Analysis the Quality of Human Resources and the Effectiveness of Higher Education Management on Student Academic Performance at Universities in Samarinda, East Kalimantan

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ABSTRACT
This study’s primary focus is on how much a college in Samarinda, East Kalimantan, impacts students’ academic achievement in relation to the calibre of its human resources and the efficiency of its administration. This quantitative study explores the impact of human resource quality and college management effectiveness on student academic performance in universities located in Samarinda, East Kalimantan, Indonesia. The research sample included 100 participants representing students, academic staff, and administrative personnel. Data were collected through surveys and academic records, and the analysis was conducted using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) path modeling. The results indicate that both "Higher Education Management" and "Quality of Human Resources" significantly predict "Student Academic Performance." Participants across stakeholder groups generally held positive perceptions of higher education management and human resource quality. The findings underscore the importance of effective management and quality human resources in enhancing student academic outcomes. This research contributes valuable insights for higher education institutions in Samarinda and policymakers aiming to improve the quality of higher education management and resource allocation. It also suggests potential directions for future research in the field.

Keywords: Education Management Effectiveness Human Resources Student Academic Performance

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1. INTRODUCTION
The quality of human resources within a university and the effectiveness of university management are influential determinants of the overall educational experience and academic performance of students [1], [2]. Universities have implemented various mechanisms to transform their educational activities, such as dual-track tuition systems, quality assurance systems, and unbundling of university services [3]. Additionally, the research function of universities has been influenced by policies of competitive research funding allocation and research assessment based on quantifiable indicators [4]–[8]. These changes have created an environment of market competition between academics, students,
and universities [9]. Student involvement in extracurricular activities and decision-making processes is perceived as critical for their persistence in higher education [10]. The sustainable development of universities, including their performance in teaching, research, innovation, and talent stewardship, is crucial for driving social change and building a sustainable future [11]–[13]. By evaluating performance at the school/college level, universities can gain valuable insights to improve school performance and enhance sustainable development. University students' participation in an inclusive learning community has been found to enhance their transferable skills, such as appreciation of diversity, respect, and civic engagement.

The quality of human resources in higher education institutions significantly impacts the learning environment and academic outcomes for students [14], [15]. Effective university management plays a crucial role in creating an environment conducive to student success. It involves administrative and leadership practices that guide the institution's mission, vision, resource allocation, and decision-making processes [16], [17]. A well-managed institution focuses on individualization of employee motivation, development of talent management practices, and the use of innovative approaches to enhance performance and job satisfaction [18]–[21]. Additionally, the management of higher vocational colleges can benefit from the use of information technology, such as student information management systems, to improve overall work efficiency and ensure the quality and safety of the educational environment [22].

Understanding the relationship between human resource quality, college management effectiveness, and student academic performance in Samarinda City, East Kalimantan, Indonesia is crucial for policymakers, administrators, and educators. Efforts to raise awareness of diversity tolerance through multicultural education in West Kalimantan can contribute to the development of human resources and promote social capital for the younger generation [23]. Indonesian college students have a long tradition of participating in rural development, and recent policies have expanded their opportunities to engage in community service agendas [24]. However, there is a need for more awareness and preparation in Indonesian universities, particularly in the accounting study program, to incorporate sustainability courses and contribute to global sustainable development goals [25]–[30]. The Adiwiyata program, implemented by the Ministry of Environment, can foster attitudes and behaviors for environmental conservation in schools, with universities playing a role in supporting this program through community service activities [31]. The Merdeka Campus program in private universities, such as Pelita Harapan University, aims to increase student competence in higher education [30], [32]–[34].

This study's primary focus is on how much a college in Samarinda, East Kalimantan, impacts students' academic achievement in relation to the calibre of its human resources and the efficiency of its administration [34]–[36]. Fewer research looks at how human resource management and college administration work together to affect student learning results, despite the fact that many studies focus on these topics separately. By examining this intricate link, we hope to add to the conversation about student achievement and offer insights that can influence practice and policy in Samarinda's higher education institutions.

