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INNOVATIVE BAHAVIOR IN HIGER EDUCATION INSTITUTION: DOES PERFORMANCE MEASUREMENT SYSTEMS MATTERS?

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ABSTRACT

Purpose: *This study aims to empirically examine the direct and indirect effects of performance measurement systems on innovative behavior and analyze the role of psychological empowerment as an intervening variable.*

Methodology/approach: *The study adopts a survey research design, utilizing a questionnaire distributed directly to respondents. Data were collected from 133 respondents representing eight universities in Yogyakarta. A purposive sampling technique was employed to select the sample. Data analysis was conducted using structural equation modeling.*

Findings: *The results indicate that performance measurement systems directly impact innovative behavior. Additionally, the study reveals an indirect influence of performance measurement systems on innovative behavior through psychological empowerment.*

Practical implications: *The study highlights the importance of developing effective performance measurement systems and creating an environment that supports psychological empowerment to enhance innovative behavior within organizations.*

Originality/value: *The novelty of this research lies in the inclusion of psychological empowerment as an intervening variable in the relationship between performance measurement systems and innovative behavior. The findings provide practical insights for practitioners in designing effective innovation strategies and offer directions for future research in this field.*

KEYWORDS: *Higher Education Institutions; Innovative Behavior; Performance Measurement Systems; Psychological Empowerment.*

ABSTRAK

Tujuan Penelitian: Penelitian ini bertujuan untuk menguji secara empiris pengaruh langsung maupun tidak langsung sistem pengukuran kinerja terhadap *innovative behavior*, serta menganalis peran *psychological empowerment* sebagai variabel *intervening*.

Metode/pendekatan: Penelitian ini merupakan penelitian survei dengan menggunakan kuesioner yang didistribusikan secara langsung kepada responden. Data yang diperoleh terdiri dari 133 responden pada 8 perguruan tinggi di Yogyakarta. Pengambilan sampel menggunakan teknik purposive sampling. Analisis data dilakukan dengan menggunakan *structural equation model*.

Hasil: Hasil penelitian menunjukkan bahwa sistem pengukuran kinerja berpengaruh langsung terhadap *innovative behavior*. Selain itu sistem pengukuran kinerja berpengaruh tidak langsung terhadap *innovative behavior* melalui *psychological empowerment*.

Implikasi praktik: Pentingnya mengembangkan sistem pengukuran kinerja yang efektif dan menciptakan lingkungan kerja yang mendukung psychological empowerment untuk meningkatkan perilaku inovatif di dalam organisasi.

Orisinalitas/kebaharuan: Kebaruan penelitian ini terletak pada *psychological empowerment* sebagai variabel *intervening* pada hubungan sistem pengukuran kinerja dengan *innovative behavior*. Temuan penelitian ini dapat memberikan wawasan praktis bagi praktisi dalam merancang strategi inovasi yang efektif dan juga memberikan arahan bagi penelitian masa depan dalam bidang ini.

KATA KUNCI: Pemberdayaan Psikologis; Perguruan Tinggi; Perilaku Inovatif; Sistem Pengukuran Kinerja;

INTRODUCTION

The industrial revolution 4.0 and the development of the digitalization era have resulted in an increasingly competitive environment, requiring organizations to continue to innovate (Anderson *et al.*, 2014, Schwarzmüller *et al.*, 2018). The behavior of innovation has become more vital than ever before (Curzi *et al.*, 2019). This condition also applies to higher education institutions, hence the need to stimulate academics to exhibit innovative behavior (Amin *et al.*, 2021), as an effort to respond to the demands of change in order to survive in an uncertain business environment, increasingly dynamic and intense competition (Akram *et al.*, 2016). Innovative behavior of academics is expected to create a learning environment that enhances students' understanding and knowledge. Innovative behavior will maintain the sustainability of Higher Education Institutions (HEIs) services and improve industry competitiveness (Ayoub *et al.*, 2023, Jia *et al.*, 2022).

The importance of innovative behavior for academics is because lecturers are service providers in the higher education sector, so they are required to innovate in the midst of intense competition between state, private and foreign universities (Qurbani and Solihin, 2021). Innovative behavior serves as a key to competitive advantage when facing a dynamic competitive environment (Curzi *et al.*, 2019, Anderson *et al.*, 2014, Schwarzmüller *et al.*, 2018). However, regrettably, research on the innovative behavior of lecturers is still rarely researched, especially in developing countries such as Indonesia. Previous studies on innovative behavior, such as Curzi *et al.* (2019) examined employees of digital companies, (Hamid and Durmaz, 2021) in companies in Iraq, Mutonyi *et al.* (2021) in hospitals in Norway, Suprapti *et al.* (2020) in public health centers, Rhee *et al.* (2017) in the manufacturing sector in Korea, and Elidemir *et al.* (2020) in the hospitality sector in Turkey, highlight the need for the development of research on innovative behavior, especially in the higher education sector.

