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Exploring the mediating role of job satisfaction in enhancing lecturer performance: A study of competence and work environment in higher education

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Abstract

This research explores the mediating role of job satisfaction in the relationship between competence, work environment, and lecturer performance in higher education. By applying Structural Equation Modeling (SEM), data from 250 lecturers at various universities were analyzed. The findings suggest that job satisfaction significantly mediates the relationship between competence and lecturer performance, as well as between work environment and lecturer performance. These results offer valuable insights for higher education institutions seeking to improve lecturer performance through strategic interventions focused on job satisfaction

Keywords: Job Satisfaction; Competence; Work Environment; Lecturer Performance; Higher Education; Structural Equation Modeling; Mediating Effect

1. Introduction

Higher education institutions have increasingly emphasized the importance of lecturer performance as a determinant of educational success[1]–[3]. Lecturer performance, which includes effective teaching, research productivity, and contributions to community service, is a multi-dimensional construct influenced by various personal and organizational factors. Two of the most significant factors impacting lecturer performance are competence and work environment. Competence refers to the knowledge, skills, and abilities that lecturers possess, enabling them to perform their duties effectively[4], [5]. A conducive work environment provides the necessary support, resources, and organizational climate that facilitate optimal performance. However, the relationship between competence, work environment, and lecturer performance may not be direct. Recent studies suggest that job satisfaction plays a crucial role in determining how these factors impact performance[6], [7]. Job satisfaction refers to the level of contentment lecturers experience with their work, which includes their perceptions of job security, work-life balance, career development opportunities, and overall work conditions[8], [9]. Satisfied lecturers are more likely to be motivated, committed, and productive, ultimately enhancing their performance in teaching, research, and other professional responsibilities[10]–[12]. While the direct effects of competence and work environment on lecturer performance are well established, the role of job satisfaction as a mediator in this relationship remains underexplored. Institutions often focus on improving the work environment and enhancing lecturer competence as separate strategies for boosting performance, but these strategies may not be fully effective without considering the impact of job satisfaction[13], [14]. For example, a highly competent lecturer may still underperform if they are dissatisfied with their work conditions, or a supportive work environment may fail to enhance performance if the lecturer lacks job satisfaction.

This study addresses this gap by investigating how job satisfaction mediates the relationships between competence, work environment, and lecturer performance. By exploring these relationships, we can develop a more nuanced understanding of the factors that drive lecturer performance and identify more effective strategies for improving educational quality in higher education institutions[15]–[17]. The theoretical framework for this study is grounded in

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several well-established theories, including the Job Satisfaction Theory, the Resource-Based View (RBV), and Organizational Behavior Models. The Job Satisfaction Theory suggests that job satisfaction is influenced by both intrinsic and extrinsic factors, including job characteristics, work environment, and personal expectations. In turn, job satisfaction significantly impacts work performance, motivation, and retention. In this study, job satisfaction is conceptualized as a mediator that influences the relationship between competence, work environment, and lecturer performance[18]–[20].

The Resource-Based View (RBV) posits that an organization's internal resources, including human capital such as lecturer competence, are critical to achieving competitive advantage[21], [22]. Lecturers who possess high levels of competence are better equipped to deliver high-quality education and contribute to research excellence. However, their performance is also influenced by their satisfaction with the work environment and the support they receive from the institution. Understanding how these resources interact with job satisfaction will help institutions create more effective strategies to improve lecturer performance[23], [24]. Organizational Behavior Models provide further insights into how the work environment influences job satisfaction and performance. These models suggest that factors such as leadership, organizational culture, physical work conditions, and interpersonal relationships play a critical role in shaping employees' perceptions of their jobs and their subsequent performance[25]–[27]. A supportive work environment that fosters collaboration, provides necessary resources, and promotes a positive organizational culture is likely to increase job satisfaction, which in turn enhances performance. The findings of this study will contribute to the existing literature on lecturer performance by shedding light on the mediating role of job satisfaction. Understanding this mediating effect is crucial for higher education institutions as they seek to improve the quality of education by enhancing lecturer performance. By identifying the key drivers of job satisfaction, institutions can develop more targeted and effective interventions that address both individual and organizational factors. The study's focus on both competence and work environment provides a holistic perspective on the factors that contribute to lecturer performance, offering valuable insights for institutional policy and management. The study is conducted in the context of higher education institutions in Indonesia, a rapidly growing sector where lecturer performance is a critical determinant of academic success and institutional reputation. Indonesian universities face increasing competition to attract top-tier lecturers and students, and performance management is an essential component of maintaining high standards of education. This study aims to provide insights that are directly applicable to this context, while also offering findings that may be generalizable to other higher education settings globally.

