BAR Brazilian Administration Review

ANPAD

Research Article

Promoting Performance Measurement System Effectiveness in Higher Education Institution: Antecedents and Consequences

Ietje Nazaruddin[1], Hafiez Sofyani[1], Tiyas Puji Utami[2]

[1] Universitas Muhammadiyah Yogyakarta, Faculty of Economics and Business, Department of Accounting, Yogyakarta, Jawa, Indonesia
[2] Universitas Muhammadiyah Yogyakarta, Directorate of Postgraduate Program, Master's of Accounting, Yogyakarta, Jawa, Indonesia

How to cite: Nazaruddin, I., Sofyani, H., & Utami, T. P. (2024). Promoting performance measurement system effectiveness in higher education institution: Antecedents and consequences. *BAR-Brazilian Administration Review, 21*(2), e230070.

DOI: https://doi.org/10.1590/1807-7692bar2024230070

Keywords:
higher education institution; lecturers; performance management system

JEL Code:
M41, M10, M12

Received:
June 30, 2023.
This paper was with the authors for two revisions

Accepted:
April 02, 2024.

Publication date:
April 19, 2024.

Corresponding author:
Ietje Nazaruddin
Universitas Muhammadiyah Yogyakarta
Jl. Brawijaya, Geblagan, Tamantirto, Kec. Kasihan, Kabupaten Bantul, 55183, Yogyakarta, Indonesia

ABSTRACT

Objective: Different discussions have been carried out on effectiveness of performance measurement systems (PMS) in higher education institutions (HEI). Some lecturers assert that PMSs place excessive emphasis on bureaucratic procedures, diverting attention from their primary responsibilities, without contributing to performance. Therefore, this study aimed to analyze the factors influencing effectiveness of PMS implementation and explore the impact of the concept on lecturers' motivation to enhance performance. **Methods:** We conducted a survey with 293 lecturers in Indonesia and employed structural equation modeling (SEM) to test the relationships included in the theoretical model. **Results:** The result showed that PMSs for development purposes indirectly affected effectiveness through rating and feedback system satisfaction, as well as organizational commitment. Meanwhile, PMSs for strategic purposes have a direct and indirect effect through self-monitoring and feedback system. **Conclusions:** The study implied the importance of considering the mediating role of rating and feedback system satisfactions, as well as organizational commitment, and self-monitoring, on the influence of PMSs for development and strategic goals. Furthermore, an effective PMS served to elevate lecturers' motivation to excel in their performance.

INTRODUCTION

Higher education institutions (HEI) are important in improving the nation's competitiveness by developing the quality of human resources (Pekkanen & Pirttilä, 2024; Pratolo et al., 2020; Zakuan et al., 2012). Over the past few decades, the number of HEIs has increased with the level of international and national competition, specifically in the current era of global ranking and accreditation of HEIs (Fernandes & Rinaldo, 2018; Tjahjadi et al., 2019). The new pattern of New Public Management (NPM) in the development of strategic management offers efforts to survive in a dynamic environment (Bianchi & Caperchione, 2022). The strategy offered is the adoption of a performance measurement system (PMS) as a driver of the learning process of decision-makers in the face of specific complexity factors, challenging the success and survival of HEIs (Bianchi & Caperchione, 2022).

Lecturers are one of the elements of HEIs contributing to improving their performance (Nazaruddin et al., 2020). To ensure lecturers excellence amidst fierce competition, HEIs need to implement a PMS (Janudin & Maelah, 2016). In the context of Indonesia, the management of a PMS in HEIs is governed by the provisions outlined in Replublic of Indonesia (2005), which pertains to teachers and lecturers. The primary responsibilities of lecturers, serving as the criteria for assessing performance, include three core domains, namely teaching, study, and community service (Sofyani et al., 2019). However, the management using a new public policy framework has its challenges (Pekkanen & Pirttilä, 2024). This is because lecturers can set their priorities and goals according to the criteria set by lecturer's discipline, rather than the needs of the HEI (Decramer et al., 2013). Conversely, many HEIs have established PMSs with limited procedures, where the concept is only for personnel administration and not 'managing' their human resources (Barry et al., 2001; Garengo et al., 2021). Mntonintshi and Mtembu (2018) found that PMSs failed to lead lecturers to achieve better performance and benefit the HEI. PMSs are perceived as a management tool, lacking a focus on human resource development. In addition, the system functions as a political tool, without objectivity and seemingly designed to exclusively serve the interests of the employer.

The appropriateness of PMS policies remains a subject of debate. Some studies showed that applying a managerialism model through performance measurement policies might not be suitable for managing lecturers (Maimela & Samuel, 2016; Nazaruddin et al., 2020). PMSs are argued to potentially burden lecturers with bureaucratic procedures, diverting their focus from primary responsibilities and posing a threat to performance. Contrarily, Mather and Seifert (2011) and other proponents (Alach, 2017; Cavicchi & Vagnoni, 2018; Janudin & Maelah, 2016; Molefe, 2012) contended that PMS mechanisms were indispensable for enhancing lecturers performance in higher education. PMS policies should be implemented in line with the work of lecturers and the strategic goals of their respective institution.

Salleh et al. (2010) and Nazaruddin et al., 2020 showed that PMSs were necessary for HEIs and beneficial to improve lecturers' performance when the policy was implemented effectively and comprehensively (Alach, 2017; Rasit & Isa, 2014; Schulz et al., 2010). However, many studies find difficulty in explaining the success and failure criteria that must be met for PMSs to be effective (Franco-Santos & Otley, 2018; Micheli & Mari, 2014). Consensus regarding effectiveness of PMSs in yielding positive outcomes, including improved communication, control, motivation, and strategic alignment, has not been reached. There exists ongoing debate and varying perspectives on the contribution of the variable to the desired outcomes (Franco-Santos & Otley, 2018). Frequently, management raises concerns about the value of implementing a PMS, questioning the justification of the associated efforts (Dusterhoff et al., 2014).

In the context of Indonesia, several issues are of interest for further study. First, the country has the third largest number of HEIs, but the quality is not proportional to the quantity. Based on data from Higher Education Database by the Directorate General of Higher Education, Ministry of Education and Culture of the Republic of Indonesia 2020, the number of HEIs accredited 'A' and 'Excellent' is only 0.025% of the total (Directorate General of Higher Education, 2020). According to the QS World University Ranking (QS WUR) and the Times Higher Education (THE) World University Rankings, Indonesia lags behind countries in Asia such as Singapore, China, and Japan (Soewarno et al., 2022). The low ranking shows that performance of lecturers is not optimal as the main indicator in ranking HEIs. Second, lecturers are burdened with mandatory duties, namely 'Tri Dharma Perguruan Tinggi.' They are charged with three aspects, namely education and teaching, research and development, and community service. Furthermore, these individuals are also burdened with administrative work due to the gap between the number of lecturers and students, and the application of information technology is not optimal. In private HEIs, there is also a burden due to a large number of students, while the rewards obtained are not proportional to the amount of work compared to Malaysia and Singapore. Finally, PMS implementation only focuses on administrative obligations and is not

oriented toward the strategic objectives of PMS, namely performance improvement (Santati et al., 2022).

Regardless of the debate on the importance, this study confirms that PMS is a state-regulated policy. Efforts to investigate the key success factors in HEIs to improve performance are crucial. Therefore, this study examines antecedents and consequences of PMS effectiveness in the context of HEIs, specifically in developing countries such as Indonesia, and the study questions include:

(1) Does PMS purpose (developmental and strategic) affect effectiveness of PMS implementation through person-referenced (ratting system satisfaction, feedback satisfaction) and organization-referenced outcomes (organizational commitment; self-monitoring; feedback system)?

(2) Does effectiveness of PMS implementation affect the motivation to improve lecturers?

This study conducted additional analysis with a serial mediation method to explain the relationship between PMS purposes, person-referenced outcomes, organization-referenced outcomes, effective PMS, and lecturers' motivation. The sample consisted of 293 lecturers from 79 HEIs in Indonesia and a robust structural equation modeling (SEM) method was used to test the hypotheses. This study contributes to the literature by expanding on Iqbal's PMS model for companies by applying it to the context of HEIs. PMS studies at HEIs is critical since the lecturer culture is accustomed to academic freedom so that the intention to follow the PMS policy is not as strong as the employee culture in the company. This is why PMS in HEIs is not always effective. This study not only tests the determinants of PMS effectiveness, as most previous studies have, but it also empirically confirms the effectiveness of the PMS developed on motivation to improve lecturers' performance using serial mediation analysis, as such method can describe how the model works as a whole. Additionally, this study introduces a new discussion about PMS in HEIs in the context of developing countries where the pursuit of lecturer performance has intensified, particularly since the SDGs issue was launched, while related literature remains scarce. As a result, the study's findings can help other developing countries develop PMS models to encourage lecturer performance, thereby increasing HEIs' competitive advantage. Practical contributions were reported as recommendations for HEI management in implementing the effectiveness of PMS in increasing lecturers' motivation to perform better by considering key factors, namely person-referenced outcomes (ratting system satisfaction; feedback satisfaction) and organization-referenced outcomes (organizational commitment; self-monitoring; feedback system).

