

# Performance Paradigm: Entrepreneurial Good University Governance Mediating Leadership Style in State Universities

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## ABSTRACT

This study examined the influence of Entrepreneurial Good University Governance (EGUG) on Service Performance (SEV), Financial Performance (FIN), and Sustainability Performance (SUS), with Leadership Style (LS) as a mediating variable in State University of Public Service Agency (SU-PSA) in Indonesia. A **quantitative** approach was applied, involving 64 respondents, and data were analyzed using the SEM-PLS method. **The findings** revealed that EGUG significantly impacted service, financial, and sustainability performance. Leadership style also had a substantial effect, partially mediating the relationship between EGUG and performance outcomes. EGUG influence on performance was both direct and indirect through leadership style. **The novelty** of this study lies in extending Good University Governance to include EGUG, which fosters innovation, financial sustainability, and public service. Practical examples, such as the Bandung Institute of Technology, illustrate how entrepreneurial governance enhances financial independence and strengthens industry ties. Similar models have been adopted in the United States and Europe, where entrepreneurial governance supports academic excellence and contributes to regional economic development. This approach offers a flexible governance model for other institutions to address their unique challenges. However, the relatively small sample size of 64 respondents limits the generalizability of the findings. The specific focus on SU-PSA under the Ministry of Education, Culture, Research, and Technology may not fully represent other university types. **Future studies** should expand the sample and include a broader range of universities to enhance the robustness and applicability of the results.

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## 1. INTRODUCTION

Good University Governance (GUG) is the implementation of effective practices in university governance [1]. Furthermore, GUG unites important characteristics that originated from good governance principles, including the identification of stakeholders, clarification of each role of the stakeholder and responsibilities, law enforcement, consensus orientation, and a commitment to equality and inclusivity. These characteristics

intensify the diverse principles, practices, and perspectives [2]. The initiatives of the government to instill autonomy and GUG in State Universities (SU) are evident in the categorization of public universities into three types namely, State Universities of Work Unit (SU-WU), State Universities of Public Service Agency Financial (SU-PSA), and State Universities of Legal-Entity (SU-LE). However, the autonomy of public university is complicatedly connected to the participation of stakeholders dedicated to ensuring accountability and reaching university aims. The status of SU-PSA is interesting because SU-PSA is a non-profit public sector organization committed to delivering excellent service to the community [3, 4]. Furthermore, inputs are supported by government funds, and the resulting outputs are measured, indicating the importance of performance measurement in assessing the efficiency of using government funds. Also recommended that the proper implementation of corporate governance in companies led to improved performance. Entrepreneurial activities in universities are increasingly seen as essential drivers of innovation, economic growth, and societal advancement [5, 6]. The integration of entrepreneurial principles within the framework of Entrepreneurial Good University Governance (EGUG) can enhance the capacity of universities to navigate the complexities of modern educational environments. By fostering a culture that encourages innovation, resourcefulness, and proactive problem-solving, universities can better achieve their mission of delivering high-quality education, research, and public service. This entrepreneurial approach aligns with the autonomy granted to Indonesian State Universities (SUs) under Law No. 12 of 2012 and Government Regulation No. 4 of 2014, which emphasize the importance of independent governance and accountability in higher education institutions [7].

The concept of entrepreneurial university governance involves leveraging entrepreneurial leadership styles to promote a more dynamic, adaptable, and resilient educational institution [8]. In this context, leaders are not only responsible for maintaining the operational and financial stability of the university but also for identifying and seizing opportunities for growth and innovation. This proactive leadership can transform universities into hubs of creativity and economic activity, fostering partnerships with industry and government, and driving regional development. The entrepreneurial orientation in university governance thus provides a strategic advantage, enabling universities to generate additional revenue streams, enhance their competitive position, and contribute more effectively to societal needs [9, 10].

Study on GUG to improve university performance in Indonesia has been extensive, yet results remain inconsistent and inconclusive [11]. This is obvious in numerous previous studies that successfully showcased the impact of GUG on university performance, as shown by the works. Despite these advancements, the empirical testing of the influence of GUG implementation on the service, financial, and sustainability performance of SU-PSA is lacking [12, 13].

The presence of EGUG is anticipated to enhance state university performance through effective Leadership Style (LS) from the Rector, as leadership plays a critical role in implementing Good Governance and improving the quality of higher education [14, 15]. Current SU-PSA performance evaluations rely on performance assessments and contracts, focusing on financial and service aspects but lacking in evaluating sustainable internal business processes. EGUG, as an innovative governance model, has been successfully implemented in institutions like the Bandung Institute of Technology, integrating entrepreneurial strategies and fostering stronger industry partnerships. This study aims to analyze the impact of EGUG implementation on service, financial, and sustainability performance, mediated by leadership style [16, 17].

