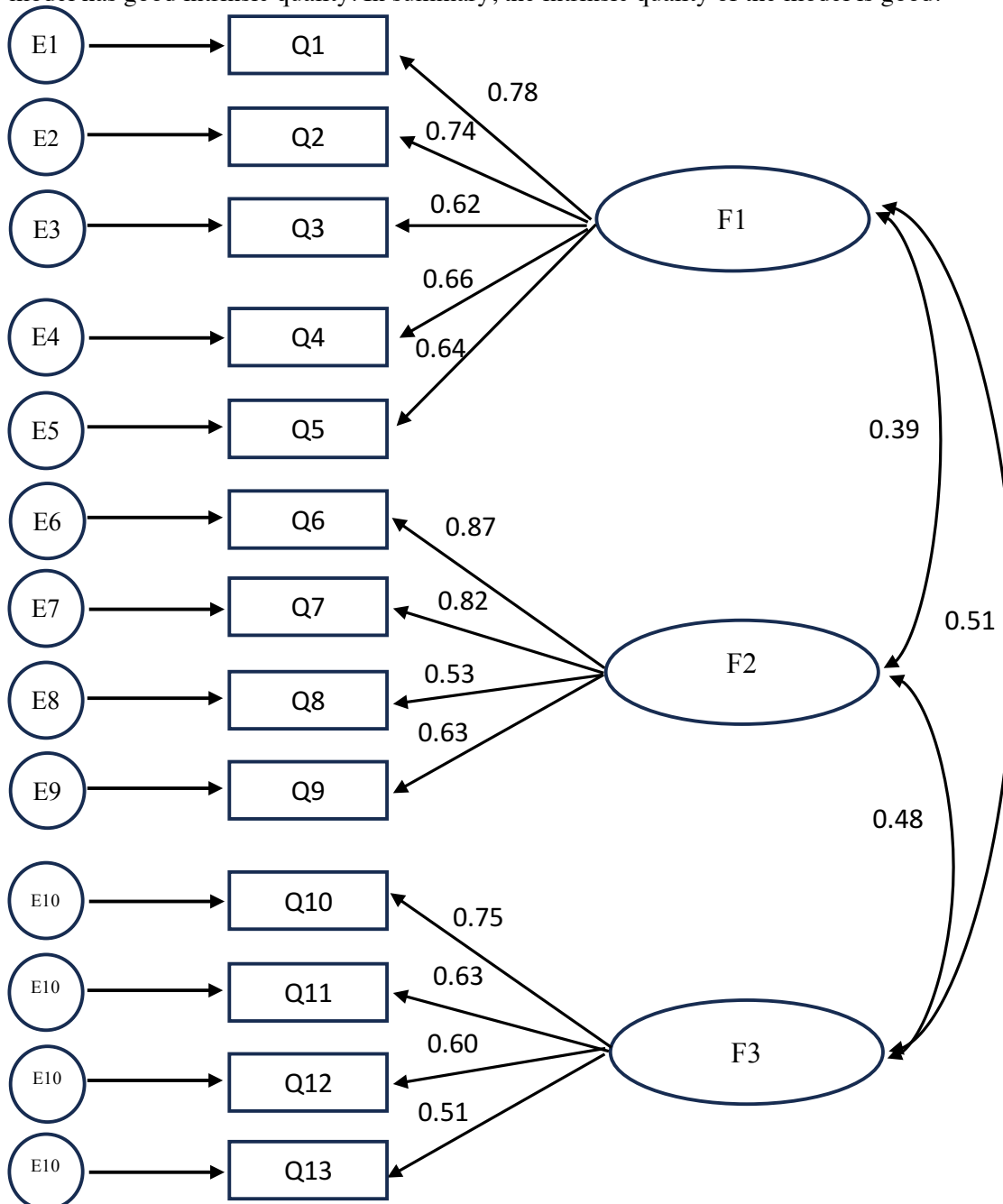


Figure 3 Validated factor analysis model

Table 4 Factor loadings (convergent validity)