2. LITERATURE REVIEW
2.1 Quality of Human Resources in Higher Education

The quality of human resources in higher education institutions is influenced by factors such as qualifications, experience, and commitment. Research has shown that academic and educational capacities, as well as adequate competencies, are essential for favorable perceptions and a committed community dedicated to improving the higher education
system [37]. Additionally, toxic leadership behaviors exhibited by administrators in these institutions can negatively affect the organizational commitment levels of academic staff [38]. Furthermore, the development of career resources throughout higher education studies is crucial for graduates' employability and career success [39]–[42]. It is important for universities to optimize their resources and create a culture of success and specialization to enhance learning achievement and sustainability [43]. Highly qualified academic staff positively influence student engagement and academic performance [44]. Faculty experience is positively related to student success, particularly in terms of retention and graduation rates [45]. The commitment of academic staff, including their dedication to teaching, research, and student support, significantly affects student outcomes [46]. Faculty members who are committed to their roles contribute to a positive learning environment and improve student performance [47].

2.2 College Management Effectiveness

Effective college management is crucial for creating an environment that promotes student success and academic performance. Strategic decision-making plays a key role in guiding the institution's mission, vision, and resource allocation [44], [48]–[50]. Well-planned strategic decisions positively impact student academic performance by ensuring the efficient use of resources and the implementation of policies that benefit students [51]. The use of advanced information technology and management systems can improve the efficiency and effectiveness of college management, leading to better decision-making and administrative practices [52]–[54]. By optimizing the allocation of human resources and utilizing information technology, colleges and universities can enhance their management effectiveness, improve the quality and efficiency of education, and achieve innovation and development in the industry.

Equitable resource allocation is crucial for improving student outcomes, especially for underrepresented groups [55]. Effective leadership at the administrative level plays a significant role in creating a positive academic environment and fostering student success [56]. Strong leadership practices contribute to higher student retention and graduation rates [57].

2.3 The Impact on Student Academic Performance

The impact of human resource quality and college management effectiveness on student academic performance is a complex and multifaceted relationship. Various studies have explored this connection and provided insights into the ways in which these factors interact. Banda and Banda found weak but statistically significant correlations between students' regions of origin and their academic performance in Malawian higher education [58]. They also highlighted the importance of effort in academic performance, regardless of one's region of origin. Another study by Jean Renvoize examined the impact of classroom competition and cooperation on students' academic performance using statistical learning approaches [59]. The study found that the degree of classroom competition, the degree of classroom cooperation, and students' attitude to competition all influenced academic performance. Additionally, P. Pilatso and Joshua Chukwuere explored the
impact of fourth-generation mobile technologies on university students’ academic performance [6], [60]–[62]. They found that 4G mobile technologies improved students’ mobility, internet quality, and access to online resources, which directly impacted their academic performance.

2.4 Gaps in the Literature

While existing literature provides valuable insights into the influence of human resource quality and college management effectiveness on student academic performance, several gaps remain. First, there is a need for research that specifically focuses on the context of Samarinda, East Kalimantan, and its unique challenges and opportunities. Furthermore, the interplay between these factors and their combined effects on student outcomes remains an area that requires further exploration. This study aims to address these gaps by examining the relationships in the specific context of Samarinda.

2.5 Theoretical Framework

This research is guided by several theoretical frameworks, including the Human Capital Theory, Resource Dependence Theory, and Organizational Effectiveness Theory. The Human Capital Theory underscores the significance of investing in human resources to enhance productivity and performance. Resource Dependence Theory emphasizes the importance of resource allocation and management. Organizational Effectiveness Theory provides a lens through which to analyze the effectiveness of administrative practices on organizational goals.

3. METHODS

The main objective of this study was to investigate the relationship between human resource quality, college management effectiveness, and student academic performance in universities located in Samarinda, East Kalimantan, using a Structural Equation Modeling (SEM) approach with Partial Least Squares (PLS) as the chosen statistical method.

The sample size for this study was determined based on the guidelines set for SEM-PLS analysis by multiplying 5-10 times the number of indicators, the indicator of this study is 10 so that times 10 means that the minimum sample is 100. To ensure adequate statistical power, a sample size of 100 respondents is considered appropriate (Hair et al., 2019). Stratified random sampling will be used to ensure proportional representation of students, academic staff, and administrative personnel, so as to maintain a diversity of perspectives from key stakeholders.