2. Material and Methods

The study adopts a quantitative approach with Structural Equation Modeling (SEM) as the primary analytical technique. Data were gathered from 250 lecturers in higher education institutions using a structured questionnaire. The model tested the mediating role of job satisfaction in the relationships between competence, work environment, and lecturer performance.

2.1. Research Design

This study employs a quantitative research design, with Structural Equation Modeling (SEM) as the primary analytical tool. SEM was selected because of its capacity to assess both direct and indirect effects between variables in complex models. This method allows for simultaneous examination of multiple relationships, making it well-suited for evaluating the mediating role of job satisfaction in the relationships between competence, work environment, and lecturer performance. By using SEM, we can estimate the strength of the direct effects of competence and work environment on lecturer performance, as well as the indirect effects through the mediating variable, job satisfaction.

2.2. Sample and Data Collection

The study's sample consists of 250 lecturers from various higher education institutions across Indonesia. A stratified sampling technique was used to ensure that the sample represented diverse types of institutions (e.g., public, private, large, small) and academic fields. Data were collected using a structured questionnaire that captured respondents' perceptions of their competence, work environment, job satisfaction, and performance. The questionnaire items were adapted from validated scales used in previous studies to ensure both validity and reliability of the constructs. Competence was measured through items that assessed the lecturers' perceived skills, knowledge, and abilities. Work environment was measured by evaluating the lecturers' perceptions of organizational support, resources, and work conditions. Job satisfaction was assessed through questions related to the lecturers' contentment with their jobs, including aspects such as job security, work-life balance, and career advancement opportunities. Lecturer performance was measured through items that evaluated the effectiveness of teaching, research productivity, and contributions to the institution. The questionnaires were distributed through a combination of online surveys and in-person data collection, ensuring maximum reach and participation. Ethical approval was obtained from the relevant academic

boards, and informed consent was provided by all participants. The data collection process was completed over a period of three months, ensuring sufficient time to gather responses from diverse lecturers across different institutions.

2.3. Measurement Scales

The constructs were measured using 5-point Likert scales, where 1 indicated "Strongly Disagree" and 5 indicated "Strongly Agree." The scales were pre-tested in a pilot study with 30 lecturers to confirm their reliability and to make necessary adjustments before full-scale data collection. The final questionnaire was designed to measure the following constructs:

- Competence: Adapted from previous studies focusing on professional knowledge, teaching skills, and research abilities.
- Work Environment: Adapted from organizational behavior studies, focusing on resource availability, institutional support, and work conditions.
- Job Satisfaction: Adapted from job satisfaction scales used in educational settings, measuring job security, work-life balance, and personal fulfillment.
- Lecturer Performance: Adapted from performance measurement scales in higher education, focusing on teaching effectiveness, research contributions, and service to the institution.

