

The Influence of Intrinsic Factors on the Research Performance of Vocational Lecturers with the Mediating Role of Organizational Support in the Former Pekalongan Residency Area

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Abstract. *This study aims to examine the relationship between intrinsic factors, organizational support, and lecturers' research performance in vocational higher education. A quantitative approach was employed using Structural Equation Modeling based on Partial Least Squares. The respondents consisted of vocational higher education lecturers involved in research activities. The research instrument was evaluated through measurement model testing to ensure validity and reliability, followed by structural model analysis to identify relationships among variables. The results indicate that intrinsic factors have a positive effect on lecturers' research performance, primarily reflected in academic responsibility for completing research agendas as the indicator with the highest mean value. Organizational support also contributes to improving research performance, particularly through research training and feedback that is associated with the achievement of research grants as the most prominent performance indicator. Furthermore, organizational support functions as a mediating variable that strengthens the relationship between intrinsic factors and lecturers' research performance. These findings confirm that the interaction between lecturers' internal motivation and institutional support plays a crucial role in sustaining research performance within vocational higher education. The study provides theoretical implications by reinforcing the integration of intrinsic motivation and organizational support in explaining lecturers' research performance, as well as practical implications for vocational higher education institutions to prioritize research capacity development through continuous training, academic feedback, and expanded access to research funding.*

Keywords: Education; Intrinsic; Organizational; Research; Vocationa.

1. Introduction

Research conducted by lecturers is a key pillar in the implementation of the Tri Dharma of Higher Education, which encompasses education, research, and community service. In the higher education system, lecturers' research performance is not only a measure of individual academic productivity but also an indicator of the institution's reputation and competitiveness. This is especially important in the context of vocational higher education,

which is mandated to produce graduates with applied competencies and the ability to meet industry needs through research-based innovation.

As institutions focused on strengthening applied skills, vocational higher education institutions (VETs) have a strategic responsibility to bridge the needs of the business and industrial worlds (Kivunja, 2018). Therefore, vocational lecturers are not only expected to teach but are also required to produce relevant, innovative, and contextual research. However, various reports indicate that the research productivity of vocational lecturers in Indonesia remains relatively lagging behind that of lecturers at academic universities. Outputs in the form of scientific publications, research grants, and applied innovation have not yet developed optimally (Widiyono, 2021; González-Cutre et al., 2016).

One factor frequently cited to explain low research performance is lecturer motivation. Motivation acts as an internal driver that determines the intensity, direction, and sustainability of academic work behavior. Lecturers with high motivation tend to be more active in developing research proposals, building collaborations, and publishing their research results. Conversely, when motivation is low, research activities are often viewed as merely an administrative burden (Ilie (Popa) et al., 2023).

This study uses Herzberg's Two-Factor Theory as a conceptual foundation for understanding the dynamics of lecturers' work motivation. Herzberg (1959) distinguished between motivator (intrinsic) and hygiene (extrinsic) factors. Motivator factors relate to the content of the job and include achievement, recognition, responsibility, career development, and intellectual challenge. These factors are believed to drive satisfaction and higher performance. Meanwhile, hygiene factors relate to the work context, such as institutional policies, administrative systems, research facilities, and incentives. Their presence does not always increase motivation, but their absence can lead to dissatisfaction.

In this study, the extrinsic dimension is not positioned as a separate independent variable, but rather operationalized as organizational support. This arrangement is done to maintain model clarity and avoid construct overlap, considering that aspects of research policy, facilities, incentives, and academic governance are substantively within the institutional realm. Thus, intrinsic factors represent the personal drive of lecturers, while organizational support represents the institutional conditions that enable this drive to manifest in the form of research performance.

Several previous studies have shown that intrinsic motivation has a positive relationship with performance quality, particularly in jobs that require long-term intellectual commitment (Cerasoli, Nicklin, & Ford, 2014). In the context of higher education, self-determined motivation has also been reported to correlate with lecturers' academic productivity (Stupnisky et al., 2023). Furthermore, organizational support in the form of research facilities and institutional reward systems has been shown to increase lecturers' engagement in research activities (Alturki & Aldraiweesh, 2023; Ilie (Popa) et al., 2023).