LITERATURE REVIEW

PMS

PMS has been defined as a set of management control mechanisms used by executives and employees to facilitate the achievement of organizational objectives by influencing individual behavior and performance (Broadbent & Laughlin, 2009; Ferreira & Otley, 2009; Franco-Santos & Otley, 2018; Malmi & Brown, 2008. Performance measurement is the process of managing concepts in a goal-oriented way, which is often expressed in annual appraisals that manage predefined goals and review goal achievement (Camilleri & Camilleri, 2018). A PMS consists of (1) planning, reflecting stakeholder expectations; (2) measurement metrics used to operationalize performance; (3) review referring to the evaluation and feedback on performance information; and (4) extrinsic or intrinsic performance-related reward (Ferreira & Otley, 2009; Flamholtz et al., 1985; Franco-Santos et al., 2012; Franco-Santos & Otley, 2018; Otley, 1999). A PMS can also include control elements, such as cultural and administrative controls (Malmi & Brown, 2008; Ouchi, 1979). Efficiency and effectiveness are concerns of an effective implementation (Neely et al., 1995), so that external and internal parties are satisfied with organizational and individual performance. Selecting measures, namely indicators, with purpose and caution is essential for successful future performance (Neely et al., 2001).

PMS has been the subject of various previous studies on accounting and other business topics (Alach, 2017; Frare et al., 2022). According to Pradhan et al. (2017), individuals view the concept as a link between themselves and organizational objectives. However, it is often formulated from an organizational perspective and takes less consideration than the employee's perspective as the subject of policies (Sharma et al., 2016). This kind of condition might trigger the failure of PMSs to run in the context of HEIs (Nazaruddin et al., 2021). In addition, study on individual perceptions of measurement objectives can represent an individual's understanding of the essence (Iqbal et al., 2019). Even though organizations expect high performance and achievement of institutional goals, individuals as members expect growth and career development, promotion, rewards, and recognition (King, 2020). Failure to consider this can impact the appearance of a widening congruence gap. Individuals may lose motivation and interest in work and are less supportive of job changes,

which might affect productivity levels and motivation to improve performance (Bekele et al., 2014; Getnet et al., 2014; Selvarajan & Cloninger, 2012; Sharma et al., 2016; Swanepoel et al., 2016). Therefore, the impact of individual reactions on PMS implementation needs to be studied to determine long-term effectiveness and its role in increasing employee motivation to perform (DeNisi & Smith, 2014). Previous results also suggested that the study on the relationship between PMS and the rate reaction was a fruitful area to explore (Pichler, 2019; Pichler et al., 2020).

Even though organizations expect high performance and achievement levels, employees expect growth and career development, promotion, rewards, and recognition. Failure to recognize this concept has a detrimental impact on performance where employees lose motivation and interest in work, and their attitudes toward job change (Bekele et al., 2014; Getnet et al., 2014; Sharma et al., 2016; Swanepoel et al., 2016). Getnet et al. (2014) argued that the mismatch between individual and organizational goals resulted in dissatisfaction with PMS practices and decreased performance levels. This is in line with goal-setting theory because the consistency of individual understanding positively impacts the behavior to achieve institution objectives. The fairness of PMS practices is expected after realizing the importance of organizational growth (Ghauri & Neck, 2014).

The comprehensive model by Iqbal et al. (2019) suggested that to achieve PMS implementation effectiveness, it was necessary to explore the relationship between PMS objectives, mediation, and effectiveness. As a mediator between the goals and effectiveness of PMSs, Iqbal used multiple mediators, which could be grouped into person-referenced and organization-referenced outcomes as a reaction to PMS goals. The results show that PMS objectives are related to various aspects of human resources, such as feedback, organizational commitment, and self-monitoring, as a form of individual reaction.

Developmental purposes of PMS

The developmental purpose of a PMS refers to increasing attitudes, skills, and experiences to achieve performance (Boswell & Boudreau, 2002). Successful individual development requires the motivation and resources to support the increase (Ng & Feldman, 2008). The prospect of development opportunities can serve as a significant motivator. Individuals are more inclined to be motivated when an organization is actively investing in enhancing their skills and capabilities, showing increased commitment (Kuvaas, 2007; Kuvaas & Dysvik, 2009). A PMS that accurately identifies development needs can be invaluable to organizations.

Development objectives in a PMS focus on identifying training needs, strengths, and weaknesses and providing feedback on performance used in decision-making about individual development (Arnăutu & Panc, 2015). The focus is on skills enhancement and capacity building as well as the detection of improvement in underperforming cases (Kampkötter, 2017). Furthermore, the function of performance appraisal contributes to capacity building and development within the organization. The appraisal's evaluative and developmental objectives complement the organizational structure and measurement of its success factors. This allows data consolidation in line with individual objectives (Saratun, 2016), promoting congruence within the organization.

In recent years, individual development has been considered one of the main performance appraisal goals, specifically in a dynamic organizational environment demanding the growth of human resources competencies and capabilities (Cappelli & Tavis, 2016; Garengo et al., 2021). Therefore, the developmental purposes of a PMS have been the focus of study attention for the past several years. Under the principles of social exchange theory, when individuals recognize that organizations are genuinely invested in their development, motivation is experienced to optimize outcomes and show positive attitudes (Chiang & Birtch, 2010; Roberson & Stewart, 2006). Consistent with the expectancy theory by Vroom (1964), the superior performance of individuals depends on the role and proper understanding of PMS. Individuals interested in their personal development understand their role better to produce performance and achieve results. Expectancy theory also suggests that employees who expect increased effort to achieve certain results tend to improve their efforts and achieve the desired results (Vroom et al., 2005). From measurement literature, perceptions of performance appraisal development lead to individual satisfaction and commitment (Tharenou, 1997; Tziner et al., 2001; Úbeda-García et al., 2018).

Study on the objectives of PMSs has attracted many analyses (Jawahar & Williams, 1997), specifically the difference between administrative and development objectives (Jawahar & Williams, 1997; Selvarajan & Cloninger, 2012). In general, performance measurement analyzes the two objectives of a PMS, namely the individual (development) and the organization (strategic). Several studies have also examined the effects of the variable on individuals (Amhalhal et al., 2021; Boswell & Boudreau, 2002; Pichler, 2012). Youngcourt et al. (2007) suggest that PMS for developmental pur-

poses is positively related to organizational commitment. According to the social exchange theory by Blau (1964), the more positive the rewards employees receive from their organization, the more positive the attitudes or behaviors are shown. This is in line with the results of previous studies, where the purpose of performance appraisal can affect employee work outcomes such as satisfaction and affective organizational commitment (Youngcourt et al., 2007). This has an impact on the effectiveness of PMS implementation (Qiu et al., 2015). Several studies have also shown that an individual's understanding of the development goals can increase the effectiveness of PMS (Ikramullah et al., 2016; Iqbal et al., 2015; Iqbal et al., 2019; Selvarajan & Cloninger, 2012). Individual reactions in the form of satisfaction with the rating system, feedback, and organizational commitment enhancement positively impact the effectiveness of implementing PMS (Iqbal et al., 2019). Based on the previous discussions, the following hypothesis is formulated:

H1: The development purpose of PMS is positively associated with rating system satisfaction (H1a), feedback satisfaction (H2b), and commitment to the organization (H1c), which promotes effectiveness of PMS implementation.

Strategic purposes of PMS

During the last decades, PMSs for strategic purposes have not been widely explored (Iqbal et al., 2019). The goal-setting theory states that human behavior is goal-directed, where challenging objectives result in good individual performance (Merriman, 2017; Skovoroda & Bruce, 2017). Individuals are likely to perceive the strategic goals of a PMS through the lens of institution expectations. Therefore, the outcomes desired by an institution are attained in line with the broader objectives outlined by the PMS (Vroom, 1964). The results suggest that management can motivate individuals by measuring their performance in line with the institution goals, showing the importance of individual and institution goals (Aguinis, 2009) for the effectiveness of a PMS (Yang & Hung, 2017).

For strategic purposes, a PMS aims to be consistent with the functional relationship between individual and organizational goals by identifying PM goals (Aguinis, 2009). PMS for strategic purposes increases individual understanding of organizational goals because employees learn how to evaluate the achievement of goals (Iqbal et al., 2015; Soltani, 2003). In addition, this provides information for organizational planning (Walsh & Fisher, 2005), which increases effectiveness (Spinks et al., 1999), productivity (Herdlein et al., 2008), and performance (Buckingham & Vosburgh, 2001; Selvarajan & Cloninger, 2012). Therefore, individual understanding of a goal-oriented PMS for strategic purposes will affect the feedback system. There is a demand for direct and precise information from the institution, aiming to assess performance accurately (Iqbal et al., 2015). Strategic purposes also affect self-monitoring because when performance measurement helps individuals understand the expectations that the institution has for themselves, behavior is adjusted according to the expectations of the institution (Ikramullah et al., 2016; Iqbal et al., 2015; Iqbal et al., 2019).