Trails		Factor loading value Estimate	Mean-Variance Extraction AVE	Combinatorial reliability CR
Q1	←	Performance appraisal system	0.781	0.819
Q2	←	Performance appraisal system	0.742	
Q3	←	Performance appraisal system	0.616	
Q4	←	Performance appraisal system	0.659	
Q5	←	Performance appraisal system	0.633	
Q6	←	Work motivation	0.868	0.810
Q7	←	Work motivation	0.819	
Q8	←	Work motivation	0.527	
Q9	←	Work motivation	0.632	
Q10	←	Employee performance	0.752	
Q11	←	Employee performance	0.627	0.719
Q12	←	Employee performance	0.596	
Q13	←	Employee performance	0.508	

As shown in Table 5, there is a significant correlation between performance appraisal system, performance motivation and employee performance. The absolute value of the correlation coefficient is less than 0.5 and less than the square root of the corresponding AVE, which indicates that each latent variable has a specific correlation with each other and a certain degree of differentiation, i.e., the scale data have a satisfactory degree of differentiation. The absolute value of the correlation coefficient is less than 0.5 and less than the square root of the corresponding AVE, indicating that each latent variable has a certain degree of correlation and a certain degree of differentiation between them, i.e., indicating that the differentiation validity of the scale data is ideal.

Table 5 Distinguishing Validity

	Performance appraisal system	Work motivation	Employee performance
Performance appraisal system	0.478		
Work motivation	0.037**	0.525	
Employee performance	0.042**	0.039**	0.394
AVE square root	0.691	0.724	0.628

** Indicates significant correlation at the 0.01 level (two-sided); diagonal lines are AVE values.

Data analysis

Descriptive analysis

From the data in Table 6, the absolute value of skewness is less than the threshold value of 3, and the absolute value of kurtosis is less than the threshold value of 10. The research data are considered to be close to normal distribution. The mean value of the performance appraisal system and employee performance is greater than 3.3, indicating a medium level of the performance appraisal system and employee performance in a university group. The results of one-way ANOVA on the control variables gender, education, and working hours show no significant difference in the research variables on the control variables.

Table 6 Descriptive statistics of latent variables

Latent variable	N	Average value	(statistics) standard deviation	Skewness		Kurtosis	
				Statistic	Standard error	Statistic	Standard error
Performance appraisal system	130	3.332	0.688	-0.442	0.212	-0.293	0.422
Work motivation	130	3.450	0.763	-1.071	0.212	1.447	0.422
Employee performance	130	3.365	0.665	-0.780	0.212	0.856	0.422
Valid N (list status)	130						

Related analyses

The correlation analysis of the variables was carried out to obtain the correlation coefficients, which can be seen in Table 7. The performance appraisal system and performance motivation showed a significant positive correlation ($r = 0.374$, $p < 0.01$), the performance appraisal system and employee performance showed a significant positive correlation ($r = 0.499$, $p < 0.01$), and the performance motivation showed a significant positive correlation with the performance of the employees ($r = 0.486$, $p < 0.01$), indicating that the results of correlation analysis between variables are basically consistent with the hypotheses.

Table 7 Correlation between variables

	Sex	Age	Academic qualifications	Working hours	Performance appraisal system	Work motivation	Employee performance
Sex	1						
Age	-0.258**	1					
Academic qualifications	0.117	0.064	1				
Working hours	-0.069	0.775*	0.004	1			
Performance appraisal system	0.085	-0.066	-0.013	-0.132	1		
Work motivation	0.078	0.184*	-0.032	0.255**	0.374**	1	
Employee performance	-0.024	0.008	0.1	-0.114	0.499**	0.486**	1

** indicates a significant correlation at the 0.01 level (two-sided).

* indicates a significant correlation at the 0.05 level (two-sided).

Hypothesis testing

Through the correlation analysis, we have an overall understanding of the relationship between the variables and use PROCESS for regression analysis of the data. From the data in Table 8, it can be seen that the performance appraisal system has a significant positive effect on employee performance, and its regression coefficient is 0.3557 ($p < 0.01$), so the research hypothesis H1 is verified. Performance appraisal system has a significant positive effect on work motivation, and its regression coefficient is 0.414 ($p < 0.01$), so the research hypothesis H2 is verified. Work motivation has a significant positive effect on employee performance, and its regression coefficient is 0.304 ($p < 0.01$), so research hypothesis H3 is verified.