The remainder of this paper is organized as follows. Part 2. includes Literature Review and Hypotheses Development describing Agency Theory, Stewardship theory and Stakeholder Theory in universities, and hypotheses development that reflected in the Conceptual framework is described in detail in part 2., starting with an illustration of 5 variable conceptual frameworks, comprising EGUG, LS, SEV, FIN, and SUS, and following with the hypothesis research [18]. Part 3. presents the research method with a description of 64 respondents with demographic. The following part talks about the result and discussion, starting from the measurement model, structural model, and analysis of the structural model. This part also involves research analysis and discussion, which delves into the variables demonstrating significant effects and presents the results of a multigroup analysis [19]. Finally, we wrap up the research by summarizing the conclusions and the research implications. Upcoming challenges indicate the path for future investigations that will organically be pursued by the authors of this paper or other researchers with an interest in this research area [20].

This study aligns with the global objectives outlined in the United Nations Sustainable Development Goals (SDGs), particularly Goals 4, 8, and 9, which focus on quality education, decent work and economic growth, and industry, innovation, and infrastructure [21]. The integration of Entrepreneurial Good University Governance (EGUG) within state universities not only enhances financial and service performance but also

supports sustainable development. By promoting innovation, resource management, and partnerships between universities and industries, EGUG fosters sustainable practices that align with the SDGs [22]. The emphasis on leadership style further highlights the role of university governance in driving societal and economic progress through educational institutions, contributing to the broader goals of sustainability and equitable growth in the higher education sector.

## 2. LITERATURE REVIEW

Agency Theory is concerned with solving two problems that can occur in agency relationships. The first is the agency problem which arises when;

- The desires or goals of the principal and the agency conflict.
- It is difficult or expensive for the principal to verify what the agent actually does [23].

The problem here is that the principal cannot verify that the agent has behaved appropriately. Second is the problem of risk sharing which arises when the principal and agent have different attitudes towards risk. Problems arise when the principal and agent can choose different actions due to differences in risk preferences.

Stewardship theory views management as trustworthy to act in the best interests of the public and stakeholders. The implication of stewardship theory in higher education is that stewards (university management) will work as well as possible for the interests of the owners (society and government) [24]. This theory comes from sociology and psychology which states that the function of management is to maximize utility and protect shareholders through company performance. Stewardship focuses on manager behavior that prioritizes the interests of the organization over personal interests [25]. In this theory, managers are more concerned with credibility or public trust, managers will try to manage resources optimally and make decisions that are best for the interests of the organization [26].

Stakeholder Theory considers the position of stakeholders who are considered powerful. Universities must be accountable to interested parties or stakeholders. Stakeholders of universities are divided into two, namely internal (students, lecturers and teaching staff) and external (government, community, professional associations, National accreditation Boards for higher education and others). Stakeholders demand that state universities be accountable in terms of among other things:

- Implementing mandates and strategic directions & policies.
- Guaranteed quality and relevance of outputs existence of a quality assurance system.
- Ensuring effectiveness and efficiency as well as transparency and accountability in financial management.
- The realization of good management in higher education [27].

Stakeholders expect universities to demonstrate accountability and effective governance through strategic alignment with institutional goals and policies. This includes ensuring the quality and relevance of educational and research outputs, supported by robust quality assurance systems. Efficient use of resources, transparency, and accountability in financial management are also critical to maintaining trust and meeting stakeholder expectations. Overall, universities are required to implement sound management practices that uphold their credibility and fulfill their responsibilities to both internal and external stakeholders.

### 2.1. Hypotheses

The concept of entrepreneurial university governance extends beyond traditional administrative practices to encompass the strategic implementation of entrepreneurial activities and mindsets within higher education institutions. Introduced the idea of the entrepreneurial university, emphasizing the importance of diversified funding sources, innovative organizational structures, and a strong linkage with external stakeholders. Subsequent research has reinforced the notion that entrepreneurial governance can significantly contribute to the overall performance and sustainability of universities. By adopting entrepreneurial governance practices, universities can better navigate the challenges of financial constraints, rapidly changing educational demands, and increased competition, ultimately enhancing their ability to fulfill their educational and societal missions [28].

Leadership styles play a crucial role in fostering an entrepreneurial culture within universities. Transformational and transactional leadership styles, when effectively integrated, can drive the entrepreneurial orientation of an institution. Transformational leaders inspire and motivate staff and students to pursue innovative and creative solutions, while transactional leaders ensure the efficient management of resources and adherence to organizational goals. This dual approach aligns with the principles of GUG, which advocate for transparency, accountability, and inclusivity [29, 30]. Research has shown that universities led by entrepreneurial leaders are more likely to engage in activities that promote innovation, commercialization of research, and strategic partnerships. Therefore, understanding the interplay between entrepreneurial leadership and GUG is essential for enhancing the performance and sustainability of state universities [31].