Innovative behavior can be encouraged by performance measurement systems (Bowen and Ostroff, 2004, Canet-Giner *et al.*, 2020, Jia *et al.*, 2022), this is in line with goal setting theory. Goal setting theory, proposed by Locke (1968) is a motivational theory that explains why individuals act based on predetermined goals. Goals are defined as actions taken by individuals consciously to achieve and obtain their desires (Locke and Latham, 2013). Based on goal setting theory, a lecturer who understands organizational goals and individual goals will affect their performance behavior (Waheed *et al.*, 2018). The tool used to influence lecturers to have attitudes and behaviors that are in line with organizational strategies is the performance measurement system (Datta *et al.*, 2005, Waheed *et al.*, 2018). This is in line with the findings of Canet-Giner *et al.* (2020), employees believe that performance measurement is designed to achieve organizational goals that have a clear strategic direction to increase innovative behavior.

This study examines and provides empirical evidence on the relationship of Performance Measurement System (PMS) to innovative behavior in academics at HEIs. According to (Waheed *et al.*, 2018), psychological empowerment has a direct positive relationship to innovative behavior in employees. Psychological empowerment will help employees to behave independently, have an active orientation, feel competent to carry out their work which in turn can facilitate innovative behavior (Fernandez and Moldogaziev, 2013, Wallace *et al.*, 2011, Liu *et al.*, 2019, Wang *et al.*, 2015, Spreitzer, 1995, Thomas and Velthouse, 1990). Furthermore, Waheed *et al.* (2018) explained that PMS can increase employees' sense of responsibility so that employees will have innovative attitudes and

behaviors. Waheed *et al.* (2018) argued that in addition to the direct relationship, PMS can have an indirect relationship mediated by psychological empowerment in influencing innovative behavior. Other research suggests that psychological empowerment is a process that helps in increasing feelings of self-efficacy among employees (Conger and Kanungo, 1988, Spreitzer, 2008). Thus, this research will add the variable of psychological empowerment because empowerment is not only the delegation of authority and power to subordinates, but also an employee's personal beliefs about their role and relationship with the organization.

Practically, this research will provide recommendations for the management of HEIs to increase innovative behavior by improving the quality of existing PMS to achieve organizational goals, besides that this research also wants to emphasize that with psychological empowerment, lecturers will feel more responsible, feel comfortable to do their work which will increase innovative behavior in the face of existing challenges and pressures. Theoretically, this study will contribute to the literature on innovative behavior from the perspective of the field of management accounting using goal setting theory, which is still relatively rare in the context of HEIs (Curzi *et al.*, 2019).

The relationship between PMS and innovative behavior has a positive direction. Findings from (Canet-Giner *et al.*, 2020) and (Waheed *et al.*, 2018) which state that PMS has a positive relationship with innovative behavior in employees. Performance measurement motivates employees to behave consistently according to organizational strategies in achieving organizational goals. Employee response to performance measurement is very important because it can produce attitudes and behaviors in accordance with organizational goals (Brown *et al.*, 2010, Daileyl and Kirk, 1992). Performance measurement serves as a means for employees and leaders to conduct regular evaluation meetings, communicate feedback transparently, and openly discuss various emerging issues (Bednall *et al.*, 2014). PMS can increase employee confidence and help them understand their role in the organization (Lind and Tyler, 1988).

Research has revealed (Bekele *et al.*, 2014, Fletcher and Williams, 1996, Darehzereshki, 2013) that employees who perceive quality performance measurements will show positive attitudes and behaviors, such as increased job satisfaction, affective commitment, and performance. To support this argument, other studies have also found that the quality of the performance measurement system is positively related to innovative behavior (Bednall *et al.*, 2014). Moreover, employee perceptions of performance measurement will affect the commitment level to achieving organizational goals and will ultimately be reflected in information-sharing and innovation behavior (Sengottuvel and Aktharsha, 2016). Employees satisfied with performance measurements will be encouraged and motivated to adopt positive behaviors, such as developing and implementing innovative ideas in their organizations (Waheed *et al.*, 2018). They will also feel obliged to repay the company through increased behavior, such as creative contributions (Ismail and Rishani, 2018). Therefore, the following hypothesis is proposed:

***H*$_1$:** *The performance measurement system positively affects innovative behavior.*

The quality of the performance measurement system is reflected in its quality of fairness, communication, trust, and clarity. Under goal setting theory, it is explained that individuals who understand the goal will influence their work behavior. In this case, psychological empowerment is a process that can increase employee confidence, not only by giving authority to subordinates but also by a person's personal belief about his role and relationship

with the organization (Spreitzer, 1995, Waheed *et al.*, 2018), the quality of performance measurement can increase perceptions about the meaning of work since individuals gain a better understanding of work in achieving organizational goals. In addition, performance information will increase the perception of meaning in individual work roles (Appuhami, 2019, Moulang, 2013).