Individual reactions to the strategic purpose of a PMS can be used to determine its effectiveness (Pichler, 2019). However, many managers are reluctant to provide measurement reviews of their employees' reactions to the PMS. The results of previous study show that when the aim is to help individuals understand their contribution to higher education, PMS effectiveness is increased (Iqbal, 2012; Iqbal et al., 2019). Furthermore, the strategic purpose also triggers individuals to pursue higher education goals (Ikramullah et al., 2016; Iqbal et al., 2015; Iqbal et al., 2019). Self-monitoring, or the adaptation to higher education goals, can impact the effectiveness of a PMS. A feedback system that refers to positive individual perceptions further increases the effectiveness of a PMS (Iqbal et al., 2015). Based on this information, a hypothesis is formulated as follows:

H2: The strategic purpose of PMS is positively associated with self-monitoring (H2a) and feedback system (H2b), which in turn promotes effectiveness of the implementation.

PMS implementation effectiveness

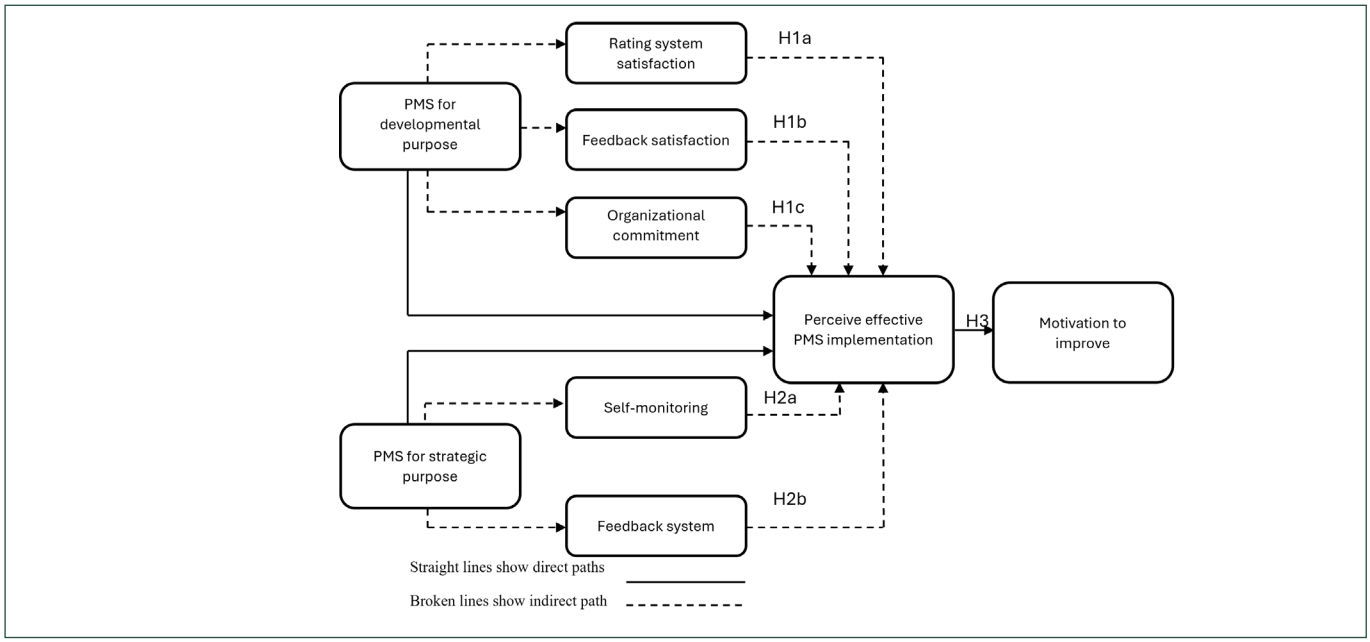
PMS implementation is intended to motivate individuals to devote more effort in achieving institution goals (McClendon et al., 2020). This system develops individuals and encourages performance toward institution performance (Ukko et al., 2017). Selvarajan and Cloninger (2012) found that PMS effectiveness motivates improvement. Several studies also supported that fair and open assessments improved the performance of individuals who understood the critical role of PMS (Awan et al., 2020; Govender & Bussin, 2020; Kuvaas, 2006; Memon, Salleh et al., 2020; Selvarajan & Cloninger, 2012). Based on this description, the following hypothesis is formulated:

H3: PMS implementation effectiveness is positively associated with individuals' motivation to improve their performance.

Based on the development of the hypotheses, a study model is formulated, as shown in Figure 1.

METHODOLOGY

This study uses a survey method with hypothesis testing and the conceptual framework is shown in Figure 1. This study uses a purposive sampling method where only permanent lecturers are included as samples due to their inclusion and understanding of PMS implementation in HEIs. Therefore, the selected samples fit with the objectives of the study (Sekaran & Bougie, 2016; Zikmund et al., 2013).



Source: Developed by the authors.

Figure 1. Study model.

The questionnaire instrument was adopted from a previous study and modified according to the situation in Indonesia without changing the meaning. Perceptions regarding the developmental and strategic purposes of PMS implementation were measured from previous studies (Cleveland et al., 1989; Iqbal et al., 2017; Iqbal et al., 2019; Longenecker et al., 1988). Rating system satisfaction was measured using four items from Levy and Williams (2004) and Youngcourt et al. (2007). This coupling was performed to avoid construct deficiency and the first two items measured the goodness of the rating system concerning the participant's job performance. The remaining two items measured general satisfaction with performance appraisal system. Feedback satisfaction was measured using four items from Kuvaas (2006) and organizational commitment was calculated by a six-item scale from Kalleberg et al. (1996). Moreover, when the feedback system was measured using five items drawn from Kuvaas (2011), self-monitoring was obtained using a six-item scale by Lennox and Wolfe (1984). Perceived effectiveness of PMS implementation was calculated using a seven-item scale by Longenecker et al. (1988) and modified by Iqbal et al. (2017). These items ask about the perceived purposefulness, fairness, openness, participation, objectivity, formality, and professionalism of the existing performance assessor, with a special focus on the rater or manager. Finally, motivation to improve performance after receiving feedback was measured using three items from the scale of Fedor et al. (1989). The variables are measured using a Likert scale of one = 'strongly disagree' to five = 'strongly agree.'

Data were collected by distributing questionnaires in person and online by form and personal email to increase the response rate. After filtering the data by deleting non-conforming respondents and extreme answers, 293 responses (data) from 79 HEIs and 14 regions were collected and eligible for analysis (Table 1). The context of Indonesia is pertinent, as the designation of lecturers is regulated by a decree issued by the Ministry of Education, Culture, Research, and Technology concerning academic positions. The term 'lecturer' is used, reflecting the responsibilities encapsulated in the 'Tri Dharma Perguruan Tinggi,' tasked with education and teaching, research and development, and community service (Sofyani et al., 2019). In contrast, Singapore adopts a distinct method to PMSs for lecturers. The government controls PMSs based on the categorization of HEIs into academic, vocational, and post-secondary studies. Therefore, effectiveness

of PMSs is a compelling subject for further exploration. A significant portion of survey studies in this domain report questionnaire return rates typically between 10% and 20% of the distributed questionnaires (Fowler, 2013). Meanwhile, the response rate is greater than the specified sample size, reaching 30.41% of the total distributed. The present study shows distinctions in contrast to earlier investigations, exemplified by Soewarno et al. (2022), who reported an 18% variance with a cohort comprising 182 lecturers, and Nazaruddin et al. (2020), who identified a disparity of 203 eligible respondents. Variance-based partial least square (PLS) is used to test the hypotheses. This method can simultaneously analyze measurement and structural models (Chin et al., 2003; Hair et al., 2014). The analysis aims to answer a series of study questions interlinked in a single systematic and comprehensive analysis by modeling the relationship between several independent constructs (Gefen et al., 2000).

Since the study used a non-probability sampling method, Memon, Ting et al. (2020) argued that power analysis was recommended to determine sample size. Based on the power calculation, the minimum sample size was 74 lecturers. Furthermore, this assumption has been accepted since the collected data were 293. Given the self-reporting nature of the study data, different tests were conducted to ascertain the presence of potential common method variance (CMV) bias in the dataset (Podsakoff et al., 2003) using Harman's single-factor (Tehseen et al., 2017). The results show that the first factor explains only 33.67%, or less than 50%, hence CMV bias is not a severe problem (Podsakoff et al., 2003).

Table 1. Information related to selected cases.

Information	Description	Number	Percentage
Accreditation status of HEI	A	157	53.6
	B	124	42.3
	C	6	2
	No response	6	2
Gender	Male	116	39.6
	Female	172	58.7
	No response	5	1.7
Years of service	1-5 years	98	33.4
	> 5-10 years	43	14.7
	> 10-15 years	35	11.9
	> 15 years	115	39.2
	No response	2	0,7
Education level of respondents	Master's	226	77.1
	Doctorate	65	22.2
	Other	1	0.3
	No response	1	0.3
Position of respondents	Do not have a position	190	64.8
	Have a position	93	31.7
	No response	10	3.4
	Number of respondents:	293	100

Note. Developed by the authors.