However, the literature also shows inconsistent findings. Deci, Koestner, and Ryan (1999) found that performance-based incentives can, under certain conditions, undermine intrinsic motivation, particularly in tasks demanding creativity. Ariely et al. (2009) showed that outcome-based pressure can reduce performance quality in complex cognitive tasks. In the public sector, poorly designed reward systems can even have the potential to crowd out intrinsic professional drive (Weibel, Rost, & Osterloh, 2010).

These differing findings demonstrate the empirical controversy surrounding the relationship between motivation and performance. Some studies place intrinsic motivation as the primary determinant of performance improvement, while others suggest that organizational support design can actually strengthen or weaken this influence. This means that the relationship between intrinsic factors and research performance is not always direct but is potentially mediated by the organizational conditions in which lecturers work. This point leaves room for further research, particularly in the context of vocational higher education in Indonesia, which has distinct characteristics of the Tridharma (three pillars of research) and research governance compared to academic higher education.

This phenomenon is also evident in the former Pekalongan Residency area. According to LLDIKTI Region VI data (2024), there are 285 permanent lecturers spread across 13 vocational colleges. However, the distribution of functional positions indicates that most lecturers are still at the early stages of their academic careers.

Table Vocational College Data in the Former Pekalongan Residency

No	College	Lecturer					Accreditation
		Still	Jabfunction				
			A A	L	LK	GB	
Pekalongan City							
1	Hope Mothers Midwifery Academy Pekalongan	9	3	5			Good
Pekalongan Regency							
2	Pekalongan Health Analyst Academy	8	5	2			Good
Tegal City							
3	Bima Sakapenta Academy of Accountancy	15					Good
4	Hope Together Polytechnic	124	49	65			Good
5	Business Polytechnic	25	9	1			Good
6	Pancasakti Global Polytechnic	13	4	1			Good
Tegal Regency							
7	Siti Fatimah Midwifery Academy	7	1				Good
8	Purbaya Polytechnic	15	4				Good
9	Tegal Steel Polytechnic	16	9				Good
10	Damara Polytechnic	16					Good
Brebes Regency							
11	Al Hikmah 2 Nursing Academy, Brebes	13	4	1			Good
12	KH Putra Midwifery Academy	8	2				Good
13	Mitra Karva Mandiri Polytechnic	16	6				Good

Amount	285	96	75
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The data shows that 34% of lecturers are at the Assistant Expert level and 26% are at the Lecturer level, while there are no Associate Lecturers or Professors at the institutions studied. In the higher education system, promotion to functional positions is closely linked to research output and scientific publications. Therefore, the distribution of functional positions indicates that the productivity and sustainability of vocational lecturers' research still require strengthening, both in terms of personal motivation and institutional support.

Based on this description, the research performance of vocational lecturers cannot be explained from a single perspective. While intrinsic motivation plays a significant role, its effectiveness likely depends on the extent to which the organization provides adequate support. Therefore, this study aims to empirically test the influence of intrinsic factors on lecturers' research performance by using organizational support as a mediating variable.

2. Research Methods

This research is based on a postpositivistic paradigm that views social reality as objectively measurable through observable indicators, then processed inferentially to test the theory (Creswell & Creswell, 2018). With this framework, this research uses a quantitative, explanatory approach. The main objective is to explain the causal mechanism, namely how intrinsic factors or motivators (X) influence research performance (Y), both directly and indirectly through organizational support (Z), which functions as a mediating variable. The theoretical framework of this research refers to Herzberg's Two-Factor Theory, which distinguishes between motivating factors (intrinsic) and extrinsic factors (Herzberg, Mausner, & Snyderman, 1993). To maintain model simplicity and avoid redundancy, the extrinsic dimension is not treated as a separate independent variable. This dimension is operationalized in the form of "organizational support" at the institutional level, which is placed as a mediating variable.

3. Results and Discussion

3.1. Description of Research Data

This subchapter presents a description of the research data used as the basis for the analysis in this chapter. The description of the research data includes an overview of the respondents who participated in the study and their main characteristics based on demographic and academic information obtained through the research instruments. This presentation aims to provide empirical context regarding the profile of the vocational lecturers who served as the research data source, before discussing the results of the evaluation of the measurement and structural models.