Because individuals can engage in dialogue about developing their goals and performance targets, perceptions of self-determination are also influenced. It can provide information about expectations that can generate confidence to start and complete tasks. Here, the quality of performance measurement can influence perceptions of the impact of their work; for example, an engagement-oriented environment emphasizes individual contribution, helps employees believe they are contributing to their organization, and seeks sufficient information to see the effects of their actions (Spreitzer, 1995). The existence of greater trust, communication, fairness, and clarity in the performance measurement system will increase individuals' psychological empowerment or intrinsic motivation. The implementation of psychological empowerment can be carried out periodically and intensively and continues to provide maximum output in achieving employee independence. Specifically, lecturers' awareness of the importance of achieving performance can maintain the quality and quality of the education produced. Therefore, the following hypothesis is proposed:

H₂: *The quality of the performance measurement system positively affects psychological empowerment.*

Psychological empowerment will lead to proactive behavior of academics in facing competitive competition in the world of education. This behavior is driven by internal motivation to adapt to educational developments actively (Helmy *et al.*, 2019). Goal setting theory can help employees to set clear and measurable goals, so as to motivate to achieve goals in innovative ways. Meanwhile, psychological empowerment can give academics a greater sense of control and autonomy, which can motivate them to think creatively and innovatively at work. Therefore, the combination of goal setting theory and psychological empowerment can potentially influence proactive and innovative behavior (Chen *et al.*, 2023). Instilling proactive behavior can be optimized by developing the quality of academics through psychological empowerment (Waheed *et al.*, 2018).

In this case, academics' awareness of the importance of work can encourage innovative behavior in generating new ideas according to the development of the world of education. Psychological empowerment can increase academics' sense of attachment to the organization and increase their trust in the organization (Vu, 2020). This can encourage academics to participate in innovative behavior and contribute to the success of the organization. Psychological empowerment allows employees to realize their potential and thus be innovative in their work, group or organization. Research by Helmy *et al.* (2019) and Kang *et al.* (2017) shows that psychological empowerment has a positive influence in increasing innovative work behavior.

Based on the description above, it can be concluded that with psychological empowerment, a person will be more creative, which will then be more innovative. Therefore, the following hypothesis is proposed:

H₃: *Psychological empowerment positively affects innovative behavior.*

Previous research shows that the performance of employees who have a high level of psychology will be superior (Liden *et al.*, 2000). It also proves that psychological

empowerment of employees plays an important role in developing and promoting innovative behavior among employees (Spreitzer, 1995).

For example, Knol and Van Linge (2009) the find suggest that psychological empowerment has a positive impact on innovative behavior. In connection with the goal-setting theory, when individuals are empowered with responsibilities, knowledge, and participation in decision-making, they are more likely to feel aligned with the organizational objectives (Waheed *et al.*, 2018). They also feel they have more control over their jobs and work processes. Employee performance, measured by PMS, will make it easier for organizations to evaluate the achievement of innovative goals, especially in the context of higher education, such as developing innovative curricula, encouraging relevant research, and developing creative teaching methods (Lestari and Salomo, 2022, Deswanti *et al.*, 2023). The existence of diverse demands, evaluated and measurable lecturer performance will increase innovative behavior through psychological empowerment, this is because lecturers will feel that they are not burdened with their work and feel more connected to organizational goals. By encouraging positive personal perceptions and high intrinsic motivation, individuals are more likely to engage in innovative behavior, generate new ideas, and contribute to change and progress in higher education. (Ismail and Rishani, 2018). Therefore, the following hypothesis is proposed:

H₄: *The performance measurement system positively affects innovative behavior through psychological empowerment.*

Departing from the theoretical framework and hypotheses developed above, the research model was formulated as depicted in Figure 1.