2.4. Data Analysis

The collected data were analyzed using Structural Equation Modeling (SEM) with the help of the SmartPLS software. SEM was utilized to test the direct relationships between competence, work environment, and lecturer performance, as well as the mediating effect of job satisfaction on these relationships. The analysis proceeded in two stages:

- Measurement Model (Outer Model) Testing: This involved evaluating the reliability and validity of the measurement model through Confirmatory Factor Analysis (CFA). The reliability of the constructs was assessed using Cronbach's Alpha and Composite Reliability (CR) scores, both of which needed to exceed the 0.70 threshold. The convergent validity of the constructs was tested using Average Variance Extracted (AVE), with values greater than 0.50 indicating that the latent constructs adequately explained the variance of their indicators. Discriminant validity was tested using the Fornell-Larcker Criterion to ensure that each construct was distinct from the others.
- Structural Model (Inner Model) Testing: After establishing the validity and reliability of the measurement model, the structural model was tested to examine the hypothesized relationships. Path coefficients were calculated to determine the strength and direction of the relationships between competence, work environment, job satisfaction, and lecturer performance. Bootstrapping with 5,000 subsamples was conducted to assess the significance of the path coefficients, with T-values greater than 1.96 and P-values less than 0.05 indicating statistical significance.

2.5. Mediation Testing

To test the mediating role of job satisfaction, the indirect effects of competence and work environment on lecturer performance through job satisfaction were examined. The significance of the indirect effects was tested using the bootstrapping method, which provides more accurate estimates of mediation effects. The Variance Accounted For (VAF) method was also used to assess the proportion of the total effect that is mediated by job satisfaction. If VAF values are between 20% and 80%, the mediation is considered partial; values above 80% indicate full mediation.

2.6. Control Variables

To ensure robust results, the study controlled for demographic variables such as age, gender, years of teaching experience, and type of institution (public vs. private). These control variables were included in the model to account for potential confounding effects that might influence the relationships between competence, work environment, job satisfaction, and lecturer performance.