According identified the influence of University Governance on Performance through principles such as fairness, responsibility, accountability, governance structure, transparency, autonomy, credibility, and vision mission. However, this influence showed across five dimensions namely, academic service, finance, staff/human resources, students, and study. Other scholars, including, and, also established a connection between university governance and performance. Proposed that GUG significantly impacted university performance at Sepuluh Nopember Institute of Technology. Explored SU-LE and SU-PSA, showing that GUG and intellectual capital had a positive and significant influence on performance [32]. GUG positively and significantly affected the performance of SU-LE and SU-PSA in Indonesia. On the other hand, formulated university governance assessment indicators, indicating the importance of dimensions such as management and direction, accountability, and autonomy. Several results introduced additional variables, such as moderation, mediation, and intervening variables, to show the relationship and influence between GUG/GCG and university/company performance [33, 34]. For instance discovered that university governance variables influenced university performance with organizational commitment as a moderating variable [35]. Regarding these considerations, the following five hypotheses were formulated, including:

- H1:** Entrepreneurial Good University Governance influences Financial Performance (FIN).
- H2:** Entrepreneurial Good University Governance Influences Service Performance (SEV).
- H3:** Entrepreneurial Good University Governance Influences Sustainability Performance (SUS).
- H4:** Financial Performance influences Sustainability Performance.
- H5:** Service Performance influences Sustainability Performance.

Previous studies have examined the relationship between Good University Governance (GUG), leadership, and university performance, but this study takes a unique approach. It specifically explores how GUG and Leadership Style (LS) influence comprehensive university performance, encompassing service, financial, and sustainability aspects. Academic leadership, particularly in universities, combines managerial and academic responsibilities, with leaders often chosen by peer election based on merit rather than campaigns. University leadership transcends individual personalities, focusing instead on leadership style and the ability to enhance institutional accountability and performance.

Several studies have linked Leadership Style (Transformational and Transactional) with both financial and academic performance in universities. However, the relationship between leadership styles and sustainability performance remains underexplored. This research aims to address that gap by examining how Governance, University Goals, and Leadership Style contribute to overall university performance. The formulated hypotheses are grounded in previous findings and aim to provide new insights into improving institutional outcomes [36].

- H6:** Entrepreneurial Good University Governance Influences Leadership Style.
- H7:** Leadership Style influences Financial Performance.
- H9:** Leadership Style influences Sustainability Performance.
- H10:** Entrepreneurial Good University Governance has an influence on Financial Performance through Leadership Style.
- H11:** Entrepreneurial Good University Governance has an influence on Service Performance through Leadership Style.
- H12:** Entrepreneurial Good University Governance has an influence on Sustainability Performance through Leadership Style.

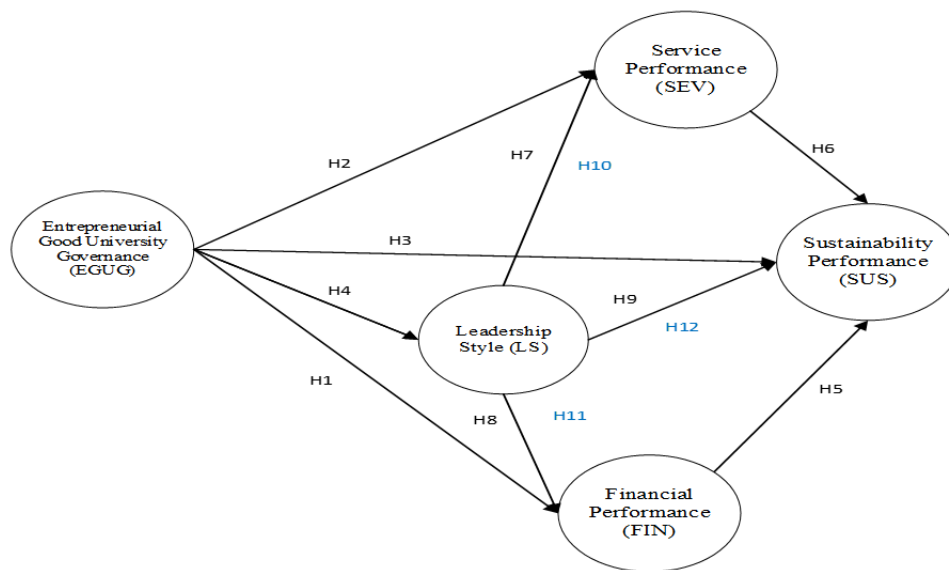


Figure 1. Conceptual Framework

The novelty of this study lies in its extension of the concept of GUG to encompass EGUG in Figure 1. By integrating entrepreneurial principles into the traditional framework of GUG, this research introduces a more dynamic and adaptable governance model that aligns with the contemporary challenges faced by state universities. The compelling reason for adopting EGUG is the increasing demand for higher education institutions to not only provide quality education and research but also to drive innovation, economic development, and societal progress. The significance of this approach lies in its potential to transform universities into hubs of creativity and economic activity, fostering partnerships with industry and government to address real-world problems. The urgency of adopting EGUG is underscored by the rapidly changing global landscape, which requires universities to become more proactive and resourceful, leveraging entrepreneurial strategies to enhance their operational efficiency, financial sustainability, and overall impact. This approach enables universities to cultivate a culture of innovation and agility, positioning them as pivotal players in fostering economic growth and addressing societal needs [37, 38].