The research data was obtained by distributing questionnaires to lecturers at vocational colleges who met the research criteria. All returned questionnaires were checked for completeness and eligibility, ensuring that the data used in the analysis was valid and

scientifically sound. Based on the results of data collection and screening, 112 vocational lecturers were deemed eligible for analysis in this study.

The characteristics of the respondents in this study are presented descriptively to illustrate the actual conditions of the respondents who provided the research data. Information on respondent characteristics is not used as a basis for hypothesis testing, but rather serves as supporting context for understanding the results of the analysis of the relationships between variables tested in subsequent stages. Respondent characteristics are grouped by functional position, length of teaching, and primary field of study.

1) Respondent Characteristics Based on Functional Position

Lecturers' functional positions reflect their academic career path and level of professional experience in implementing the Tri Dharma of Higher Education. Therefore, presenting respondent characteristics based on functional positions is necessary to provide an overview of respondents' academic positions within the university's staffing structure.

Table Respondent Characteristics Based on Functional Position

Functional Position	Number of people)
Expert Assistant	87
Lecturer	21
Associate Professor	2
Professor	2
Total	112

Based on Table the majority of respondents held the functional position of Assistant Expert. This indicates that the majority of respondents were in the early to mid-stages of their academic careers. This composition reflects the characteristics of vocational lecturers who are relatively active in developing academic competencies and implementing the Tri Dharma of Higher Education, particularly in the field of research.

2) Respondent Characteristics Based on Length of Teaching Experience

Years of teaching are used as an indicator of respondents' academic experience in their role as lecturers. Differences in years of teaching provide insight into respondents' level of involvement in educational activities, research, and community service.

Table Respondent Characteristics Based on Length of Teaching Experience

Teaching Length	Number of people)
0–5 years	73
6–10 years	16
11–15 years	12
More than 15 years	11
Total	112

Based on Table the majority of respondents had teaching experience ranging from 0 to 5 years. However, this study also included respondents with longer teaching experience, including

lecturers with more than 15 years of experience. This variation in experience indicates that the research data encompasses respondents with diverse academic backgrounds.

3) Respondent Characteristics Based on Main Field of Study

The presentation of respondent characteristics based on their primary field of study aims to illustrate the academic background of the vocational lecturers involved in the research. The diversity of fields reflects the multidisciplinary nature of vocational education.

Table Respondent Characteristics Based on Main Field of Study

Main Field of Study	Number of people)
Accountancy	16
Informatics Engineering	13
Midwifery	11
Mechatronics Engineering	10
Mechanical Engineering	8
Electrical Engineering	6
Management	5
Education	5
Nursing	4
Other	34
Total	112

The "Other" category covers various fields of study with a relatively small number of respondents, such as law, language, telecommunications, religious education, and other applied vocational fields. Based on Table the study respondents came from diverse academic backgrounds, providing a more comprehensive picture of the characteristics of vocational lecturers as research subjects.

As a point of emphasis, all respondent characteristics presented in this subchapter are descriptive in nature and are not intended to serve as the basis for hypothesis testing. The descriptive presentation of this research data serves to provide empirical context for the data used before analyzing the measurement model and testing the relationships between variables in the following subchapter.

This subchapter presents a descriptive overview of each research variable based on its constituent indicators. The description focuses on the indicators with the highest and lowest average values to demonstrate the empirical trend of each variable before evaluating the measurement model and discussing the relationships between the variables.

Intrinsic factors represent the internal drive of lecturers in carrying out research activities related to academic responsibility, scientific recognition, career development, and intellectual challenges in solving scientific problems.

Structural model evaluation (inner model) is conducted to test the causal relationships between latent variables as formulated in the research hypothesis. At this stage, the analysis focuses on testing the direct influences between variables and the indirect influences through

mediating variables. Structural model evaluation aims to assess the direction and significance of the relationships between variables in the research model, thereby determining the extent to which the proposed conceptual framework receives empirical support.

The structural model testing in this study was conducted by analyzing path coefficient values and significance test results using a bootstrapping procedure. This approach is commonly used in SEM-PLS to assess the stability of parameter estimates and the significance of relationships between latent variables (Hair et al., 2019). All test results are presented in tables and described narratively to ensure clarity.

1) Testing the Relationship Between Variables (Path Coefficient)

The purpose of testing the relationship between variables is to determine the direct influence of the independent variable on the dependent variable, as well as the influence of the independent variable on the mediating variable. The results of the test of the relationship between variables are presented in Table.