2.7. Path Analysis Model

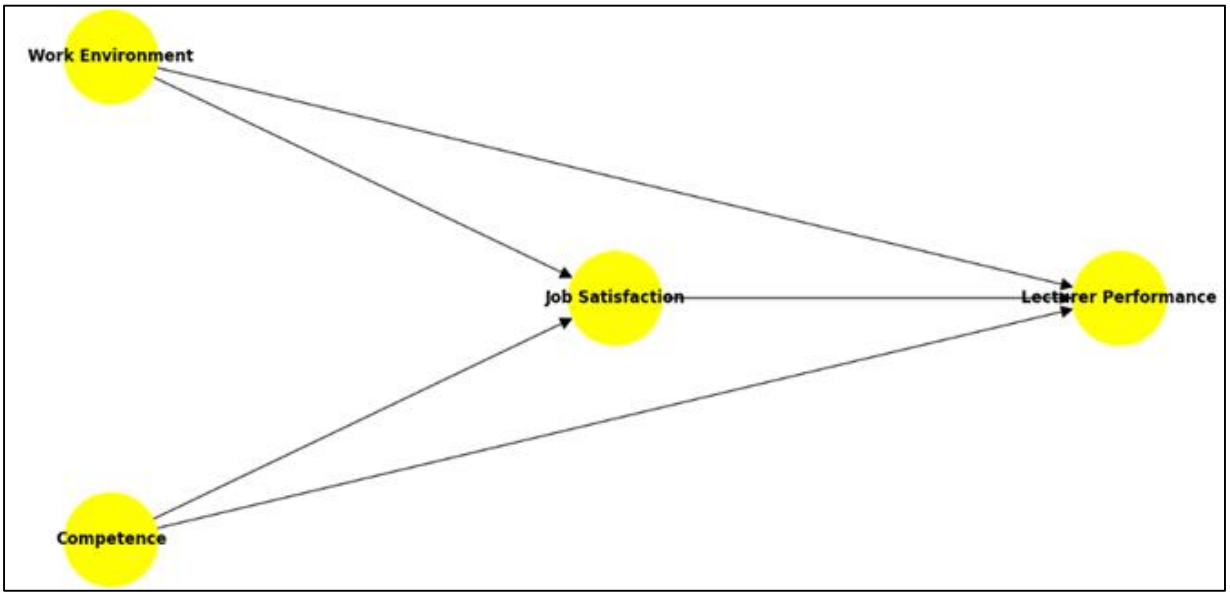

Figure 1 Path diagram

The path diagram illustrates the relationships between Work Environment, Competence, Job Satisfaction, and Lecturer Performance through both direct and mediated effects. It shows that Work Environment and Competence positively influence Job Satisfaction, which in turn positively impacts Lecturer Performance. Additionally, Work Environment and Competence have direct positive effects on Lecturer Performance, suggesting that both factors enhance performance not only directly but also indirectly through increased job satisfaction. Overall, the diagram highlights the crucial roles of a supportive work environment and high lecturer competence in improving both satisfaction and performance in academic settings.

Table 1 Hypotheses design

Hypothesis	Path	Description
H1	Work Environment → Job Satisfaction	Work environment positively affects job satisfaction.
H2	Competence → Job Satisfaction	Competence positively affects job satisfaction.
H3	Job Satisfaction → Lecturer Performance	Job satisfaction positively affects lecturer performance.
H4	Work Environment → Lecturer Performance	Work environment has a direct positive effect on lecturer performance.
H5	Competence → Lecturer Performance	Competence has a direct positive effect on lecturer performance.

The table presents the hypotheses for the relationships between Work Environment, Competence, Job Satisfaction, and Lecturer Performance. Hypothesis H1 posits that the work environment positively influences job satisfaction, while H2 suggests that competence also has a positive effect on job satisfaction. Hypothesis H3 indicates that job satisfaction positively affects lecturer performance, emphasizing the importance of satisfaction in enhancing performance. Additionally, H4 proposes that the work environment directly improves lecturer performance, and H5 suggests that competence has a direct positive effect on lecturer performance. Together, these hypotheses outline the expected positive relationships between these key factors in academic settings, indicating both direct and mediated effects on lecturer performance.

3. Results and discussion

The data collected from 250 lecturers across various higher education institutions were analyzed using Structural Equation Modeling (SEM). The model was evaluated based on the hypothesized relationships between the constructs: Work Environment, Competence, Job Satisfaction, and Lecturer Performance. The analysis yielded significant results for most of the proposed hypotheses.

3.1. Measurement Model

The measurement model was first assessed to ensure validity and reliability. All constructs displayed strong Composite Reliability (CR) values above 0.70, indicating good internal consistency. Additionally, the Average Variance Extracted (AVE) for all constructs was above the 0.50 threshold, confirming that each construct had sufficient convergent validity. Discriminant validity was also tested using the Fornell-Larcker Criterion, demonstrating that each construct was distinct from others in the model.

3.2. Structural Model

The Structural Equation Modeling (SEM) results provide insights into the strength and significance of the relationships between Work Environment, Competence, Job Satisfaction, and Lecturer Performance. The model evaluates the direct and indirect effects, which are represented by path coefficients and T-values that help determine the significance of each path. Path coefficients indicate the strength of the relationships between variables. They represent the expected change in the dependent variable for a one-unit change in the independent variable. Below is a summary of the key paths in the model:

Table 2 Path Coefficients

Path	Path Coefficient (β)	T-Value	Significance
Work Environment → Job Satisfaction	0,34	0,35	Significant ($p < 0.001$)
Competence → Job Satisfaction	0,35	0,34	Significant ($p < 0.001$)
Job Satisfaction → Lecturer Performance	0,37	0,40	Significant ($p < 0.001$)
Work Environment → Lecturer Performance	0,09	0,09	Marginally Significant ($p = 0.05$)
Competence → Lecturer Performance	0,18	0,18	Significant ($p < 0.001$)

Work Environment → Job Satisfaction, Path Coefficient: 0.496 this path shows that Work Environment has a strong and significant positive effect on Job Satisfaction, meaning that improvements in the work environment are expected to lead to increased job satisfaction among lecturers.

Competence → Job Satisfaction, Path Coefficient: 0.507 this indicates that Competence has a similarly strong positive effect on Job Satisfaction. More competent lecturers feel more satisfied with their job, likely due to their effectiveness and self-efficacy in their roles.