Measurement test

Validity and reliability tests were required before analyzing the hypothesis. First, convergent validity was assessed to ensure the indicators could measure the construct. In the process, reference was made to the outer loading and average variance extracted (AVE) values. Table 2 shows that the loading value for most indicators is higher than the required score, namely 0.5 (Hair et al., 2014. Indicators with loading less than 0.5 were dropped and the AVE of all indicators met the suggested value, higher than 0.5 (Fornell & Larcker, 1981).

Table 2. Convergent validity and reliability test results.

Variable/Item code	Indicator	Loading
	PMS for developmental purpose (AVE = 0. 0.792; CR = 0.879; CA = 0.708)	
PDP1	PMS provides information to lecturers about their performance position	0.854
PDP2	PMS provides feedback to lecturers about their performance	0.897
PDP3	PMS identifies the strengths and weaknesses of lecturers in pursuing performance	0.768
	PMS for strategic purpose (AVE = 0.892; CR = 0.918; CA = 0.650)	
PSP1	PMS helps lecturers understand what is expected of them	0.766
PSP2	PMS provides clear objectives that lecturers can understand	0.794
PSP3	PMS provides information about the goals of the HEI	0.847
PSP4	PMS helps lecturers to prioritize various work activities	0.805
PSP5	PMS helps lecturers understand the vision and strategy of the HEI	0.850
PSP6	PMS shows a clear linkage between lecturers responsibility and performance of the department/institution	0.772
	Rating system satisfaction (AVE = 0.900; CR = 0.751; CA = 0.832)	
RSS1	Good perception of performance appraisal process	0.782
RSS3	Happy with the current performance appraisal process	0.909
RSS4	General satisfaction with performance appraisal process	0.903
	Feedback satisfaction (AVE = 0.560; CR = 0.917; CA = 0.890)	
FS1	Satisfaction with the way the institution provides input	0.899
FS2	Input/suggestions given to lecturers are following the way lecturers work	0.903
FS3	The input/suggestion that lecturers receive is in line with the actual work target lecturers have achieved	0.879
FS4	HEI provides more positive input/suggestions than criticism to achieve lecturers performance targets	0.787
	Organizational commitment (AVE = 0.528; CR = 0.816; CA = 0.706)	
OC1	Willing to work harder than necessary to help make the HEI succeed	0.650
OC4	Find that my values and those of the organization are very similar	0.796
OC5	Proud to work for this HEI	0.731
OC6	Willing to refuse other jobs despite getting higher pay to remain with this organization	0.722
	Feedback system (AVE = 0.; CR = 0.; CA = 0.)	
FSY1	Input from the institution on how lecturers should do the job	0.885
FSY2	Lecturers receive clear information from the institution regarding their performance	0.874
FSY4	Lecturers are always informed about what they did well and what they could do better	0.838
	Self-monitoring (AVE = 0.632; CR = 0.872; CA = 0.807)	
SM1	Ability to change behavior when needed	0.741
SM2	Ability to control how to interact with others	0.835
SM4	Ability to adapt behavior to face any situation	0.842
SM6	Ability to determine the action to be performed easily	0.756
	Perception of effective PMS implementation (AVE = 0.688; CR = 0.923; CA = 0.899)	
PEPMS1	Lecturers clearly understand why the institution conducts lecturers PMS	0.704
PEPMS2	Reviewers/assessors provide a fair assessment in the process of assessing lecturers' performance	0.883
PEPMS3	The reviewer/assessor is open to conducting performance appraisals	0.837
PEPMS4	The PMS implemented allows lecturers to discuss the results of their performance	0.802
PEPMS6	The time given for lecturers performance the measurement process is sufficient	0.793
PEPMS7	PMS is implemented professionally according to the standards applied to the institution	0.873
	Motivation to improve (AVE = 0.846; CR = 0.943; CA = 0.909)	
MI1	Suggestions from PMS encourage you to do a better job	0.924
MI2	Suggestions from PMS encourage you to improve your performance	0.933
MI3	Suggestions from PMS increase lecturers' commitment to meet the suggestions well	0.901

Note. Developed by the authors. Indicators that have a loading factor value of less than 0.5 have been dropped.

Discriminant validity was tested showing the distinguished items between constructs or measurements of different concepts (Compeau et al., 1999). The Fornell-Lacker criterion and the hetero-trait-monotrait ratio (HTMT) are two widely accepted methods for testing discriminant validity (Hair et al., 2017). According to Henseler et al. (2015), HTMT could achieve higher levels of specificity and sensitivity compared to Fornell-Lacker with the criterion that all constructs were less than 0.85 (Hair et al., 2014). The results also met the recommended rule of thumb.

Finally, reliability was examined between constructs using Cronbach's alpha and composite reliability. The constructs had Cronbach's alpha scores higher than 0.6 and were said to be reliable (Chin et al., 2003). Similarly, the composite reliability value was higher than 0.7 in agreement with the rule of thumb (Fornell & Larcker, 1981). Since the validity and reliability tests were met, the hypotheses testing could be processed. Furthermore, this study assessed the structural model since measurement was satisfactory (Hair et al., 2019). The assessment criteria considered in addition to the coefficient of determination were the blindfolding-based cross-validated redundancy measure Q^2 (Shmueli et al., 2016). The Q^2 values ranged from $0 < Q^2 < 1$, where the closer to 1, the better the model (Chin, 1998b). The result for endogenous variables was $0 < Q^2 < 1$, showing a good observation value. This study also tested the variance inflation factor (VIF) in structural model stage to assess the possibility of multicollinearity problem (Hair et al., 2019). The test results showed that VIF values ranged around 1.000 to 2.395. According to Hair et al. (2019), VIF values less than 3 are ideally considered insignificant from collinearity issue.

EMPIRICAL RESULTS AND DISCUSSIONS

Table 3 and Figure 2 depict the direct and indirect relationships between variables in Panels A and B, each with one-tailed statistical testing (Ruxton & Neuhäuser, 2010). According to Chin (1998a), the adjusted R-squared value is said to be strong, moderate, and weak when the value is more than 0.67, higher than 0.33, and less than 0.19. Consequently, the adjusted R-squared for the perceived effectiveness of PMS implementation is moderate. This study enhances comprehension by stating that the reaction rate in the context of person-reference and organization-reference outcomes serves as a mediator in the relationship between PMSs for developmental purposes and the effective implementation in HEIs' settings. The reaction rate in the context of person-reference outcomes is identified as a complete mediation factor. This confirms the suggestion of Iqbal et al. (2019) that it is necessary to explore the relationship between PMS goals by considering mediating factors to achieve implementation effectiveness. Meanwhile, organization-reference outcomes consisting of a feedback system and self-monitoring have a partial mediation relationship.

Table 3. Hypothesis testing results.

Association	Hypothesis	Coefficient	T-statistic	Conclusion
Panel 1. Direct effect				
PDP → RSS	NH	0.362*	7.141	Significant
PDP → FS	NH	0.320*	5.369	Significant
PDP → OC	NH	0.316*	6.466	Significant
PDP → PEPMS	NH	-0.042	0.872	Insignificant
RSS → PEPMS	NH	0.208*	3.590	Significant
FS → PEPMS	NH	0.269*	4.172	Significant
OC → PEPMS	NH	0.110*	1.994	Significant
PSP → FSY	NH	0.302*	4.779	Significant
PSP → SM	NH	0.258*	4.061	Significant
PSP → PEPMS	NH	0.124*	2.408	Significant
SM →PEPMS	NH	0.077*	1.777	Significant
FSY → PEPMS	NH	0.225*	3.446	Significant
PEPMS → MI	H3	0.426*	7.310	Supported
Panel 2. Specific indirect effect				
PDP → RSS → PEPMS	H1a	0.075*	3.126	Full mediation (indirect only)
PDP → FS → PEPMS	H1b	0.086*	3.240	Full mediation (indirect only)
PDP → OC → PEPMS	H1c	0.035*	1.886	Full mediation (indirect only)
PSP → FSY → PEPMS	H2a	0.068*	2.661	Partial mediation (complementary)
PSP → SM → PEPMS	H2b	0.020**	1.501	Partial mediation (complementary)

Note. Adjusted R-squared: 0.539. P < 0.05*, P < 0.1**; t-table > 1.66*, t-table > 1.28**. PDP: PMS for developmental purpose; PSP: PMS for strategic purpose; PEPMS: perception of effective PMS implementation; RSS: ratting system satisfaction; FS: feedback satisfaction; OC: organizational commitment; FSY: feedback system; SM: self-monitoring; MI: motivation to improve; NH: not hypothesized.

The results confirm several previous studies, namely Iqbal et al. (2019), Qiu et al. (2015), Selvarajan and Cloninger (2012), Ikramullah et al. (2016), Iqbal et al. (2015), Iqbal et al. (2019), and Pichler (2019) that to achieve effective implementation, two main antecedents have a major contribution for lecturers develop-

ment and strategic HEI purposes. Therefore, the mediating role of ratting system satisfaction, feedback satisfaction, and organizational commitment variables is crucial to reach PMS implementation effectiveness in the HEI context. This study confirms that PMSs can effectively encourage motivation for lecturers to perform better. These results mediate the debate about the pros and cons of the not-for-profit-organization (NFPO) sector (Amhalhal et al., 2021). The PMS mechanism is not beneficial when applied to NFPOs because of their different nature from FPOs. HEIs, as autonomous organizations, are accustomed to a culture of freedom, specifically regarding academics. Adopting the NPM mechanism commonly used in FPO is resistant and fails to trigger performance. Other studies did not blame PMS but believed that the failure was due to its ineffective implementation. Therefore, investigating the determinants or antecedents of effective implementation is crucial. In this context, lecturers' performance can be improved when PMS implementation is perceived to be effective.