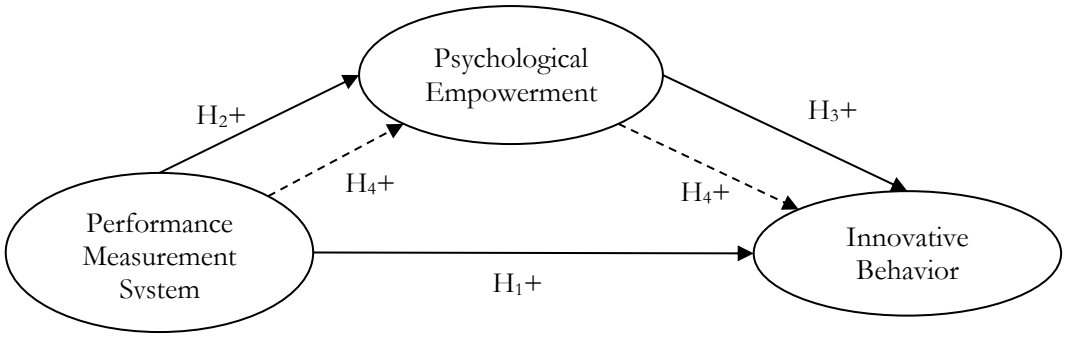

Figure 1. Research Model

METHOD

Penelitian ini dilakukan di beberapa perguruan tinggi di Daerah Istimewa Provinsi Yogyakarta. Lokasi tersebut dipilih karena Yogyakarta dikenal sebagai kota pelajar dan pusat pendidikan yang selaras dengan banyak universitas besar (Utari and Hadi, 2020). Kriteria sampel dalam penelitian ini adalah akademisi/dosen berstatus tetap yang telah bekerja minimal tiga tahun sejak merasakan dampak penilaian kinerja. Terkait dengan itu, kinerja seorang dosen dinilai setelah tiga tahun berada di institusi pendidikan tinggi. Responden dengan kriteria tersebut dinilai telah merasakan dampak dari sistem pengukuran kinerja yang diterapkan kampus.

A performance measurement system is a system used to evaluate how well an organization or employee is performing in achieving predetermined goals (Chen *et al.*, 2023). Furthermore, innovative behavior is proactive behavior that is voluntary and aims to generate, disseminate, and implement new ideas in the workplace (Curzi *et al.*, 2019). The intervening variable of psychological empowerment is a conceptual framework relating to employees' cognitive and emotional states, which are influenced by the work environment and organizational practices (Waheed *et al.*, 2018).

The data collection technique in this study was to distribute questionnaires using a 5-point Likert scale to measure all variables given to respondents.Research (Revilla *et al.*, 2014) shows that if researchers want to use an agree-disagree rating scale, they should use a Likert scale of 5. By using a 5-point scale, researchers can obtain data that is easier to interpret and easier to carry out statistical analysis (Hair *et al.*, 2021).

Data collection utilized two versions of the survey: paper-based version and electronic internet-based versions. Each one was designed according to the suggestions made by (Paxson *et al.*, 2011). Internet-based surveys were password protected to ensure only intended recipients responded, and controls were in place to protect surveys from data loss. Responses were recorded on a dedicated web page and automatically downloaded to a spreadsheet to indicate response level. This approach also provides the advantage of a high response rate.

The collected data were then analyzed using the Structural Equation Model (SEM) statistical analysis method. Partial Least Square (PLS) is a latent variable modeling technique used by several dependent constructs (Fornell and Larcker, 1981) and has been used in many business and accounting studies (Ittner *et al.*, 2003, Sofyani and Akbar, 2018, Wijayanti *et al.*, 2020). According to (Akbar *et al.*, 2012), the PLS approach is suitable for this study due to minimal data assumptions, relatively small sample size, and weak theoretical foundation.

Before testing the hypothesis using Partial Least Square (PLS), the researchers tested Common Method Variance (CMV) to find out that the data used had no potential for bias or error, such as self-reported bias, complexity, ambiguity, and questionnaire scale format (MacKenzie and Podsakoff, 2012). According to (Hair *et al.*, 2021), researchers must follow a multistage process of evaluating the outer and inner models using PLS. The outer model is the measurement model (construct validity and reliability test), used to evaluate the relationship between the indicator variables and the corresponding constructs. Meanwhile, the inner or structural model indicates the relationship between the exogenous construct variables and the endogenous variables being evaluated.