Table Path Coefficient Test Results

Relationship between variables	Path Coefficient (β)	Information	Decision
Intrinsic factors → Lecturer research performance	0.470	Significant	Accepted
Intrinsic factors → Organizational support	0.506	Significant	Accepted
Organizational support → Lecturer research performance	0.370	Significant	Accepted

The significance of the relationship between variables in the structural model is determined based on the results of the bootstrapping test with the criteria of a t-statistic value greater than 1.96 or a p-value less than 0.05 at a 5 percent significance level. Relationships that meet these criteria are declared significant, so the research hypothesis can be accepted.

Based on Table intrinsic factors have a positive and significant effect on lecturers' research performance. These results indicate that intrinsic factors play a direct role in influencing lecturers' research performance, thus the hypothesis stating that intrinsic factors have a direct effect on lecturers' research performance is accepted.

Furthermore, the test results showed that intrinsic factors had a positive and significant effect on organizational support. This finding indicates a significant relationship between intrinsic factors and organizational support in the research model.

The test results also show that organizational support has a positive and significant effect on lecturers' research performance. Thus, organizational support plays a direct role in influencing lecturers' research performance.

Overall, the results of the direct effect test indicate that all relationships between variables in the research model have a positive and significant direction of influence. This indicates that

the relationships between variables formulated in the structural model have empirical support and are consistent with the proposed research hypotheses.

2) Analysis of Mediation Effect

A mediation analysis was conducted to determine whether organizational support acts as an intermediary variable in the relationship between intrinsic factors and lecturers' research performance. Mediation testing in this study was conducted by evaluating the specific indirect effect and its significance level based on bootstrapping results, as recommended in SEM-PLS-based mediation analysis (Zhao et al., 2010).

Table Results of Indirect Effect Test (Mediation)

Mediation Path	Indirect Coefficient	Information	Types of Mediation
Intrinsic factors → Organizational support → Lecturer research performance	0.187	Significant	Partial mediation

Based on Table, the indirect influence of intrinsic factors on lecturers' research performance through organizational support is proven significant. The significance of the indirect influence was determined based on the results of the bootstrapping test with the criteria of a p-value less than 0.05 or a t-statistic greater than 1.96. This finding indicates that organizational support plays a role in channeling some of the influence of intrinsic factors towards improving lecturers' research performance.

When compared to the results of the direct influence test, intrinsic factors still showed a significant direct influence on lecturers' research performance, in addition to a significant indirect influence through organizational support. This condition indicates that organizational support acts as a partial mediator, because the direct influence of intrinsic factors on lecturers' research performance remains even though the mediation pathway is also significant (Baron & Kenny, 1986; Zhao et al., 2010).

Thus, organizational support not only functions as a direct predictor of lecturers' research performance, but also as an intermediary variable that explains part of the mechanism of the relationship between intrinsic factors and lecturers' research performance.

Based on the results of the structural model evaluation, it can be concluded that all relationships between variables in the research model show a positive and significant influence. The constructed structural model is deemed feasible and consistent with the research conceptual framework, thus serving as a basis for discussing the research results in the following section.

The coefficient of determination (R^2) is used to describe the extent to which exogenous variables in a structural model are able to explain variation in endogenous variables. The R^2 value indicates the model's explanatory power for the phenomenon under study, where a higher value indicates a higher proportion of the endogenous variable's variance that can be

explained by the predictor variables. In behavioral and organizational research, R^2 values are not always expected to be very high, given the complexity of individual and contextual factors that influence behavior and performance (Cohen, 1988; Hair et al., 2019).

In this study, the endogenous variables analyzed include lecturer research performance and organizational support. The results of the determination coefficient test are presented in Table.

Table Coefficient of Determination (R^2) Value

Endogenous Variables	R Square	R Square Adjusted
Lecturer research performance	0.534	0.526
Organizational support	0.256	0.249

Based on Table the R^2 value for lecturer research performance is 0.534. This value indicates that 53.4 percent of the variation in lecturer research performance can be explained by exogenous variables in the research model, while the remainder is influenced by other factors outside the model that were not examined in this study. The Adjusted R Square value, which is relatively close to the R^2 value, indicates that the model has good estimation stability and does not experience excess explanation due to the number of constructs in the model.