Table 8 Mediation model test for work motivation

	Work motivation			Employee performance		
	B	t	P	B	t	P
Performance appraisal system	0.414	4.560**	<0.001	0.357	4.798**	<0.001
Work motivation				0.304	4.529**	<0.001
R2		0.140			0.354	
F		20.791**			34.746**	

** indicates a significant correlation at the 0.01 level (two-sided).

From the data in Table 9, the total effect value of the performance appraisal system on employee performance is 0.482, 95% confidence interval [0.336, 0.629], excluding 0 significant results. The indirect effect value of work motivation between the performance appraisal system and employee performance is 0.126, 95% confidence interval [0.043, 0.234] excluding 0. The results are significant, and when performance motivation is used as a mediating variable, the direct effect value of the performance appraisal system on employee performance is 0.357, 95% confidence interval [0.210, 0.504], excluding 0. The results are significant. It shows that work motivation has a partial mediating role between the performance appraisal system and employee performance, and the indirect effect amount is 26.08%, and hypothesis H4 is verified.

Table 9 Breakdown of total, direct and mediating effects

	Efficiency value	Standard error	Lower limit	Limit	Relative effect value
Direct effect	0.357	0.074	0.210	0.504	73.92%
Indirect effect	0.126	0.050	0.043	0.234	26.08%
Aggregate effect	0.482	0.074	0.336	0.629	

Conclusion

This research aims to address this gap by utilizing a questionnaire survey to examine the performance appraisal system, employee work motivation, and employee performance among university employees. The study employs correlation analysis and regression analysis techniques to explore the interaction mechanism between these variables. The findings of this study contribute to a deeper understanding of the relationship between these factors. The following conclusions were derived from the analysis.

Performance appraisal system has a significant positive impact on employee performance

The above study shows that the performance appraisal system has a significant impact on employee performance. A favourable perception of the performance appraisal system has been found to enhance employee performance. This finding aligns with Agustina's (2013) research, which revealed that the principles of performance appraisal, including measurement validity, reliability, fairness, and employee benefits, positively influence employee performance appraisal outcomes.

Performance appraisal systems significantly influence employee performance. When employees recognize that measurements can contribute to organizational considerations such as promotion and benefits provision, their perceptions of the organization's performance appraisal system become more positive. Consequently, this positivity translates into heightened productivity among employees. The outcomes of this study align with the findings of Rarung (2015), Gustiawati (2015), Idowo (2017), and Mbiti (2019).

Performance appraisal system has a significant positive effect on employee motivation

The measurability of a performance appraisal system holds significant influence over the perception of fairness in performance appraisals and can enhance employee motivation. Enhancing the

measurability of performance appraisal criteria leads to notable improvements in employee motivation. These findings indicate that a well-designed performance appraisal system can significantly enhance the effectiveness of the appraisal process.

These findings are consistent with Gustiawati's (2015) study, which demonstrated that an organization's adherence to the principles of objectivity, measurability, accountability, participation, and transparency in performance appraisal can shape employees' attitudes towards the appraisal system. Consequently, employees perceive the implemented performance appraisal system as valid, reliable, and fair, benefiting both the organization and its employees.

6.3 Employee motivation has a significant positive effect on employee performance

According to the results of the research hypothesis, the effect of work motivation on employee performance is positive and significant. In this study, the degree of influence of job motivation on employee performance is relatively high. These results indicate that high employee motivation increases employee productivity at work. It has been proved that high employee motivation is reflected in work behaviours such as always working with plans and goals, being responsive and responsible for their work, being creative and innovative in their work, and being willing to carry out any task that falls within the purview of their position, which has an impact on the results of employee performance appraisal.

The results of this study are supported by previous studies such as Komara and Nelliawati (2014), Afianti (2018), Fachreza (2018), Simanjuntak (2018), Irvan and Heryanto (2019), Parashakti (2019), Parshetty (2019) and Kuswati (2020). These studies reveal that increased work motivation improves employee performance in terms of quantity and quality of work, i.e., improves employee performance.