RESULTS AND DISCUSSION

Table 1. Descriptive Statistical Results

Characteristic	Description	Number	Percentage (%)
Gender	Number of Respondents	133	100.0
	Man	64	48.1
	Woman	69	51.9
Work Experience	Number of Respondents	133	100.0
	Over 3-8 Years	34	25.6
	More Than 8-13 Years	19	14.3
	Over 13-18 Years	10	7.5
	Over 18 Years	70	52.6
Education	Number of Respondents	133	100.0
	S2	88	66.2
	S3	45	33.8
Academic Position	Number of Respondents	133	100.0
	Instructors	52	39.1
	AssistantProfessor	47	35.3
	Associate Professor	33	24.8
	Professor	1	0.8
Study Program Accreditation	Number of Respondents	133	100.0
	Accredited Superior/A	114	85.7
	Accredited Very Good/B	15	11.3
	Accredited Good/C	4	3.0

Source: Primary data processed by the researchers, 2023

Questionnaires were distributed for two months, and 900 questionnaires were successfully distributed to respondents at public and private universities in the Special Region of Yogyakarta Province. The number of questionnaires collected back was 133 for analysis, while the remaining 767 questionnaires were not returned. Table 1 shows statistical data on the characteristics of the respondents, displaying details of the identity of the respondents based on gender, age, level of education, position, and length of service.

Since this study used the PLS data analysis technique, prior to testing the hypothesis, the instrument's validity and reliability were first tested through an assessment of the measurement model. Based on the results of descriptive statistical tests, 133 respondents indicated that all research variables had an actual average value greater than the theoretical average value. Thus, the average effect of all variables was high.

Based on the output in Table 2, several indicators had an outer loading value below 0.6. Meanwhile, the requirement for a construct to be valid must meet the outer loading value above 0.6 or be deleted (Chinn, 1998). Thus, indicators below 0.6 had to be deleted, including F1, I2, SD2, and SD3. After reprocessing, there were still two indicators with values below 0.6. These indicators were I3 and SD1. Hence, these two indicators had to be removed since they were considered invalid to fulfill the rule of thumb, set with a value greater than 0.6. After modification, it was obtained that all indicators in each variable had fulfilled the rule of thumb, i.e., all indicators were declared valid. In addition, the Average Variance Extracted value in Table 2 shows that each variable had fulfilled the established rule of thumb, more than 0.5, indicating that all variables in this study were valid.

Code	Indicator	Loading
Psychological Empowerment (PE) – AVE: 0.539		
Meaning (M)		
M1	The work I do as a lecturer is useful to me financially.	0.652
M2	Every activity of my work as a lecturer is very meaningful personally.	0.774
M3	The work I do as a lecturer is important to me.	0.819
Competency (C)		
C1	With my abilities, I am sure I can work well.	0.760
C2	I believe in my ability to carry out my work activities.	0.778
C3	I mastered the skills required for my job.	0.701
Impact (I)		
I1	The performance of my job has an impact on my work unit.	0.636
Performance Measurement System (PMS) – AVE: 0.645		
Fairness (F)		
F2	The performance measurement of the lecturers' performance on my campus is carried out fairly.	0.775
F3	The lecturer performance measurement system on my campus can be trusted.	0.779
F4	The implementation of my performance appraisal is free from bias.	0.779
Communication (CM)		
CM1	My superiors and I regularly review progress in achieving my performance targets.	0.730
CM2	My supervisor guides how to improve my performance.	0.761
CM3	My boss allows me to express my feelings when my performance is evaluated.	0.815
Trust (T)		
T1	My supervisor/appraiser has the competence to evaluate my performance.	0.836
T2	My supervisor/appraiser understands in detail the work I do.	0.780
T3	My supervisor/assessor understands how to respond to my work.	0.845
T4	I have confidence and trust that my supervisor/appraiser evaluates my performance fairly.	0.851
T5	I trust my supervisor/appraiser reports accurately on my performance.	0.825
Clarity (CL)		
CL1	I received an explanation from my supervisor that the results of my performance evaluation would be the basis for certain policies, such as salary increases, promotions, termination of employment, incentives, and others.	0.776
CL2	I have obtained information about the performance measurement criteria to evaluate my performance.	0.862
CL3	I have received an explanation that my performance will be evaluated periodically.	0.817
Innovative Behavior (IB) – AVE: 0.577		
IB1	I like using new technology to support my work as a lecturer.	0.661
IB2	I use creative ideas in doing my job as a lecturer.	0.720
IB3	I communicate my creative ideas to other lecturers.	0.795
IB4	I seek and obtain the necessary funds to implement new ideas.	0.794
IB5	I make the necessary plans and schedules to implement my new ideas.	0.799
IB6	I find it easy to find innovative ideas to support my work as a lecturer.	0.779

Table 2. Outer Loading Test Results

* Indicators with negative nuances are scaled in reverse; AVE = Average Variance Extracted

Source: *Output of smartPLS v4.0*

Table 3. Discriminant Validity Test

Construct	Innovative Behavior	Psychological Empowerment	Performance Measurement System
Innovative Behavior	**0.760**		
Performance Measurement System	0.527	**0.803**	
Psychological Empowerment	0.423	0.474	**0.734**