### 3. RESEARCH METHOD

The population of this study included all SUs in Indonesia. Purposive sampling was used to choose the samples, and the following criteria were determined: SUs with financial management of public service agencies and are under the Ministry of Education, Culture, Research, and Technology. This study was conducted through a quantitative approach consisting of primary data on 99 respondents (Table 1). A minimum sample size was satisfied because 64 responses could be gathered and used for data analysis. The questionnaires were distributed and collected in proportion, with 64 questionnaires processed.

Table 1. Questionnaire Distribution Results

| Information                 | Reponses  |              |
|-----------------------------|-----------|--------------|
|                             | Frequency | %            |
| Sent                        | 99        | 100.00       |
| Received                    | 90        | 91.00        |
| Un-appropriate respondent   | 25        | 28.00        |
| Extreme answer              | 1         | 1.00         |
| <b>Usable questionnaire</b> | <b>64</b> | <b>71.00</b> |

To validate the findings, a comparative analysis between SEM-PLS and CB-SEM was considered, with CB-SEM favored for comprehensive model fit assessment. SEM-PLS was chosen for its robustness with

smaller samples and ability to handle complex models, though it relies on bootstrapping, which may introduce bias in small sample studies. Future research could combine SEM-PLS and CB-SEM for a balanced perspective on model validity. SEM-PLS is powerful due to its applicability to all data scales, minimal assumptions, and suitability for small sample sizes [39].

Table 2. Variables of Research

| Latent                                   | Manifest                                                                                                                                                                                                                                                                                                                                                                   | Source                                                                                                                                                                           |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Entrepreneurial University (EGUG)</b> | <ul style="list-style-type: none"> <li>• Transparency</li> <li>• Accountability</li> <li>• Responsibilities</li> <li>• Independence</li> <li>• Fairness</li> </ul>                                                                                                                                                                                                         | Evaluandia & Sulistyowati;<br>Hamzah; Machmuddah;<br>Quyên; Wijaya & Supriyono<br>Rymarzak, Rymarzak, den Heijer;<br>Curvelo, Magdaniel, & Arkesteijn;<br>Anggriawan & Nurkholis |
| <b>Leadership Style (LS)</b>             | <ul style="list-style-type: none"> <li>• Transformational</li> <li>• Transactional</li> </ul>                                                                                                                                                                                                                                                                              | Sahaya; Avolio & Bass;<br>Tran; Wahab                                                                                                                                            |
| <b>Financial (FIN)</b>                   | <ul style="list-style-type: none"> <li>• Ability to meet short-term debt obligations</li> <li>• Ability to conduct educational service (business operations)</li> <li>• Ability to generate budget surpluses during specific periods</li> <li>• Ability to efficiently use assets to generate university revenue</li> </ul>                                                | PER Dirjen Perbendaharaan<br>No 32/PB/2014<br>Mohanlingam & Linh<br>Kharusi & Y.<br>Almagtomea                                                                                   |
| <b>Service (SEV)</b>                     | <ul style="list-style-type: none"> <li>• Program Accreditation</li> <li>• Percentage Deviation of the Ratio of Adequate Educational Personnel Availability</li> <li>• Percentage of New Students Re-Enrolling Compared to Newly Accepted Students</li> <li>• Percentage of Competitive Grants Obtained by the University</li> <li>• Customer Satisfaction Level</li> </ul> | PER Dirjen Perbendaharaan<br>No 32/PB/2014<br>Hair, Anderson, Babin, & Balck<br>El Alfy & Abukari<br>Teeroovengadum<br>Muhsin                                                    |
| <b>Sustainability (SUS)</b>              | <ul style="list-style-type: none"> <li>• Environment</li> <li>• Social</li> <li>• Economy</li> </ul>                                                                                                                                                                                                                                                                       | PER Dirjen Perbendaharaan<br>No 32/PB/2014<br>Wolok, Pham & Kim<br>Almagtomea                                                                                                    |

The table 2 shown research outlines five main latent variables along with their corresponding manifest variables and sources. EGUG includes transparency, accountability, responsibilities, independence, and fairness, as supported by various sources. LS is categorized into transformational and transactional styles. FIN focuses on the ability to meet short-term debt obligations, conduct educational services, generate budget surpluses, and efficiently use assets to increase university revenue. SEV emphasizes program accreditation, deviation in adequate educational personnel availability, re-enrollment rates, competitive grants obtained, and customer satisfaction levels. Finally, SUS covers environmental, social, and economic dimensions. Each latent variable is paired with its sources, providing a comprehensive framework for the study's analysis.