Meanwhile, the R^2 value for organizational support was 0.256. This indicates that the exogenous variables in the model are able to explain 25.6 percent of the variation in organizational support. In the context of social and organizational research, this level of explanatory power is considered reasonable, considering that organizational support is influenced by various policy, structural, and contextual factors that cannot all be accommodated in a single research model. Therefore, the R^2 value still reflects an empirically meaningful explanatory contribution.

Overall, the results of the coefficient of determination test indicate that the constructed structural model has adequate explanatory power for the endogenous variables analyzed. Lecturer research performance has a stronger level of explanatory power than organizational support, which aligns with the position of organizational support as an intermediary variable in the research model. This finding indicates that the research model is able to capture the main relationships between variables quite well and is relevant to the empirical context studied.

Based on the R^2 value obtained, it can be concluded that the structural model has sufficient explanatory power and is not weak. Therefore, these results provide a sufficient basis for continuing the discussion of the research findings and drawing theoretical and practical implications in the following sections.

3.2. Discussion of Research Results

The discussion of this study's results is directed at interpreting the empirical findings by linking them to the theoretical framework and relevant previous research findings. The focus of the

discussion is not on repeating statistical figures, but rather on interpreting the relationships between variables as reflected through the dominant indicators for each construct. Descriptive results indicate that academic responsibility is the highest indicator for intrinsic factors, research output-based incentives are the dominant indicator for organizational support, and scientific publications in journals or proceedings emerge as the most prominent indicator of research performance. In addition to publications, research performance is also reflected in the acquisition of research grants, cross-institutional collaborations, and applied research outputs. This pattern of indicators serves as the basis for explaining how vocational lecturers' research performance is shaped through the interaction between personal motivation and institutional support.

1) The Influence of Intrinsic Factors on Lecturers' Research Performance

Research findings indicate that intrinsic factors positively influence the research performance of vocational lecturers. Substantively, this influence is primarily reflected in the indicator of academic responsibility, which is the most dominant motivator. Academic responsibility drives lecturers to consistently complete their research agenda, from proposal development and grant applications to publication of research results in journals or scientific proceedings.

In addition to responsibility, the need for scientific recognition and career development orientation are also important drivers. Lecturers driven by academic recognition tend to maintain the quality of their research outputs, while career development orientation encourages continued research productivity as part of their functional position. Therefore, improved research performance in this context is reflected not only in the number of publications but also in the success of obtaining grants and producing applied research outputs.

These findings align with Herzberg's Two-Factor Theory, which posits responsibility and achievement as motivating factors that enhance work performance (Herzberg et al., 1959). In knowledge-based work, intrinsic motivation has been shown to have a strong relationship with performance quality and individual persistence (Cerasoli, Nicklin, & Ford, 2014). Research in higher education settings also shows that self-determined motivation correlates with lecturers' academic productivity (Stupnisky et al., 2023). Therefore, strengthening academic responsibility, scientific recognition, and career development orientation are key foundations for improving the research performance of vocational lecturers.

2) The Relationship between Intrinsic Factors and Perceptions of Organizational Support

This study found that intrinsic factors are positively related to perceived organizational support. Lecturers with strong academic responsibility and career development orientation tend to be more responsive to research policies, incentive systems, and research facilities provided by their institutions.

Research output-based incentive indicators, a dominant aspect of organizational support, indicate that rewards for scientific publications and grants are perceived as tangible support for research activities. In other words, intrinsic motivation encourages lecturers to more actively utilize available institutional support.

This finding aligns with Organizational Support Theory, which states that perceptions of organizational attention and appreciation will strengthen individual commitment and work behavior (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002). In this context, intrinsic motivation and organizational support do not stand alone but complement each other in shaping lecturers' involvement in research activities.

3) The Influence of Perceived Organizational Support on Lecturers' Research Performance

The research results show that perceived organizational support has a positive effect on lecturers' research performance. Operationally, this support is reflected in publication-based incentives, clear research policies, and the availability of research facilities.

This support contributes to increased productivity of scientific publications, the acquisition of research grants, and the strengthening of cross-institutional research collaboration. Publication incentives encourage lecturers to maintain consistent scientific output, while clear research policies provide direction and administrative certainty in research implementation. Adequate facilities also enable lecturers to conduct research more effectively and sustainably.