Source: *Output of smartPLS v4.0*

Table 4. Raliability Test Results

Construct	Cronbach's Alpha	Composite Reliability
Innovative Behavior	0.854	0.868
Performance Measurement System	0.958	0.961
Psychological Empowerment	0.856	0.859

Source: *Output of smartPLS v4.0*

Table 5. Hypothesis Results

Direct Relationship	Code	Original Sample	T statistic	P-value	Conclusion
Performance Measurement System → Innovative Behavior	H1+	0.421	4.243	0.000	Supported
Performance Measurement System → Psychological Empowerment	H2+	0.474	6.723	0.000	Supported
Psychological Empowerment → Innovative Behavior	H3+	0.223	2.485	0.013	Supported
Indirect Relationship					
Performance Measurement System → Psychological Empowerment → Innovative Behavior	H4+	0.106	2.493	0.013	Partial Mediation

Source: *Output of smartPLS v4.0*

Table 3 reveals that the AVE root values for all variables in this study were greater than the relationship values between variables (Fornell and Larcker, 1981). Therefore, it can be said that all these variables were valid.

The reliability test results to ensure the consistency of indicators in measuring constructs also align with the rules (Table 4). It can be seen from the reliability values of Cronbach's Alpha and Composite, which were greater than 0.6 and 0.7, respectively (Chinn, 1998, Hair *et al.*, 2021). Therefore, since the measurement model assessment results met all the specified requirements, hypothesis testing with structural assessment could be continued (Table 5).

In measuring the inner model, the Adjusted R^2 value was used to measure the variation level in the independent model changes to the dependent variable (Chinn, 1998). The higher the Adjusted R^2 value, the better the prediction model of the research model. Table 5 shows that innovative behavior was influenced by 30.6%, psychological empowerment was impacted by 21.9% by the independent variables, and other factors outside this study influenced the rest. Three indicators must be considered as testing criteria for the hypothesis, including the original sample, t-statistics,and p-value. While the original sample is used to infer the direction of the hypothesis (positive and negative), the t-statistic and p-value are employed

to show significance. It can be significant if the t-statistic value is more than 1.66 and the p-value is less than 0.05.

In this study, a prediction test was carried out to see the predictive ability of the built model. The magnitude of Q^2 or Q-square can measure how well the observed values produced by the model and its parameter estimates are (Ghozali, 2016). The Q^2 value ranges from $0 < Q^2 < 1$, where the closer to 1, the better the model (Chinn, 1998).

Apart from being seen from the Q-Square, the better level of predictive power can be shown by the PLS-SEM RMSE and MAE indicator values, which are lower than the linear regression model (LM). If most of the same, the PLS-SEM indicator has a lower RMSE and MAE than the linear regression model (LM), which denotes that the PLS-SEM model has medium predictive power (Shmueli *et al.*, 2019).

In the prediction test results in Table 6, the Q-square value for the endogenous variable $Q^2 > 0$ was obtained, so it had a good observation value. All PLS-SEM_RMSE values were lower than LM_SEM_RMSE. However, one indicator was obtained with a higher PLS-SEM_MAE value than LM-SEM_MAE, namely at I1. The percentage of indicators with PLS-SEM_MAE, which was higher than LM-SEM_MAE, was 63.5%, suggesting that 65.7% of the indicators had a good level of prediction. Consequently, the prediction test results denote the presence of medium predictive power. In other words, any change in the psychological empowerment variable as an intervention has a high predictive rate of change in innovative behavior.