#### 4. FINDING

The study involved 64 respondents from SU-PSA, originating from diverse regions across Indonesia, including Java, Sumatra, Kalimantan, Bali, Nusa Tenggara, Sulawesi, Maluku, and Papua. These respondents reflected varied profiles, as presented in Table 3, covering demographic, length of service, and functional roles. The respondents predominantly belonged to the middle-aged and senior age groups, with extensive experience in their roles. Additionally, many respondents held prominent academic positions, showcasing their

qualifications and contributions to the institutional performance under study.

The profiles in Table 3 further highlight the diversity of respondents in terms of their professional roles and tenure within SU-PSA. A significant portion of the respondents had long-standing experience, indicating their deep familiarity with the operational and governance aspects of state universities. The representation of respondents from various functional roles, including instructors, professors, and associate professors, underscores the balanced perspectives captured in this study. This comprehensive respondent profile provides a robust foundation for analyzing the relationship between governance, leadership styles, and university performance.

Table 3. Respondent Profile

| Demographic              | Category            | Number | %    |
|--------------------------|---------------------|--------|------|
| Gender                   | Male                | 46     | 71.9 |
|                          | Female              | 18     | 28.1 |
| Age                      | <40 year            | 6      | 9.4  |
|                          | 41-45 year          | 15     | 23.4 |
|                          | 46-50 year          | 15     | 23.4 |
|                          | 51-55 year          | 13     | 20.3 |
|                          | >55 year            | 15     | 23.4 |
|                          | 1 - 5 year          | 4      | 6.3  |
| Length of Work           | 6 - 10 year         | 4      | 6.3  |
|                          | 11 - 15 year        | 5      | 7.8  |
|                          | >15 year            | 51     | 79.7 |
|                          | Instructor          | 3      | 4.7  |
| Academic Functional Role | Professor           | 13     | 20.3 |
|                          | Associate Professor | 24     | 37.5 |
|                          | Assistant Professor | 24     | 37.5 |
|                          |                     |        |      |

The demographic characteristics presented in Table 3 showcase the diversity of respondents in terms of gender, age, length of work, and academic functional roles. The respondents come from various professional backgrounds, reflecting a balanced representation of both genders and a wide age range, predominantly in the 41-55 age bracket. This indicates a mature workforce with substantial professional experience, which is crucial for providing informed perspectives on governance and performance evaluation in state university public service agencies (SU-PSA). Additionally, the distribution across different lengths of service demonstrates that most respondents have significant tenure, indicating their familiarity with the institutional practices and challenges within SU-PSA.

The functional roles represented in the table further highlight the academic diversity, with respondents serving as instructors, professors, associate professors, and assistant professors. The strong representation of associate and assistant professors signifies the pivotal roles they play in academic and managerial capacities within universities. This composition offers a comprehensive view of leadership and governance influences across varying academic ranks. Such diversity strengthens the reliability of the study's findings, as the respondents provide insights drawn from both academic and administrative experiences, ensuring a holistic analysis of SU-PSA performance in the context of governance and leadership styles.

#### 4.1. Analysis of Structural Equation Modeling

In this study, SmartPLS performed two testing models namely, the measurement model (outer model) and the structural model (inner model). Measurement model testing included Convergent Validity, Discriminant Validity, and reliability testing. Reliability testing aimed to examine the accuracy, consistency, and precision of instruments in measuring constructs using Composite Reliability (CR). For a confirmatory study, CR value should have exceeded 0.7, a value of 0.6-0.7 was still acceptable for an exploratory analysis. However, the Average Variance Extracted (AVE) value should have surpassed 0.5.

#### 4.2. Convergent Validity

Convergent validity assessed the accuracy of items in measuring the study object, using the loading factor in this study. According to, an item demonstrated convergent validity when the loading factor count was above 0.7 and Table 4 shows the loading factor counts.