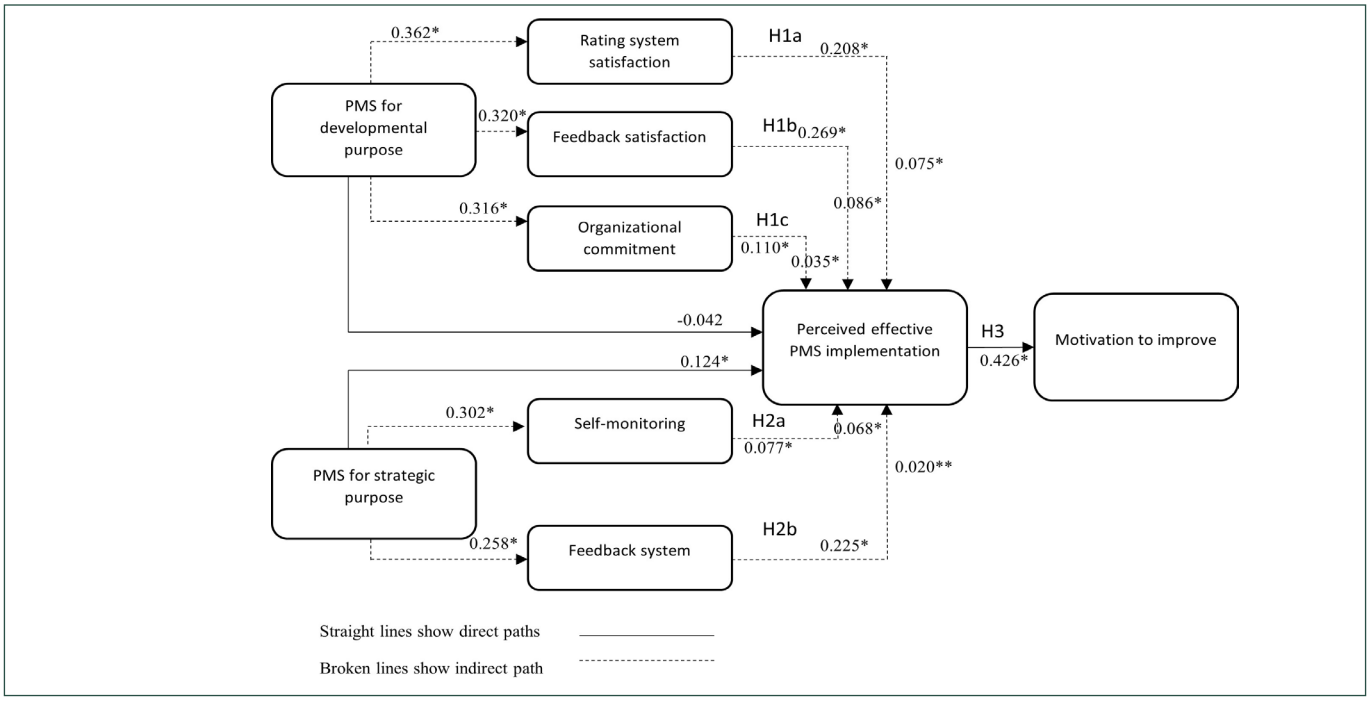


Figure 2. Structural model assessment result.

Additional analysis

In Table 4, this study provides additional analysis with serial mediation. The results show that PMS for development and strategic purposes can increase effectiveness in HEIs through person-referenced (rating system satisfaction; feedback satisfaction) and organization-referenced outcomes (organizational commitment; self-monitoring; feedback system).

Table 4. Serial mediation analysis.

Serial mediation path analyses	Coefficient	T-statistic	Conclusion
PDP → RSS → PEPMS → MI	0.032*	2.920	Significant
PDP → FS → PEPMS → MI	0.037*	2.805	Significant
PDP → OC → PEPMS → MI	0.015*	1.768	Significant
PSP → SM → PEPMS → MI	0.008	1.425	Insignificant
PSP → FSY → PEPMS → MI	0.029*	2.249	Significant

Note. P < 0.05*, P < 0.1**; t-table > 1.66*, t-table > 1.28**. PDP: PMS for developmental purpose; PSP: PMS for strategic purpose; PEPMS: perception of effective PMS implementation; RSS: ratting system satisfaction; FS: feedback satisfaction; OC: organizational commitment; FSY: feedback system; SM: self-monitoring; MI: motivation to improve.

Practical implication

Considering the results of the study, several implications are suggested. First, effectiveness of PMS implementation, which is determined by the aim of lecturers' development, must consider three significant aspects of mediation. These include lecturers' (ratee) satisfaction with the rating and feedback system, and the PMS for development purposes should increase organizational commitment. Second, the HEI management needs to monitor PMS implementation for strategic purposes directly influencing effectiveness of the implementation. However, as self-monitoring and feedback system act as a complement (quasi-mediation), these two issues also need to be considered. Finally, this result shows that HEI management should consider effective PMS implementation since it increases the motivation of lecturers to improve performance. The present study conducted in Indonesia holds relevance as a representative case for study in developing countries. Consequently, the outcomes can offer valuable recommendations for the management of HEIs particularly in other developing nations. This significance arises from the common challenges faced by HEIs, striving to enhance the quality of education, contributing to the progress of the respective nations, and attaining international recognition.

Theoretical implication

The usefulness of PMSs for lecturers in HEIs is still debatable since PMSs are viewed as administrative processes capable of jeopardizing performance. The results show that the development increases effectiveness of PMSs when lecturers are satisfied with the rating and feedback system provided by the institution. Organizational commitment can be triggered when career development is well conducted. Therefore, these results substantiate the expectations and viewpoints of social exchange theories, showing that lecturers display positive reactions to support the effectiveness of PMS implementation when accompanied by policies conducive to supporting their career growth. This is consistent with several previous studies (Chiang & Birtch, 2010; Iqbal et al., 2019), showing that when organizational interest is perceived in professional development, lecturers are motivated to optimize their performance and show a positive work attitude. Regarding strategic goals, self-monitoring and feedback system serve as partial mediators. This implies that the presence or absence of these elements in complementary roles can influence the effectiveness of a PMS. However, to improve the effectiveness of PMSs in HEIs, it will be better to consider these factors. These results are in line with social exchange and expectation theories. In light of these insights, HEIs need to consider the views of these two theories in managing and governing their lecturers to perform through PMS policies. Lecturers' comprehensive understanding of the purpose of the PMS serves as a key influencer in shaping their behavior to be consistent with the desired goals of HEIs while addressing individual outcomes of lecturers. The positive benefits derived from PMSs, perceived by lecturers, show their support for the implementation, leading to behavior in line with the achievement of HEIs' objectives. This study validates the goal-setting theory, affirming that a thorough comprehension of PMSs enhances the implementation effectiveness and positively impacts individual motivation to enhance performance. Driven by considerations of gains from their actions, lecturers obtain satisfaction in the PMS implementation process crucial for achieving an effective PMS. This satisfaction, reflected in rates and outcomes, significantly influences their motivation to improve performance. The outcome mediates the ongoing discourse surrounding the development of PMSs in HEIs, stating that the implementation of PMSs remains beneficial. Effectiveness of PMSs in elevating lecturers' motivation shows its relevance, contributing to the resolution of the pro-con debate surrounding their adoption in HEIs.

CONCLUSIONS

In conclusion, this study was conducted to examine antecedents and impact of effective PMS implementation for lecturers in the HEIs sector. In addition, the mediating effects of rating system satisfaction, feedback satisfaction, organizational commitment, feedback system, and self-monitoring were also explored. The study data were subjected to testing using the PLS method with 294 permanent lecturers participating as respondents. The results showed that PMSs for lecturers' development and HEI strategic purposes significantly affected the effective implementation of the concept. Furthermore, ratee and rating system satisfaction, as well as feedback satisfaction, organizational commitment, and feedback system, partially mediated the relationship between antecedents and effective PMS implementation for strategic purposes and lecturers. Effective PMSs significantly affected lecturers' motivation to improve their performance. Considering these findings, this study fills a gap in the research of PMS effectiveness models in HEIs, which is rarely conducted by modifying what Iqbal proposed in the company setting. The study's findings also shed light on how PMS models in HEIs, particularly in developing countries, should be developed. Furthermore, this study confirms the role of the effectiveness of the developed PMS in motivating lecturers to improve their performance employing serial mediation analysis. This allows for the identification of a comprehensive model of construct-relationships.