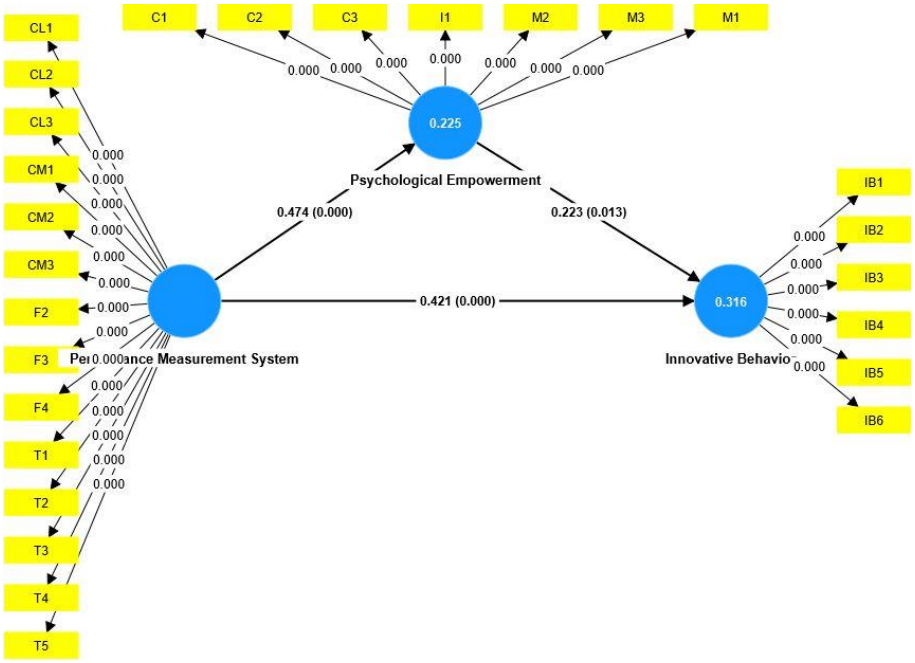

Figure 2. Structural Model Assessment Results

Table 6. Prediction Results

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
IB1	0.075	0.552	0.479	0.579	0.499
IB2	0.081	0.552	0.480	0.586	0.500
IB3	0.188	0.563	0.438	0.593	0.459
IB4	0.250	0.690	0.567	0.760	0.601
IB5	0.108	0.705	0.542	0.796	0.607
IB6	0.120	0.662	0.510	0.732	0.552
C1	0.046	0.533	0.477	0.563	0.494
C2	0.078	0.497	0.455	0.525	0.461
C3	0.075	0.489	0.446	0.539	0.472
I1	0.068	0.622	**0.537**	0.615	0.498
M2	0.139	0.591	0.486	0.608	0.486
M3	0.112	0.551	0.460	0.583	0.470
M1	0.179	0.535	0.468	0.578	0.469

IB: Innovative Behavior; Psychological Empowerment (C: Competency; I: Impact; M: Meaning)

Source: *Output of smartPLS v4.0*

The Effect of Performance Measurement Systems on Innovative Behavior

Based on Table 5, the original sample value is positive with a value of 0.421, so the test direction is in accordance with the proposed hypothesis. Furthermore, the t-statistic value is 4.243, which is greater than 1.66, and the p-value is 0.00, <0.05. This indicates that all criteria in hypothesis testing have been met or H1 is supported. Thus, it can be concluded that the performance measurement system significantly has a positive effect on innovative behavior.

This result is consistent with research (Bednall *et al.*, 2014) the find quality of the performance measurement system is positively related to innovative behavior. Employee perceptions of performance measurement will affect commitment to achieving organizational goals and will ultimately be reflected in information sharing and innovation. (Sengottuvel and Aktharsha, 2016). This research is also in line with the results of the study Waheed *et al.* (2018), In a study conducted at HEIs in Pakistan, the results stated that lecturers will have positive and innovative behavior because of the existence of PMS facilities that provide opportunities for lecturers to provide feedback, evaluation and communication to achieve organizational goals. Based on the dimensions used, lecturers will have innovative behavior because lecturers feel fair, given tools to communicate, trust, and clarity about their performance.

The Effect of Performance Measurement Systems on Psychological Empowerment

Table 5 exhibits that the original sample value was positive with a value of 0.474, so the direction of the test is in accordance with the proposed hypothesis. Furthermore, the t-statistic value of 6.723 means that it was greater than 1.66, and the p-value of 0.00 indicates it was <0.05. It demonstrates that all the hypothesis testing criteria had been met or **H2 was supported**. In conclusion, the performance measurement system significantly positively affected psychological empowerment.

The results of testing the hypothesis on the effect of the quality of the performance measurement system on psychological empowerment unveiled that the quality of the performance measurement system had a significant positive effect on psychological empowerment. The test results support **H2**, i.e., the quality of the performance measurement system had a positive effect on psychological empowerment. These results also agree with previous research, showing that employee empowerment exhibited a positive effect on all four dimensions of the quality of a performance measurement system (Baird *et al.*, 2020). Previous findings also suggest empowering employees, both physically and psychologically, to improve the quality of the performance measurement system. With empowered employees, they feel that there is greater trust, communication, fairness, and clarity. Hence, it can be inferred that the higher the psychological empowerment the university provides to the lecturers, the quality of the performance measurement system will also increase.