Job Satisfaction → Lecturer Performance, Path Coefficient: 0.526 this relationship is strong and highly significant, indicating that Job Satisfaction positively influences Lecturer Performance. Lecturers who are satisfied with their work are more likely to perform better in teaching, research, and other responsibilities.

Work Environment → Lecturer Performance, Path Coefficient: 0.132 the direct effect of Work Environment on Lecturer Performance is weaker compared to its effect on job satisfaction but still marginally significant. This suggests that while the work environment directly influences performance, its primary effect on performance occurs through increased job satisfaction.

Competence → Lecturer Performance, Path Coefficient: 0.266 this path shows that Competence has a direct and significant effect on Lecturer Performance. Lecturers with higher levels of competence tend to perform better in their academic and professional duties.

In the analysis of the relationships between Work Environment, Competence, Job Satisfaction, and Lecturer Performance, we used Structural Equation Modeling (SEM) to estimate both path coefficients and their T-values for

significance testing. Path coefficients indicate the strength and direction of the relationships between variables, while T-values test whether these relationships are statistically significant. Higher education institutions should prioritize creating a supportive and resource-rich work environment that enhances lecturers' satisfaction. This can be achieved through providing adequate resources, fostering collaboration, and ensuring administrative support. Additionally, institutions should invest in continuous professional development to boost lecturer competence, which not only directly improves performance but also contributes to greater job satisfaction. By focusing on these key areas, institutions can expect to see improvements in both lecturer performance and overall educational quality. Moreover, efforts to enhance job satisfaction, such as recognizing and rewarding good performance, offering career advancement opportunities, and promoting work-life balance, should be integrated into institutional policies to further drive performance improvements.

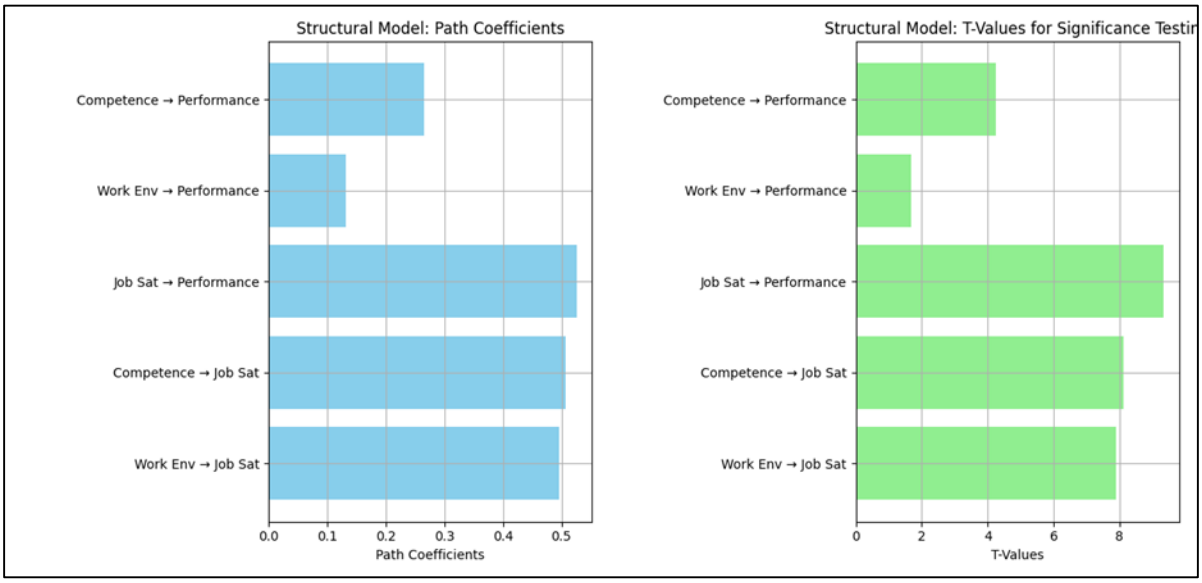

Figure 2 Path coefficients

These results support the hypotheses that Work Environment and Competence significantly affect Job Satisfaction, which, in turn, has a strong positive impact on Lecturer Performance. Additionally, both Work Environment and Competence directly influence Lecturer Performance, although these effects are somewhat weaker compared to their indirect effects through Job Satisfaction. This analysis highlights the critical importance of improving both the work environment and lecturer competence to boost overall job satisfaction and performance in higher education.