3.1 Data Collection

Data for this study will be collected through a combination of questionnaires and document analysis.

a. Questionnaire

Separate questionnaires will be designed for students, academic staff, and administrative personnel, focusing on their perceptions of human resource quality, college management effectiveness, and self-reported student academic performance. The questionnaires will
use a Likert scale format to elicit responses, providing a structured format for quantitative analysis. The questions in the questionnaire will be designed based on scales and constructs that have been validated from previous research in the field. The questionnaire is pilot tested first with a small group of participants to assess the clarity and completeness of the questions.

3.2 Data Analysis
a. Data Analysis
The data collected for this study will be analyzed using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) as the statistical method. SEM-PLS is a powerful and versatile approach suitable for analyzing complex relationships between latent variables and observed variables (Hair et al., 2019).

Measurement models will be developed to assess the validity and reliability of the latent constructs (human resource quality, college management effectiveness, and student academic performance) and their respective observed indicators. A reflective measurement model will be used, where the observed variables reflect the underlying constructs. Convergent and discriminant validity will be assessed to ensure that the indicators adequately measure their constructs. A structural model will be used to examine the relationship between human resource quality, college management effectiveness, and student academic performance. The model will assess the direct and indirect effects of human resource quality and college management effectiveness on students' academic performance. Mediation analysis will be conducted to investigate the mediating role of college management effectiveness in the relationship between human resource quality and student academic performance.

Bootstrapping, a resampling technique, will be used to assess the statistical significance of the estimated path coefficients and mediation effects. This method generates multiple resampled data sets and calculates standard errors, confidence intervals, and p-values to validate the model. The fit of the SEM-PLS model will be assessed using fit indices such as Normed Fit Index (NFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). These indices will provide insight into the fit of the model to the data and its explanatory power.

4. RESULTS AND DISCUSSION
4.1 Results
a. Demographic Information
The sample for this study consisted of 100 participants from a university located in Samarinda, East Kalimantan, Indonesia. The participants were categorized into three main groups: The sample was selected using stratified random sampling to ensure proportional representation of the three main stakeholder groups: students, academic staff, and administrative personnel. The distribution of the sample was as follows: Students represented 40% of the total sample. Academic staff represented 30% of the total sample. Administrative staff represented 30% of the total sample. This group consisted of undergraduate and postgraduate students from various disciplines. The demographic characteristics of the student participants were as follows: (1) The age range of the respondents was 18-30 years old. (2) Gender Distribution consists of 42% male, 58% female. (3) Education level consists of 70% undergraduate students and 30% graduate students.
This group consisted of teaching and research staff representing different academic departments. The demographic characteristics of the academic staff participants were as follows: (1) Age Range 30-60 years old. (2) Gender Distribution 60% male, 40% female. (3) Academic Rank 40% professor, 30% chief lector, 30% lecturer. (4) Administrative Personnel Administrative personnel include individuals working in various administrative roles at the university.

b. Validity and Reliability

The measurement model of Structural Equation Modeling (SEM) analysis by testing validity and reliability. The table outlines the main components of the measurement model, the requirement criteria in research with SEM-PLS are factor loading (>0.7), Cronbach’s alpha (>0.7), composite reliability (>0.7), and mean variance extracted (>0.5).

Table 1. Validity and Reliability Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Code</th>
<th>Loading Factor</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>Average Variant Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Education Management</td>
<td>HEM.1</td>
<td>0.909</td>
<td>0.882</td>
<td>0.927</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>HEM.2</td>
<td>0.926</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEM.3</td>
<td>0.863</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of Human Resources</td>
<td>QHR.1</td>
<td>0.863</td>
<td></td>
<td>0.925</td>
<td>0.816</td>
</tr>
<tr>
<td></td>
<td>QHR.2</td>
<td>0.936</td>
<td></td>
<td>0.947</td>
<td></td>
</tr>
<tr>
<td></td>
<td>QHR.3</td>
<td>0.924</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>QHR.4</td>
<td>0.888</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Academic Performance</td>
<td>SAP.1</td>
<td>0.907</td>
<td></td>
<td>0.874</td>
<td>0.799</td>
</tr>
<tr>
<td></td>
<td>SAP.2</td>
<td>0.877</td>
<td></td>
<td>0.922</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAP.3</td>
<td>0.897</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data Processing Results (2023)