Table 4. Convergent Validity Testing

| Variable                                          | Indicator | Factor Loading | Average Variance Extracted (AVE) |
|---------------------------------------------------|-----------|----------------|----------------------------------|
| Entrepreneurial Good University Governance (EGUG) | GUG1      | 0.695          | 0.670                            |
|                                                   | GUG2      | 0.884          |                                  |
|                                                   | GUG3      | 0.767          |                                  |
|                                                   | GUG4      | 0.891          |                                  |
|                                                   | GUG5      | 0.838          |                                  |
| Leadership Style (LS)                             | LS1       | 0.948          | 0.903                            |
|                                                   | LS2       | 0.953          |                                  |
| Financial Performance (FIN)                       | FIN1      | 0.842          | 0.689                            |
|                                                   | FIN2      | 0.738          |                                  |
|                                                   | FIN3      | 0.882          |                                  |
|                                                   | FIN4      | 0.852          |                                  |
| Service Performance (SEV)                         | SEV1      | 0.704          | 0.593                            |
|                                                   | SEV2      | 0.745          |                                  |
|                                                   | SEV3      | 0.670          |                                  |
|                                                   | SEV4      | 0.882          |                                  |
|                                                   | SEV5      | 0.854          |                                  |
|                                                   | SEV6      | 0.689          |                                  |
|                                                   | SEV7      | 0.821          |                                  |
| Sustainability Performance (SUS)                  | SUS1      | 0.866          | 0.835                            |
|                                                   | SUS2      | 0.935          |                                  |
|                                                   | SUS3      | 0.938          |                                  |

The Table 4 showed the loading factor values for each manifest variable and the values for various pointers on latent variables exceeded 0.7, signifying the validity of all these indicators. AVE values for the 5 latent variables were greater than 0.5, affirming the validity of all variables in explaining the latent variables. Therefore, this showed that the use of these manifest variables satisfied AVE requirements, meeting convergent validity criteria.

#### 4.3. Discriminant Validity

Discriminant validity is a critical measure in structural equation modeling (SEM) to ensure that each latent construct is conceptually distinct and measured accurately by its respective indicators. It verifies that the indicators of one construct correlate more strongly with their associated construct than with others, thereby avoiding conceptual overlap. This assessment was conducted using cross-loading factor measurements and Average Variance Extracted (AVE) comparisons with latent variable correlations. Indicators for each construct were analyzed to ensure their correlation with the intended construct exceeded their correlations with other constructs. This step confirmed the independence and specificity of the constructs being measured.

The results presented in Table 5 showed that the correlation between each latent construct and its corresponding indicators was consistently higher than the correlation with other constructs, indicating that each indicator distinctly measured its assigned variable. Furthermore, the AVE values surpassed the required threshold, further validating the discriminant validity of the model. These findings demonstrate the robustness of the measurement model, ensuring clarity and precision in capturing the relationships among constructs.

The high discriminant validity established in this study underscores the reliability and credibility of the measurement model. It confirms that the constructs are unique and independent, eliminating the risk of measurement overlap. This ensures that the relationships observed among latent variables in the study are meaningful and accurately reflect the underlying phenomena. Ultimately, the validation of discriminant validity provides a solid foundation for interpreting the study findings and enhances the overall credibility of the research outcomes.

Discriminant validity not only ensures conceptual distinctiveness among constructs but also strengthens the overall quality of the research framework. By validating that each construct measures unique dimensions of the study, it reduces the risk of biased results caused by overlapping variables. This validation is crucial

for the reliability of the structural equation model, particularly when exploring complex relationships among latent variables. In this study, the strong discriminant validity provides confidence that the observed relationships are attributable to genuine interactions among constructs, rather than measurement errors or redundancy. This enhances the robustness of the conclusions and offers a reliable basis for future research and practical applications in the field.

Table 5. Discriminant Validity Testing Results - Cross Loading Factors

|      | <b>LS</b> | <b>EGUG</b> | <b>FIN</b> | <b>SEV</b> | <b>SUS</b> |
|------|-----------|-------------|------------|------------|------------|
| LS1  | 0.948     | 0.713       | 0.710      | 0.684      | 0.756      |
|      | 0.953     | 0.771       | 0.730      | 0.641      | 0.843      |
| GUG1 | 0.542     | 0.695       | 0.643      | 0.556      | 0.700      |
|      | 0.685     | 0.884       | 0.744      | 0.572      | 0.779      |
|      | 0.518     | 0.767       | 0.692      | 0.516      | 0.683      |
|      | 0.711     | 0.891       | 0.719      | 0.528      | 0.751      |
|      | 0.714     | 0.838       | 0.784      | 0.640      | 0.751      |
| FIN1 | 0.661     | 0.708       | 0.842      | 0.645      | 0.726      |
|      | 0.592     | 0.693       | 0.738      | 0.628      | 0.598      |
|      | 0.646     | 0.767       | 0.882      | 0.504      | 0.746      |
|      | 0.618     | 0.747       | 0.852      | 0.463      | 0.776      |
| SEV1 | 0.341     | 0.402       | 0.391      | 0.704      | 0.434      |
|      | 0.483     | 0.474       | 0.461      | 0.745      | 0.511      |
|      | 0.394     | 0.348       | 0.284      | 0.670      | 0.393      |
|      | 0.598     | 0.515       | 0.513      | 0.882      | 0.629      |
| SEV5 | 0.523     | 0.532       | 0.476      | 0.854      | 0.546      |
| SEV6 | 0.553     | 0.479       | 0.497      | 0.689      | 0.541      |
| SEV7 | 0.717     | 0.792       | 0.788      | 0.821      | 0.834      |
| SUS1 | 0.673     | 0.786       | 0.737      | 0.560      | 0.866      |
| SUS2 | 0.830     | 0.819       | 0.817      | 0.694      | 0.935      |
| SUS3 | 0.796     | 0.852       | 0.802      | 0.800      | 0.938      |