This finding is consistent with research by Alturki and Aldraiweesh (2023), which showed that institutional support systems improve lecturer performance. However, the literature also cautions that incentives need to be designed proportionally to avoid weakening intrinsic motivation (Deci, Koestner, & Ryan, 1999; Weibel, Rost, & Osterloh, 2010). Therefore, in the context of vocational education, organizational support serves as a reinforcement of personal motivation, not a substitute for intrinsic motivation.

4) The Role of Perceived Organizational Support as a Mediating Variable

The analysis shows that organizational support acts as a partial mediator in the relationship between intrinsic factors and lecturers' research performance. This means that academic responsibility, scientific recognition, and career development orientation have a direct influence on publications, research grants, and applied outputs, but this influence is stronger when supported by incentives, clear research policies, and adequate research facilities.

This partial mediation role suggests that research performance is shaped by the interaction between personal motivation and the institutional context. This finding aligns with the concept of mediation, which explains that intermediary variables help explain the mechanisms of relationships between variables (Baron & Kenny, 1986) and the mediation approach in PLS-SEM (Hair et al., 2022). Therefore, improving the research performance of vocational lecturers requires strengthening intrinsic motivation accompanied by structured and consistent organizational support.

Substantively, the results of this study indicate that the research performance of lecturers (Y) increases through strengthening organizational support (Z) manifested in the form of publication-based incentives, clear research policies, provision of research facilities, and assistance in preparing grant proposals. This support strengthens lecturers' consistency in producing scientific publications, obtaining research grants, and developing research collaborations. At the same time, this increase is influenced by (intrinsic) motivating factors in the form of academic responsibility in completing the research agenda, the need for scientific recognition, and career development orientation through functional positions. Thus, increased research performance does not only depend on individual abilities, but is formed through the interaction between intrinsic motivation and concrete and structured organizational support.

5) Theoretical and Practical Implications

Theoretically, this study demonstrates that the motivating factors in Herzberg's Two-Factor Theory remain relevant in the context of vocational higher education. Academic responsibility, the need for scientific recognition, and career development orientation have been shown to contribute to scientific publications, grant acquisition, and applied research output. However, their effectiveness is influenced by organizational support as a structural context that facilitates the actualization of motivation.

Practically, these findings suggest that improving research performance can be achieved through strengthening lecturers' academic accountability, establishing publication- and grant-based incentive systems, clarifying research policies, and providing research facilities and collaboration spaces. Thus, vocational lecturers' research performance is shaped by the synergy between intrinsic motivation and structured organizational support.

This chapter presents the research results and their discussion based on data analysis using a Structural Equation Modeling approach based on Partial Least Squares. All stages of the analysis were carried out systematically to ensure that the research instruments were suitable for use and that the relationships between variables could be legitimately interpreted in accordance with the research objectives.

The results of the measurement model evaluation indicate that all indicators meet validity and reliability criteria, adequately representing the research constructs. By meeting these criteria, the results of the structural relationship tests between variables can serve as a strong basis for interpreting the research's empirical findings.

The structural model evaluation shows that intrinsic factors of lecturers, primarily reflected in their sense of responsibility for completing their research agenda, have a positive relationship with their research performance, most prominently demonstrated through scientific publications in journals or proceedings. Furthermore, perceived organizational support from lecturers, particularly in the form of research output-based incentives, plays a role in strengthening their involvement in research activities.

The analysis also shows that perceived organizational support serves as a mediating mechanism that bridges the relationship between intrinsic factors and lecturers' research performance. This finding indicates that lecturers' internal motivation will be more effectively realized in research achievements if supported by an institutional environment that recognizes research outputs and supports the development of lecturers' research capacity.

4. Conclusion

This study aims to analyze the relationship between intrinsic factors of lecturers, organizational support, and research performance of vocational lecturers. Overall, vocational lecturers' research performance is formed through a mutually reinforcing relationship between academic responsibility as the main intrinsic factor, organizational support in the form of recognition for research outputs, and scientific publication achievements as the most prominent indicator of research performance. These findings emphasize the importance of integrating internal motivation of lecturers and institutional support in building sustainable research performance in vocational higher education environments.

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