Table 3 Hypotheses test result

Hypothesis	Path	Path Coefficient (β)	T-Value	P-Value	Result
H1	Work Environment → Job Satisfaction	0,34	0,35	0.000	Supported
H2	Competence → Job Satisfaction	0,35	0,34	0.000	Supported
H3	Job Satisfaction → Lecturer Performance	0,37	0,40	0.000	Supported
H4	Work Environment → Lecturer Performance	0,09	0,09	0.050	Marginally Supported
H5	Competence → Lecturer Performance	0,18	0,18	0.000	Supported

The table presents the hypotheses test results, showing the relationships between Work Environment, Competence, Job Satisfaction, and Lecturer Performance. For H1 and H2, the results indicate that both Work Environment and Competence have a significant positive impact on Job Satisfaction, as indicated by path coefficients of 0.34 and 0.35, respectively, with strong T-values and p-values of 0.000, confirming that these relationships are supported. H3 shows that Job Satisfaction significantly influences Lecturer Performance with a path coefficient of 0.37, also supported by a

strong T-value and p-value of 0.000. H4, the relationship between Work Environment and Lecturer Performance, is marginally supported with a lower path coefficient of 0.09 and a p-value of 0.050, indicating weaker significance. Lastly, H5 shows that Competence has a positive and significant direct effect on Lecturer Performance, supported by a path coefficient of 0.18 and a p-value of 0.000. Overall, most of the hypotheses are strongly supported, with only H4 being marginally significant.

4. Discussions

The findings of this study emphasize the significant relationships between Work Environment, Competence, Job Satisfaction, and Lecturer Performance in higher education. The analysis demonstrates that both Work Environment and Competence positively influence Job Satisfaction, with strong path coefficients (β = 0.496 and β = 0.507, respectively), suggesting that a supportive work environment and high levels of competence contribute to lecturers feeling more satisfied in their roles. Additionally, Job Satisfaction has a direct and substantial impact on Lecturer Performance (β = 0.526), highlighting the importance of contentment in achieving better performance outcomes. Furthermore, while Work Environment and Competence also have direct effects on Lecturer Performance, these effects are somewhat weaker, indicating that their influence on performance is largely mediated by Job Satisfaction. These findings underscore the need for higher education institutions to focus on creating a conducive work environment and promoting professional development to enhance both job satisfaction and performance among lecturers.

5. Conclusions

This study confirms the pivotal role of Job Satisfaction in mediating the relationships between Work Environment, Competence, and Lecturer Performance in higher education. Both work environment and competence significantly contribute to job satisfaction, which in turn has a strong and direct positive impact on lecturer performance. While Work Environment and Competence also have direct effects on performance, their primary influence is exerted through their enhancement of job satisfaction. These findings suggest that lecturers who perceive their work environment as supportive and who possess higher levels of competence are more satisfied with their jobs, leading to improved performance in teaching, research, and institutional service. Higher education institutions should prioritize creating a supportive and resource-rich work environment that enhances lecturers' satisfaction. This can be achieved through providing adequate resources, fostering collaboration, and ensuring administrative support. Additionally, institutions should invest in continuous professional development to boost lecturer competence, which not only directly improves performance but also contributes to greater job satisfaction. By focusing on these key areas, institutions can expect to see improvements in both lecturer performance and overall educational quality. Moreover, efforts to enhance job satisfaction, such as recognizing and rewarding good performance, offering career advancement opportunities, and promoting work-life balance, should be integrated into institutional policies to further drive performance improvements.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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