Fornell-Larcker criterion helped as the second approach to assess discriminant validity. It compared the square root of AVE values with correlations between latent variables. Specifically, the square root of each AVE of the construct should have exceeded the highest correlation with other constructs. Another method to assess Fornell-Larcker criterion results was to determine whether it surpassed the square of the correlation with another construct.

Table 6. Discriminant Validity Testing Results - Fornell-Lacker Criterion

| <b>Variable</b>                            | <b>LS</b> | <b>EGUG</b> | <b>FIN</b> | <b>SEV</b> |
|--------------------------------------------|-----------|-------------|------------|------------|
| Entrepreneurial Good University Governance | 0.818     |             |            |            |
| Financial Performance                      | 0.878     | 0.830       |            |            |
| Service Performance                        | 0.689     | 0.669       | 0.770      |            |
| Sustainability Performance                 | 0.897     | 0.860       | 0.755      | 0.914      |
| Leadership Style                           | 0.781     | 0.758       | 0.697      | 0.842      |

Fornell-Larcker method operated on the idea that constructs showed more shared modification with related signs than through other constructs. The Table 6 showed that all square root values for each variable surpassed the correlations. Consequently, it could be inferred that the model showed good discriminant validity.

#### 4.4. Reliability Testing

In Partial Least Square (PLS) analysis, reliability testing was conducted using two key measures: Composite Reliability (CR) and Cronbach's Alpha, as presented in Table 7. The results demonstrated that the CR and Cronbach's Alpha values met the required thresholds, indicating strong internal consistency. This confirms that the indicators used to measure the latent variables consistently reflected their respective constructs.

The reliability established in this analysis ensures that the data is robust and suitable for further exploration in structural modeling, providing confidence in the accuracy and consistency of the measurement model.

Table 7. CR and Alpha of Cronbach Testing Results

|                                                   | Alpha of Cronbach | Composite Reliability |
|---------------------------------------------------|-------------------|-----------------------|
| Entrepreneurial Good University Governance (EGUG) | 0.874             | 0.910                 |
| Financial Performance (FIN)                       | 0.848             | 0.898                 |
| Service Performance (SEV)                         | 0.885             | 0.910                 |
| Sustainability Performance (SUS)                  | 0.900             | 0.938                 |
| Leadership Style (LS)                             | 0.893             | 0.949                 |

The test results showed that CR values exceeded 0.7, and the Alpha of Cronbach values surpassed 0.6. Therefore, the data was considered reliable, signifying that all signs consistently measured the respective variables.

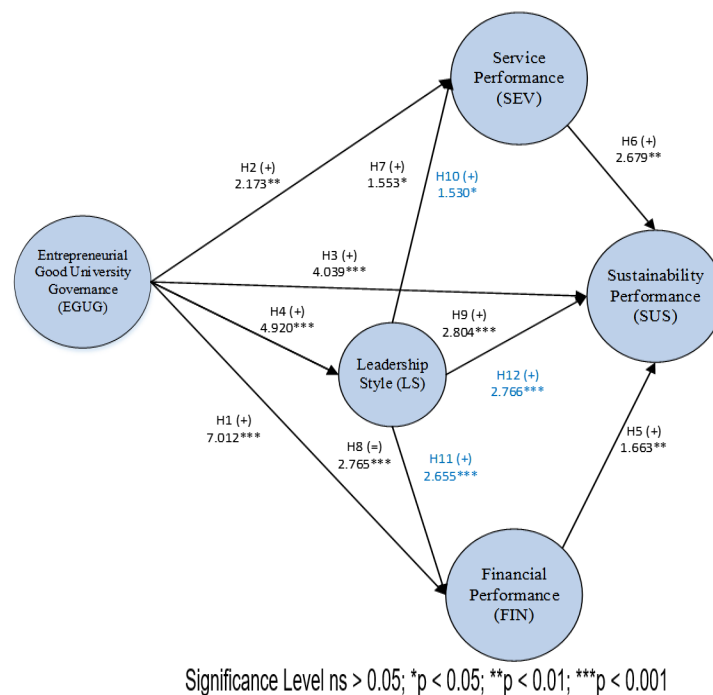


Figure 2. Measurement Model (Outer Model)

To simplify the interpretation of the bootstrapping results, the significance of each path coefficient can be understood by focusing on the p-values and t-statistics. A p-value less than 0.05 indicates a significant relationship between variables, while a higher t-value signifies a stronger effect. For example, the relationship between EGUG and FIN was found to be highly significant with a p-value of 0.000 and a t-statistic of 6.788, indicating a robust positive impact. This simplified explanation allows readers with varying statistical knowledge to better understand the key outcomes of the study as shown in Figure 2.