No research is without limitations. Firstly, this study was conducted in Indonesia, without covering all lecturers in the regions, and this had implications for the external validity. Therefore, readers should be careful when generalizing the results to a wider scope. There are several opportunities to study the same topic in other areas. Secondly, this study might not be able to provide a very detailed explanation of the relationship of the variables with each other, specifically the role of mediators in influencing antecedents and effective PMS. Future study is strongly recommended to examine similar themes using other methods, such as case studies or mixed methods including qualitative investigations. The results could benefit from deeper and richer insights and possibly added control variables such as the respondents' position and length of employment at the accredited institution.

REFERENCES

Aguinis, H. (2009). An expanded view of performance management. In J. W. Smither & M. London (Eds.), *Performance management: Putting research into action* (pp. 1-43). Jossey-Bass/Wiley.

Alach, Z. (2017). The use of performance measurement in universities. *International Journal of Public Sector Management, 30*(2), 102-117. https://doi.org/10.1108/IJPSM-05-2016-0089

Amhalhal, A., Anchor, J., Tipi, N. S., & Elgazzar, S. (2021). The impact of contingency fit on organisational performance: An empirical study. *International Journal of Productivity and Performance Management, 71*(6), 2214-2234. https://doi.org/10.1108/IJPPM-01-2021-0016

Arnăutu, E., & Panc, I. (2015). Evaluation criteria for performance appraisal of faculty members. *Procedia-Social and Behavioral Sciences, 203*, 386-392. https://doi.org/10.1016/j.sbspro.2015.08.313

Awan, S. H., Habib, N., Shoaib Akhtar, C., & Naveed, S. (2020). Effectiveness of performance management system for employee performance through engagement. *SAGE Open, 10*(4), https://doi.org/10.1177/2158244020969383.

Barry, J., Chandler, J., & Clark, H. (2001). Between the ivory tower and the academic assembly line. *Journal of Management Studies, 38*(1), 88-101. https://doi.org/10.1111/1467-6486.00229

Bekele, A. Z., Shigutu, A. D., & Tensay, A. T. (2014). The effect of employees' perception of performance appraisal on their work outcomes. *International Journal of Management and Commerce Innovations, 2*(1), 136-173.

Bianchi, C., & Caperchione, E. (2022). Performance management and governance in public universities: Challenges and opportunities. In C. Bianchi, & E. Caperchione (Eds.), *Governance and Performance Management in Public Universities: Current Research and Practice* (pp. 1-14). Cham.

Blau, P. M. (1964). Justice in social exchange. *Sociological Inquiry, 34*(2), 193-206. https://doi.org/10.1111/j.1475-682X.1964.tb00583.x

Boswell, W. R., & Boudreau, J. W. (2002). Separating the developmental and evaluative performance appraisal uses. *Journal of business and Psychology, 16*, 391-412. https://doi.org/10.1023/A:1012872907525

Broadbent, J., & Laughlin, R. (2009). Performance management systems: A conceptual model. *Management Accounting Research, 20*(4), 283-295. https://doi.org/10.1016/j.mar.2009.07.004

Buckingham, M., & Vosburgh, R. M. (2001). The 21st century human resources function: It's the talent, stupid! *Human Resource Planning, 24*(4).

Camilleri, M. A., & Camilleri, A. (2018). The performance management and appraisal in higher education. In C. Cooper (Ed.), *Driving Productivity in Uncertain and Challenging Times*. British Academy of Management.

Cappelli, P., & Tavis, A. (2016). The performance management revolution. *Harvard Business Review, 94*(10), 58-67. https://hbr.org/2016/10/the-performance-management-revolution

Cavicchi, C., & Vagnoni, E. (2018). Sustainability performance measurement inside academia: The case of a north Italian University. *Journal of Accounting & Organizational Change, 14*(2), 138-166. https://doi.org/10.1108/JAOC-04-2016-0022

Chiang, F. F., & Birtch, T. A. (2010). Appraising performance across borders: An empirical examination of the purposes and practices of performance appraisal in a multi-country context. *Journal of Management Studies, 47*(7), 1365-1393. https://doi.org/10.1111/j.1467-6486.2010.00937.x

Chin, W. W. (1998a). Commentary: Issues and opinion on structural equation modeling. *MIS Quartely, 22*(1), 7-16. https://www.jstor.org/stable/249674

Chin, W. W. (1998b). The partial least squares approach to structural equation modeling. *Modern Methods For Business Research, 295*(2), 295-336. https://psycnet.apa.org/record/1998-07269-010

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research, 14*(2), 189-217. https://doi.org/10.1287/isre.14.2.189.16018

Cleveland, J. N., Murphy, K. R., & Williams, R. E. (1989). Multiple uses of performance appraisal: Prevalence and correlates. *Journal of applied psychology, 74*(1), 130. https://psycnet.apa.org/record/1989-20834-001

Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly, 23*(2), 145-158. https://doi.org/10.2307/249749

Decramer, A., Smolders, C., & Vanderstraeten, A. (2013). Employee performance management culture and system features in higher education: Relationship with employee performance management satisfaction. *The International Journal of Human Resource Management, 24*(2), 352-371. https://doi.org/10.1080/09585192.2012.680602

DeNisi, A., & Smith, C. E. (2014). Performance appraisal, performance management, and firm-level performance: A review, a proposed model, and new directions for future research. *Academy of Management Annals, 8*(1), 127-179. https://doi.org/10.1080/19416520.2014.873178

Directorate General of Higher Education. (2020). *Higher Education Statistics*. https://pddikti.kemdikbud.go.id/asset/data/publikasi/Statistik%20Pendidikan%20Tinggi%202020.pdf

Dusterhoff, C., Cunningham, J. B., & MacGregor, J. N. (2014). The effects of performance rating, leader–member exchange, perceived utility, and organizational justice on performance appraisal satisfaction: Applying a moral judgment perspective. *Journal of Business Ethics, 119*(2), 265-273. https://www.jstor.org/stable/42921289

Fedor, D. B., Eder, R. W., & Buckley, M. R. (1989). The contributory effects of supervisor intentions on subordinate feedback responses. *Organizational Behavior and Human Decision Processes, 44*(3), 396-414. https://doi.org/10.1016/0749-5978(89)90016-2

Fernandes, S., & Rinaldo, A. A. (2018). The mediating effect of service quality and organizational commitment on the effect of management process alignment on higher education performance in Makassar, Indonesia. *Journal of Organizational Change Management, 31*(2), 410-425. https://doi.org/10.1108/JOCM-11-2016-0247

Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management accounting research, 20*(4), 263-282. https://doi.org/10.1016/j.mar.2009.07.003

Flamholtz, E. G., Das, T., & Tsui, A. S. (1985). Toward an integrative framework of organizational control. *Accounting, Organizations and Society, 10*(1), 35-50. https://doi.org/10.1016/0361-3682(85)90030-3

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research, 18*(1), 39-50. https://doi.org/10.2307/3151312

Fowler, F. J., Jr. (2013). *Survey research methods*. Sage publications.

Franco-Santos, M., Lucianetti, L., & Bourne, M. (2012). Contemporary performance measurement systems: A review of their consequences and a framework for research. *Management Accounting Research, 23*(2), 79-119. https://doi.org/10.1016/j.mar.2012.04.001

Franco-Santos, M., & Otley, D. (2018). Reviewing and theorizing the unintended consequences of performance management systems. *International Journal of Management Reviews, 20*(3), 696-730. https://doi.org/10.1111/ijmr.12183

Frare, A. B., Beuren, I. M., & Silva, E. S. (2022). Performance measurement system, organizational learning, and creativity. *Brazilian Administration Review, 19*(4), e210099. https://doi.org/10.1590/1807-7692bar2022210099

Garengo, P., Sardi, A., & Nudurupati, S. S. (2021). Human Resource Management (HRM) in the performance measurement and management (PMM) domain: A bibliometric review. *International Journal of Productivity and Performance Management, 71*(7), 3056-3077. https://doi.org/10.1108/IJPPM-04-2020-0177

Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information systems, 4*(1). https://doi.org/10.17705/1CAIS.00407

Getnet, B., Jebena, T., & Tsegaye, A. (2014). The effect of employees' fairness perception on their satisfaction towards the performance appraisal practices. *International Journal of Management and Commerce Innovations, 2*(1), 174-210.

Ghauri, E., & Neck, P. A. (2014). Performance appraisal and employees' perceptions. *International Journal of Contemporary Management, 2014,* 8-22. https://www.ejournals.eu/ijcm/2014/13(2)/art/5215/

Govender, M., & Bussin, M. H. (2020). Performance management and employee engagement: A South African perspective. *SA Journal of Human Resource Management, 18*(1), 1-19. https://doi.org/10.4102/sajhrm.v18i0.1215

Hair, J. F., Jr., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Jr., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review, 26*(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Hair, J. F., Jr., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. SAGE publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*, 115-135. https://doi.org/10.1007/s11747-014-0403-8

Herdlein, R., Kukemelk, H., & Türk, K. (2008). A survey of academic officers regarding performance appraisal in Estonian and American universities. *Journal of Higher Education Policy and Management*, *30*(4), 387-399. https://doi.org/10.1080/13600800802383067

Ikramullah, M., Van Prooijen, J.-W., Iqbal, M. Z., & Ul-Hassan, F. S. (2016). Effectiveness of performance appraisal: Developing a conceptual framework using competing values approach. *Personnel Review*¸*45*(2), 334-352. https://doi.org/10.1108/PR-07-2014-0164

Iqbal, M. Z. (2012). Expanded dimensions of the purposes and uses of performance appraisal. *Asian Academy of Management Journal, 17*(1).