Table 1 provides information on factor loadings, Cronbach’s alpha, composite reliability, and mean-variance extracted for the three variables: Higher Education Management (HEM), Quality of Human Resources (QHR), and Student Academic Performance (SAP). For HEM, the factor loadings were 0.909, 0.926, and 0.863, with Cronbach’s alpha values of 0.882, 0.925, and 0.874, respectively. The composite reliability values were 0.927, 0.947, and 0.922, and the mean values of the extracted variance were 0.81, 0.816, and 0.799. For QHR, the factor loadings ranged from 0.863 to 0.924, with Cronbach’s alpha values ranging from 0.925 to 0.888. The composite reliability values were 0.925 and 0.947, and the average extracted variance value was 0.816. For SAP, the loading factors ranged from 0.907 to 0.897, with Cronbach’s alpha values ranging from 0.874 to 0.922. The composite reliability value was 0.922, and the average extracted variance value was 0.799.

Table 2. Discriminant Validity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Higher Education Management</th>
<th>Quality of Human Resources</th>
<th>Student Academic Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Education Management</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of Human Resources</td>
<td>0.62</td>
<td>0.903</td>
<td></td>
</tr>
<tr>
<td>Student Academic Performance</td>
<td>0.707</td>
<td>0.712</td>
<td>0.894</td>
</tr>
</tbody>
</table>

Source: Data Processing Results (2023)
Higher education management has a strong positive correlation with the quality of human resources. The correlation coefficient between higher education management and student academic performance is 0.9. The correlation coefficient between the quality of human resources and student academic performance is 0.62. The correlation coefficient between higher education management, the quality of human resources, and student academic performance is 0.707, 0.712, and 0.894 respectively. Figure 2 shows how the validity and reliability of this study occurred.

![Diagram of Higher Education Management and Student Academic Performance](image)

Figure 2. Model Internal Assessment
Source: Data Processing Results (2023)

c. **GoF Model**

Model fit in SEM-PLS research, specifically in the context of evaluating the relationship among latent variables, can be assessed using various criteria such as R2 and Q2. Researchers have been exploring different model evaluation metrics to improve the rigor of PLS-SEM application. Some of these metrics include qA for internal consistency reliability, HTMT for discriminant validity, and PLSpredict procedure for out-of-sample predictive power assessment. Additionally, the use of alternative techniques like maximum entropy bootstrapping has been proposed to address the limitations of sampling bootstrapping in time series data analysis. In terms of model comparisons, there are two approaches: explanation-oriented and prediction-oriented. PLS-SEM, being a causal-predictive approach, allows for simultaneous explanation and prediction-oriented model assessments. When it comes to assessing model fit in small df models, standardized root means square residual (SRMR) and comparative fit index (CFI) have shown to be less susceptible to the effects of df compared to root mean square error of approximation (RMSEA).
Table 3. Model Fit Results Test

<table>
<thead>
<tr>
<th></th>
<th>Saturated Model</th>
<th>Estimated Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMR</td>
<td>0.054</td>
<td>0.054</td>
</tr>
<tr>
<td>d_ULS</td>
<td>0.163</td>
<td>0.163</td>
</tr>
<tr>
<td>d_G</td>
<td>0.137</td>
<td>0.137</td>
</tr>
<tr>
<td>Chi-Square</td>
<td>81.845</td>
<td>81.845</td>
</tr>
<tr>
<td>NFI</td>
<td>0.899</td>
<td>0.899</td>
</tr>
</tbody>
</table>

Source: Process Data Analysis (2023)

The SRMR values of 0.054 in both the Saturated Model and the Estimated Model suggest a good fit between the model and the data. The values of d_ULS and d_G are reported as 0.163 in both models, indicating a relatively good fit. The chi-square value is reported as 81.845 in both models, suggesting that the Estimated Model does not fit significantly worse than the Saturated Model. Both the Saturated Model and the Estimated Model have an NFI value of 0.899, indicating a relatively good fit of the Estimated Model.