Motivation has a mediating role between performance appraisal systems and employee performance

Research indicates that performance appraisal systems have the potential to impact employee performance. Work motivation plays a crucial role in enhancing employee performance. The data analysis conducted in this study reveals that increased employee acceptance of the performance appraisal system correlates with improved employee performance. These findings are consistent with previous research by Udayanto (2015), Abdurrahman (2018), and Khan et al. (2020). Previous studies have also established that strong work motivation among employees facilitates efficient task coordination, resulting in improved employee performance.

The study demonstrates that work motivation significantly influences employee performance. Moreover, employees' recognition of the organizational appraisal system also impacts their performance. The findings suggest that the performance appraisal system and work motivation contribute to employee performance. The R-Square value of this study indicates that performance appraisal systems and job motivation significantly influence employee performance. These results align with the findings of Abdurrahman (2018) and Gustiawati (2015), emphasizing the mediating role of work motivation between the performance appraisal system and employee performance.

Management Recommendations

This study falls within Human Resource Management (HRM), aiming to investigate the factors influencing employee performance. Specifically, the analysis centres on the impact of performance appraisal systems and job motivation on employee performance. The findings offer valuable insights into the field of HRM, shedding light on crucial aspects that shape employee performance.

7.1 Improve the unit staff training and promotion system

The core competitiveness of any unit is talent. Through the unit's performance appraisal system can improve the staff's business level, strengthen the staff's knowledge structure, professional skills, management skills and other aspects of the short board, and effectively improve staff performance. First, improve the training content, with demand as the entry point, focusing on training effectiveness. The second is to refine the training content, formulate diversified training content in

an all-around way, and make independent choices according to the unit arrangements and individual needs.

Establishing an effective feedback system

A crucial aspect of performance appraisal is incorporating a two-way communication mechanism. Therefore, during the implementation process, it is essential to prioritize timely feedback on assessment results. This approach encourages active employee participation, stimulates meaningful engagement with the evaluation outcomes, and enhances their enthusiasm and confidence in participating in the performance appraisal process. By fostering a sound feedback system, organizations can create an environment that promotes open dialogue and continuous improvement.

Prioritizing promotion incentives

To fully leverage the potential of promotion incentives, it is crucial to integrate the personal growth of employees with the development of the organization. This can be achieved by enhancing the career promotion system. Clear promotion criteria and conditions should be established, ensuring the organization communicates the pathways and prerequisites for promotion. This transparency enables employees to clearly understand the requirements for advancement and their corresponding job responsibilities, facilitating their pursuit of career goals. Moreover, establishing a flexible channel for upward and downward mobility ensures that employees who may experience a decline in overall competence are promptly reassigned. At the same time, those with outstanding abilities are promoted on time. This approach ensures the availability of an open and accessible channel for upward and downward career progression.

Research Limitations and Perspectives

This empirical study focuses on personnel from University H. It aims to quantify the performance appraisal system, employee work motivation, and employee performance within the unit. The study provides valuable insights for managers regarding the performance status of unit employees and offers perspectives on effective performance improvement. Additionally, a model was developed to examine the relationship between performance appraisal and employee performance, considering the mediating role of employee work motivation within the performance appraisal system. This research contributes to a deeper understanding of the dynamics between these variables and provides practical implications for enhancing employee performance.

While this study strives to maintain scientific rigour in its research, design, and analysis, certain limitations and shortcomings are inevitable. Firstly, the sample size is relatively small due to the limited number of personnel within the unit. As a result, only 157 valid questionnaires were obtained for this paper. Future research can address this limitation by expanding the study to include other units, thus compensating for this deficiency. Secondly, the survey content may not be fully comprehensive. Considering the impact of questionnaire length on employee motivation to complete it, the questionnaire was condensed, excluding some aspects related to employees' psychological activities. Subsequent research should explore additional mediating variables preceding performance appraisal and employee performance to elucidate the internal mechanisms between the two better.

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