Iqbal, M. Z., Akbar, S., & Budhwar, P. (2015). Effectiveness of performance appraisal: An integrated framework. *International Journal of Management Reviews*, *17*(4), 510-533. https://doi.org/10.1111/ijmr.12050

Iqbal, M. Z., Akbar, S., Budhwar, P., & Shah, S. Z. A. (2019). Effectiveness of performance appraisal: Evidence on the utilization criteria. *Journal of Business Research*, *101*, 285-299. https://doi.org/10.1016/j.jbusres.2019.04.035

Iqbal, M. Z., Rehan, M., Fatima, A., & Nawab, S. (2017). The impact of organizational justice on employee performance in public sector organization of Pakistan. *International Journal of Economics & Management Sciences, 6*(3), 1-6. https://doi.org/10.4172/2162-6359.1000431

Janudin, S. E., & Maelah, R. (2016). Performance measurement system in Malaysian public research universities: Is it contemporary? *International Journal of Management in Education*, *10*(3), 219-233. https://doi.org/10.1504/IJMIE.2016.077505

Jawahar, I., & Williams, C. R. (1997). Where all the children are above average: The performance appraisal purpose effect. *Personnel Psychology*, *50*(4), 905-925. https://doi.org/10.1111/j.1744-6570.1997.tb01487.x

Kalleberg, A. L., Marsden, P. V., Knoke, D., & Spaeth, J. L. (1996). Formalizing the employment relation: Internal labor markets and dispute resolution procedures. *Organizations in America: Analyzing Their Structures and Human Resource Practices, 87*.

Kampkötter, P. (2017). Performance appraisals and job satisfaction. *The International Journal of Human Resource Management*, *28*(5), 750-774. https://doi.org/10.1080/09585192.2015.1109538

King, S. M. (2020). *Employees lived experiences with the performance appraisal system* [Walden University].

Kuvaas, B. (2006). Performance appraisal satisfaction and employee outcomes: Mediating and moderating roles of work motivation. *The International Journal of Human Resource Management*, *17*(3), 504-522. https://doi.org/10.1080/09585190500521581

Kuvaas, B. (2007). Different relationships between perceptions of developmental performance appraisal and work performance. *Personnel Review*, 36(3), 378-397. https://doi.org/10.1108/00483480710731338

Kuvaas, B. (2011). The interactive role of performance appraisal reactions and regular feedback. *Journal of Managerial Psychology, 26*(2), 123-137. https://doi.org/10.1108/02683941111102164

Kuvaas, B., & Dysvik, A. (2009). Perceived investment in employee development, intrinsic motivation and work performance. *Human resource management journal*, *19*(3), 217-236. https://doi.org/10.1111/j.1748-8583.2009.00103.x

Lennox, R. D., & Wolfe, R. N. (1984). Revision of the self-monitoring scale. *Journal of Personality and Social Psychology, 46*(6), 1349-1364. https://doi.org/10.1037//0022-3514.46.6.1349

Levy, P. E., & Williams, J. R. (2004). The social context of performance appraisal: A review and framework for the future. *Journal of Management*, *30*(6), 881-905. https://doi.org/10.1016/j.jm.2004.06.005

Longenecker, C. O., Liverpool, P. R., & Wilson, K. Y. (1988). An assessment of manager/subordinate perceptions of performance appraisal effectiveness. *Journal of Business and Psychology*, *2*(4), 311-320. https://www.jstor.org/stable/25092153

Maimela, E. M., & Samuel, M. O. (2016). Perception of performance management system by academic staff in an open distance learning higher education environment. *SA Journal of Human Resource Management*, *14*(1), 1-11. https://journals.co.za/doi/abs/10.4102/sajhrm.v14i1.784

Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, *19*(4), 287-300. https://doi.org/10.1016/j.mar.2008.09.003

Mather, K., & Seifert, R. (2011). Teacher, lecturer or labourer? Performance management issues in education. *Management in Education*, *25*(1), 26-31. https://doi.org/10.1177/0892020610388060

McClendon, J. A., Deckop, J. R., Han, S., & Petrucci, T. (2020). A study of system execution of performance appraisal. *International Journal of Selection and Assessment*, *28*(3), 322-336. https://doi.org/10.1111/ijsa.12289

Memon, M. A., Salleh, R., Mirza, M. Z., Cheah, J. H., Ting, H., & Ahmad, M. S. (2020). Performance appraisal satisfaction and turnover intention: The mediating role of work engagement. *Management decision, 58*(6), 1053-1066. https://doi.org/10.1108/MD-06-2018-0685

Memon, M. A., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample size for survey research: review and recommendations. *Journal of Applied Structural Equation Modeling, 4*(2), 1-20.

Merriman, K. K. (2017). Extrinsic work values and feedback: Contrary effects for performance and well-being. *Human Relations*, *70*(3), 339-361. https://doi.org/10.1177/0018726716655391

Micheli, P., & Mari, L. (2014). The theory and practice of performance measurement. *Management Accounting Research*, *25*(2), 147-156. https://doi.org/10.1016/j.mar.2013.07.005

Mntonintshi, O., & Mtembu, V. (2018). When performance management fails: Attitudes and perceptions of staff at a Higher Education Institution. *Journal of Economics and Behavioral Studies*, *10*(6A (J)), 131-140. https://doi.org/10.22610/jebs.v10i6A.2669

Molefe, G. N. (2012). Performance measurement model and academic staff: A survey at selected universities in South Africa and abroad. *African Journal of Business Management*, *6*(15), 5249-5267. https://doi.org/10.5897/AJBM10.1394

Nazaruddin, I., Sofyani, H., & Saleh, Z. (2020). The role of ethical leadership, organizational support and participative decision-making in the implementation of effective performance measurement systems in higher education institutions. *MOJEM: Malaysian Online Journal of Educational Management, 9*(1), 38-57. https://mojem.um.edu.my/index.php/MOJEM/article/view/27960

Nazaruddin, I., Sofyani, H., Wahyuni, F., & Suryandari, E. (2021). Can performance appraisal satisfaction improve performance? A study at Indonesian universities. In M. H. Bilgin, H. Danis, E. Demir, & S. Vale (Eds.), *Eurasian Business Perspectives* (pp. 99-112). Springer. https://doi.org/10.1007/978-3-030-65085-8_6

Neely, A., Adams, C., & Crowe, P. (2001). The performance prism in practice. *Measuring Business Excellence, 5*(2), 6-13. https://doi.org/10.1108/13683040110385142

Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design: A literature review andresearch agenda. *International journal of operations & production management, 15*(4), 80-116. https://doi.org/10.1108/01443579510083622

Ng, T. W., & Feldman, D. C. (2008). The relationship of age to ten dimensions of job performance. *Journal of Applied Psychology*, *93*(2), 392-423. https://doi.org/10.1037/0021-9010.93.2.392

Otley, D. (1999). Performance management: A framework for management control systems research. *Management Accounting Research*, *10*(4), 363-382. https://doi.org/10.1006/mare.1999.0115

Ouchi, W. G. (1979). A conceptual framework for the design of organizational control mechanisms. *Management Science*, *25*(9), 833-848. https://doi.org/10.1287/mnsc.25.9.833

Pekkanen, P., & Pirttilä, T. (2024). Output measurement in professional public organizations: Insights from European justice systems. *International Journal of Productivity and Performance Management, 73*(11), 1-19. https://doi.org/10.1108/IJPPM-05-2021-0279

Pichler, S. (2012). The social context of performance appraisal and appraisal reactions: A meta-analysis. *Human Resource Management*, *51*(5), 709-732. https://doi.org/10.1002/hrm.21499

Pichler, S. (2019). Performance appraisal reactions: A review and research agenda. In L. A. Steelman, & J. R. Williams, *Feedback at work* (pp. 75-96). Springer. https://doi.org/10.1007/978-3-030-30915-2_5

Pichler, S., Beenen, G., & Wood, S. (2020). Feedback frequency and appraisal reactions: A meta-analytic test of moderators. *The International Journal of Human Resource Management, 31*(17), 2238-2263. https://doi.org/10.1080/09585192.2018.1443961

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology, 88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Pradhan, R. K., Panda, M., & Jena, L. K. (2017). Transformational leadership and psychological empowerment: The mediating effect of organizational culture in Indian retail industry. *Journal of Enterprise Information Management, 30*(1), 82-95. https://doi.org/10.1108/JEIM-01-2016-0026

Pratolo, S., Mukti, A. H., & Anwar, M. (2020). Result-based management implementation in higher education institution: Determinants and impact on performance. *Journal of Accounting and Investment, 1*(3), 580-601. https://doi.org/10.18196/jai.2103166

Qiu, M., Hu, B., Xu, Z., & Li, Y. (2015). Employees' psychological ownership and self-efficacy as mediators between performance appraisal purpose and proactive behavior. *Social Behavior and Personality: An international journal, 43*(7), 1101-1109. https://doi.org/10.2224/sbp.2015.43.7.1101