Table 4. Coefficient Model

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
<th>Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Academic Performance</td>
<td>0.622</td>
<td>0.484</td>
</tr>
</tbody>
</table>

Source: Data Processing Results (2023)

The table shows the R Square (coefficient of determination) and Q2 (predictive accuracy) values for predicting student academic performance. The R Square value of 0.622 indicates that 62.2% of the variance in student academic performance can be explained by the predictors used in the model. The Q2 value of 0.484 suggests that the model has a predictive accuracy of 48.4% in terms of correctly predicting student academic performance.

d. Hypotesis

Table 6. Hypotesis Results

|                      | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|----------------------|---------------------|-----------------|-----------------------------|--------------------------|----------|
| Higher Education Management → Student Academic Performance | 0.432               | 0.419           | 0.096                       | 4.491                    | 0        |
| Quality of Human Resources → Student Academic Performance | 0.444               | 0.457           | 0.097                       | 4.558                    | 0        |

Source: Data Processing Results (2023)

The table shows the original sample (O), sample mean (M), standard deviation (STDEV), T statistics (|O/STDEV|), and P values for two variables: Higher Education Management and Quality of Human Resources, in relation to student academic performance. For Higher Education Management, the original sample value is 0.432, the sample mean is 0.419, the standard deviation is 0.096, the T statistic is 4.491, and the P value is 0. The T statistic value indicates a significant effect. For Quality of Human Resources, the original sample value is 0.444, the sample mean is 0.457, the standard deviation is 0.097, the T statistic is...
4.558, and the P value is 0. The T statistic value also indicates a significant effect.

4.2 Discussion

The results of the study provide valuable insights into the relationships between human resource quality, college management effectiveness, and student academic performance in universities located in Samarinda, East Kalimantan.

The positive direct effect of human resource quality on student academic performance is supported by existing literature. Higher perceived quality of academic, administrative, and support staff is associated with improved student academic performance [63]–[65]. This highlights the importance of investing in the qualifications, experience, and commitment of university personnel [47]. This is especially relevant in Samarinda, where the need for improved student academic performance is emphasized [66].

The positive direct effect of college management effectiveness on student academic performance supports previous research [67]. Effective college management practices, including strategic decision-making, resource allocation, and leadership, are associated with higher student academic performance [68]. This highlights the importance of well-organized and efficient administrative practices [69].

4.3 Implications and Recommendations

The findings of this study have several practical implications for universities in Samarinda, East Kalimantan, and beyond:

1. Investment in Human Resources: Universities should prioritize the recruitment, training, and development of highly qualified and committed academic and administrative personnel to enhance the quality of their human resources.

2. Efficient College Management: Administrative practices, including resource allocation, strategic decision-making, and leadership, should be optimized to create an environment conducive to student success.

3. Integrated Approach: University administrators should recognize the interplay between human resource quality and college management effectiveness, focusing on the collaboration and alignment of these aspects.

4. Continuous Improvement: Periodic evaluations of human resource quality and college management practices should be conducted to identify areas for improvement and innovation.

5. Student-Centered Focus: Universities should prioritize student engagement and support services to enhance academic performance and overall student success.

4.4 Limitations

It is important to acknowledge the limitations of this study. The findings are based on self-reported data, which may introduce response bias. Additionally, the research is conducted in a specific geographical region, which may limit the generalizability of the findings to other contexts. Future research could explore these relationships in diverse regions and cultural contexts.

5. CONCLUSION

In conclusion, this study has provided valuable insights into the relationships between higher education management, the quality of human resources, and student academic performance in the context of universities in Samarinda, East Kalimantan, Indonesia. The research findings indicate that both higher education management and the
quality of human resources play significant roles in influencing student academic outcomes. Positive perceptions of higher education management and human resource quality among these stakeholder groups highlight the potential for improving student academic performance through enhanced management practices and investments in human resource development.

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