The Effect of Psychological Empowerment on Innovative Behavior

From Table 5 the original sample value was positive with a value of 0.223 so the direction of the test is consistent with the proposed hypothesis. Moreover, the t-statistic value was 2.485 which means it was greater than 1.66 and the p-value was 0.014 demonstrating that it was less than 0.05. It recommends that all the criteria in hypothesis testing be met or that **H3 is supported**. As such, in conclusion, psychological empowerment had a significant positive effect on innovative behavior.

When physically and psychologically empowered, lecturers display innovative work behavior (Jung *et al.*, 2003). These results also corroborate previous studies, which showed that psychological empowerment significantly affected innovative behavior (Singh and Sarkar, 2012). The emergence of innovative work behavior is because lecturers feel that their role in the work is valuable. When teachers feel that they have control over work situations, can make their decisions, can influence others, have meaning in their work, and have the inspiration to achieve an exciting future, they tend to generate more creative and innovative efforts to improve performance (Afsar and Badir, 2016). An organization that pays more attention to employee empowerment will also trigger the growth of innovative work behavior among employees (Yildiz *et al.*, 2019). This opinion is also reinforced by (Amalia and Wulansari, 2017), who said employees who feel empowered by the organization could provide more innovative work behavior.

The Effect of Performance Measurement Systems on Innovative Behavior through Psychological Empowerment

Table 5 reveals that since the original sample value was positive with a value of 0.106 the direction of the test is in harmony with the proposed hypothesis. In addition, the t-statistic value was 2.493 greater than 1.66 and the p-value was 0.013 < 0.05. It indicates that all the criteria in hypothesis testing had been met or that **H4 is supported**.

Based on the results of hypothesis testing, it is found that psychological empowerment partially mediates the relationship between PMS and innovative behavior in HEIs. With a quality PMS, it will increase psychological empowerment. Lecturers who feel that PMS in their organization is of good quality, will feel that their work meets their needs financially, their performance supports organizational goals, and their work is in accordance with their competencies. So that lecturers will have positive behaviors such as being able to pour and implement their creative ideas, and being able to obtain funding support from both internal and external sources. Lecturers who are satisfied with performance measurement will be encouraged and motivated to adopt positive behaviors, such as developing and implementing

innovative ideas in their organization (Waheed *et al.*, 2018). They will also feel obliged to give back to the organization through improved behavior, such as creative contributions in the form of innovative work behavior (Ismail and Rishani, 2018). In accordance with goal setting theory, by setting clear goals and empowering individuals to achieve them, organizations can create an environment that encourages high performance, innovation, and a strong sense of ownership of organizational outcomes with measurable and strategic performance measurement. This is because psychological empowerment involves lecturers' awareness of their work behavior, so a quality performance measurement system is needed to improve innovative work behavior. This research provides theoretical and practical implications, theoretically this research expands the literature regarding increasing innovative behavior by improving PMS in higher education. In addition, the results of this study make a practical contribution as a recommendation for higher education management to improve the quality of PMS to increase the innovative behavior of lecturers through psychological empowerment.

CONCLUSION

This study aims to provide empirical insights into the direct effect of performance measurement systems on innovative behavior. In addition, this research examines the intervening role of psychological empowerment in the relationship between performance measurement systems and innovative behavior. The study results uncovered the important role of the direct and indirect influence of the performance measurement system in increasing innovative behavior through psychological empowerment. This finding also provides an understanding for higher education leaders about the importance of increasing the intrinsic motivation of academics regarding the orientation of their work roles related to meaning, self-efficacy, self-determination, and impact in creating innovative behavior. In line with that, research findings see the importance of the quality of performance measurement in influencing the innovative behavior of academics. For this reason, higher education leaders need to improve trust, communication, fairness, and clarity from the performance measurement system for trusted lecturers. Supposedly, higher education leaders build better relationships to increase trust by emphasizing shared views, taking mutual action, and trying to understand academics better. The determination of PMS that supports innovation must be balanced. Excessive pressure without considering risk factors or the creative process can trigger the risk of forcing innovation, so careful thought is needed in determining PMS. Therefore, the development of an appropriate performance measurement system that can stimulate innovation behavior is essential to promote sustainable innovative behavior.

This research method solely relied on quantitative approach using questionnaires, however, the response rate was less than half of the total distributed questionnaires, consequently, the generalizability of the findings may not provide sufficient understanding regarding the discussed context. Thus, higher education institutions in future studies need to consider the role of other aspects in operational practice. In particular, future research can also explore aspects that support higher education institutions in keeping up with the world of education such as innovative teaching methods, research quality, and relevant teaching materials. Specifically, future research can also explore other aspects that support higher education institutions in following developments in the world of education. For example, not only focusing on lecturers' innovative behavior but also lecturers' innovative performance, and considering lecturers' participation in decision-making.

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