Rasit, Z. A., & Isa, C. R. (2014). The influence of comprehensive performance measurement system (CPMS) towards managers' role ambiguity. *Procedia-Social and Behavioral Sciences, 164*, 548-561. https://doi.org/10.1016/j.sbspro.2014.11.145

Replublic of Indonesia. (2005). Undang-undang (UU) No. 14 Tahun 2005 Tentang Guru dan Dosen. Central Government, Indonesia. https://peraturan.bpk.go.id/Details/40266/uu-no-14-tahun-2005

Roberson, Q. M., & Stewart, M. M. (2006). Understanding the motivational effects of procedural and informational justice in feedback processes. *British Journal of Psychology, 97*(3), 281-298. https://doi.org/10.1348/000712605X80146

Ruxton, G. D., & Neuhäuser, M. (2010). When should we use one-tailed hypothesis testing? *Methods in Ecology and Evolution, 1*(2), 114-117. https://doi.org/10.1111/j.2041-210X.2010.00014.x

Salleh, N. A. M., Jusoh, R., & Isa, C. R. (2010). Relationship between information systems sophistication and performance measurement. *Industrial Management & Data Systems, 110*(7), 993-1017. https://doi.org/10.1108/02635571011069077

Santati, P., Sulastri, B. P., Perizade, B., & Widiyanti, M. (2022). Strategic performance measurement system in higher education in Indonesia: New public management approach. *Sriwijaya International Journal of Dynamic Economics and Business, 6*(1), 107-130. https://doi.org/10.29259/sijdeb.v6i1.107-130

Saratun, M. (2016). Performance management to enhance employee engagement for corporate sustainability. *Asia-Pacific Journal of Business Administration, 8*(1), 84-102. https://doi.org/10.1108/APJBA-07-2015-0064

Schulz, A. K.-D., Wu, A., & Chow, C. W. (2010). Environmental uncertainty, comprehensive performance measurement systems, performance-based compensation, and organizational performance. *Asia-Pacific Journal of Accounting & Economics, 17*(1), 17-39. https://doi.org/10.1080/16081625.2010.9720850

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

Selvarajan, T., & Cloninger, P. A. (2012). Can performance appraisals motivate employees to improve performance? A Mexican study. *The International Journal of Human Resource Management, 23*(15), 3063-3084. https://doi.org/10.1080/09585192.2011.637069

Sharma, N. P., Sharma, T., & Agarwal, M. N. (2016). Measuring employee perception of performance management system effectiveness: Conceptualization and scale development. *Employee Relations*.

Shmueli, G., Ray, S., Estrada, J. M. V., & Chatla, S. B. (2016). The elephant in the room: Predictive performance of PLS models. *Journal of Business Research, 69*(10), 4552-4564. https://doi.org/10.1016/j.jbusres.2016.03.049

Skovoroda, R., & Bruce, A. (2017). Shifting the goalposts? Analysing changes to performance peer groups used to determine the remuneration of FTSE 100 CEOs. *British Journal of Management, 28*(2), 265-279. https://doi.org/10.1111/1467-8551.12209

Soewarno, N., Tjahjadi, B., & Anmariska, F. (2022). Does PMS influence the strategy pillars: OPP relationship? Evidence from HEIs in Indonesia. *International Journal of Productivity and Performance Management, 71*(1), 1-24. https://doi.org/10.1108/IJPPM-01-2019-0041

Sofyani, H., Nazaruddin, I., Putri, C. M., & Fathmaningrum, E. S. (2019). Exploring Performance Measurement System for Lecturer (PMSL): Comparison among Three Models in Indonesia, Singapore and Turkey. *Jurnal Reviu Akuntansi dan Keuangan, 9*(3), 269-294. https://doi.org/10.22219/jrak.v9i3.9639

Soltani, E. (2003). Towards a TQM-driven HR performance evaluation: An empirical study. *Employee Relations, 25*(4), 347-370. https://doi.org/10.1108/01425450310483370

Spinks, N., Wells, B., & Meche, M. (1999). Appraising the appraisals: Computerized performance appraisal systems. *Career Development International, 4*(2), 94-100. https://doi.org/10.1108/13620439910254713

Swanepoel, S., Makhubela, M., & Botha, P. A. (2016). Employees' perceptions of the effectiveness and fairness of performance management in a South African public sector institution. *SA Journal of Human Resource Management, 14*(1), 1-11. https://hdl.handle.net/10520/EJC-4c29fcdba

Tehseen, S., Ramayah, T., & Sajilan, S. (2017). Testing and controlling for common method variance: A review of available methods. *Journal of Management Sciences, 4*(2), 142-168. https://doi.org/10.20547/jms.2014.1704202

Tharenou, P. (1997). Organisational, Job, and Personal Predictors of Employee Participation in Training and Development. *Applied Psychology, 46*(2), 111-134. https://doi.org/10.1111/j.1464-0597.1997.tb01220.x

Tjahjadi, B., Soewarno, N., Astri, E., & Hariyati, H. (2019). Does intellectual capital matter in performance management system-organizational performance relationship? Experience of higher education institutions in Indonesia. *Journal of Intellectual Capital, 20*(4), 533-554. https://doi.org/10.1108/JIC-12-2018-0209

Tziner, A., Murphy, K. R., Cleveland, J. N., & Roberts-Thompson, G. P. (2001). Relationships between attitudes toward organizations and performance appraisal systems and rating behavior. *International Journal of Selection and Assessment, 9*(3), 226-239. https://doi.org/10.1111/1468-2389.00176

Úbeda-García, M., Claver-Cortés, E., Marco-Lajara, B., Zaragoza-Sáez, P., & García-Lillo, F. (2018). High performance work system and performance: Opening the black box through the organizational ambidexterity and human resource flexibility. *Journal of Business Research, 88*, 397-406. https://doi.org/10.1016/j.jbusres.2017.12.045

Ukko, J., Hildén, S., Saunila, M., & Tikkamäki, K. (2017). Comprehensive performance measurement and management–innovativeness and performance through reflective practice. *Journal of Accounting & Organizational Change, 13*(3), 425-448. https://doi.org/10.1108/JAOC-09-2015-0070

Vroom, V. H. (1964). *Work and motivation*. Wiley.

Vroom, V., Porter, L., & Lawler, E. (2005). Expectancy theories. In J. B. Miner, *Organizational behavior* (vol. 1, pp. 94-113). Routledge.

Walsh, K., & Fisher, D. (2005). Action inquiry and performance appraisals: Tools for organizational learning and development. *The Learning Organization, 12*(1), 26-41. https://doi.org/10.1108/09696470510574241

Yang, J.-S., & Hung, H. V. (2017). Happy workers value effort, sad workers value reward. *The International Journal of Human Resource Management, 28*(11), 1591-1624. https://doi.org/10.1080/09585192.2015.1128458

Youngcourt, S. S., Leiva, P. I., & Jones, R. G. (2007). Perceived purposes of performance appraisal: Correlates of individual-and position-focused purposes on attitudinal outcomes. *Human Resource Development Quarterly, 18*(3), 315-343. https://doi.org/10.1002/hrdq.1207

Zakuan, N., Muniandy, S., Saman, M. Z. M., Ariff, M. S. M., Sulaiman, S., & Abd Jalil, R. (2012). Critical success factors of total quality management implementation in higher education institution: A review. *International Journal of Academic Research in Business and Social Sciences, 2*(12), 19.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage Learning.

Authors

Ietje Nazaruddin
Universitas Muhammadiyah Yogyakarta, Faculty of Economics and Business, Department of Accounting
Brawijaya Street, Geblagan, Tamantirto, Kasihan Sub-district, Bantul Regency, Yogyakarta Special Region 55183, Indonesia.
ietje.nazaruddin@umy.ac.id

Hafiez Sofyani
Universitas Muhammadiyah Yogyakarta, Faculty of Economics and Business, Department of Accounting
Brawijaya Street, Geblagan, Tamantirto, Kasihan Sub-district, Bantul Regency, Yogyakarta Special Region 55183, Indonesia.
hafiez.sofyani@umy.ac.id

Tiyas Puji Utami
Universitas Muhammadiyah Yogyakarta, Directorate of Postgraduate Program, Master's of Accounting
Brawijaya Street, Geblagan, Tamantirto, Kasihan Sub-district, Bantul Regency, Yogyakarta Special Region 55183, Indonesia.
tiyas.puji.feb18@umy.ac.id

Authors' contributions

1st author: conceptualization (lead), data curation (lead), formal analysis (lead), investigation (lead), methodology (lead), resources (lead), software (lead), supervision (lead), validation (lead), visualization (lead), writing – original draft (lead), writing – review & editing (lead).

2nd author: conceptualization (supporting), data curation (equal), formal analysis (supporting), methodology (equal), software (equal), supervision (equal), validation (equal), writing – original draft (equal).

3rd author: data curation (supporting), formal analysis (supporting), methodology (supporting), project administration (lead), software (supporting), supervision (supporting), validation (supporting), visualization (supporting), writing – original draft (supporting), writing – review & editing (supporting).