#### 4.5. Hypothesis Testing

The hypotheses in this study were tested using the path coefficient values and t-values to determine the presence of a significant influence. Additionally, the significance testing results of the paths also showed the coefficient parameter values (original sample), reflecting the significance of the influence of each variable.

Table 8. Path Significance Testing

|     | Hypothesis      | Original Sample (O) | T Statistics (—O/STDEV—) | P Values | Description |
|-----|-----------------|---------------------|--------------------------|----------|-------------|
| H1  | EGUG ->FIN      | 0.734               | 6.788                    | 0.000*** | Supported   |
| H2  | EGUG ->SEV      | 0.371               | 2.224                    | 0.027**  | Supported   |
| H3  | EGUG ->SUS      | 0.415               | 4.212                    | 0.000*** | Supported   |
| H4  | EGUG ->LS       | 0.781               | 15.776                   | 0.000*** | Supported   |
| H5  | FIN ->SUS       | 0.253               | 2.070                    | 0.039**  | Supported   |
| H6  | LAY ->SUS       | 0.229               | 3.677                    | 0.000*** | Supported   |
| H7  | LS ->FIN        | 0.185               | 1.504                    | 0.063*   | Supported   |
| H8  | LS ->SEV        | 0.406               | 2.901                    | 0.004*** | Supported   |
| H9  | LS ->SUS        | 0.263               | 2.804                    | 0.003*** | Supported   |
| H10 | EGUG ->LS ->FIN | 0.144               | 1.464                    | 0.064*   | Supported   |
| H11 | EGUG ->LS ->SEV | 0.317               | 2.823                    | 0.005**  | Supported   |
| H12 | EGUG ->LS ->SUS | 0.206               | 2.766                    | 0.003*** | Supported   |

Table 8 showed that, in total, the constructs (predictor and criterion variables) measured in this study could explain and predict the observed phenomena. For instance, EGUG could clarify and predict LS and performance, including service, financial, and sustainability of SU-PSA. R-square values showed the impact of dependent variables and below were the results of R-square values.

Table 9. Path Significance Testing Table

|                                  | R-Square |
|----------------------------------|----------|
| Service Performance (SEV)        | 0,540    |
| Financial Performance (FIN)      | 0,785    |
| Sustainability Performance (SUS) | 0,854    |
| Leadership Style (LS)            | 0,609    |

The Table 9 showed the coefficient of determination (R-square) values, showing an understanding of the relationships between variables in different sub-structures. In sub-structure 1, the R-square value for LS variable was 0.609, recommending that 60.9% of LS variable could be explained by the EGUG variable. Furthermore, in sub-structure 2, R-square value for the SEV variable was 0.540, showing that 54.0% of SEV variable could be explained by EGUG and LS variables. In sub-structure 3, R-square value for FIN variable was 0.785, showing that 78.5% of FIN variable could be explained by EGUG and LS variables. Meanwhile, in sub-structure 4, R-square value for the SUS variable was 0.854, showing that 85.4% of the sustainability performance variable could be explained by EGUG, LS, SEV, and FIN variables.

## 5. RESEARCH IMPLEMENTATION

### 5.1. The Influence of GUG on Financial Performance

Hypothesis 1 postulated that EGUG significantly influenced financial performance. The significant testing results recommended that the implementation of GUG had been effective, influencing the financial performance of SU-PSA. EGUG variable comprised five principles namely, Transparency (GUG1), Accountability (GUG2), Responsibility (GUG3), Independence (GUG4), and Fairness (GUG5). The dominant indicators shaping GUG implementation in SU-PSA were Accountability (GUG2) and Independence (GUG4). The most influential indicators of financial performance (KEU) included the ability of SU-PSA to generate budget surpluses in a certain period (KEU3) and the efficient use of assets to generate university revenue (KEU4). However, this recommended that accountable and independent financial management implementation improved the financial performance of SU-PSA, particularly in increasing budget surpluses through efficient asset use.

In the study confirmed that the adoption of GUG influenced the financial management performance of SU in Central Java. Furthermore, this described the adaptability of GCG practices, traditionally associated with profit-oriented companies, to non-profit institutions, specifically SU-PSA. Financial performance in SU-PSA, as a non-profit entity, was pushed by GCG practices. The study, titled “GUG and Its Implication on Manage-

rial Performance”, also supported this idea. The result showed that the positive and significant influence of implementing GUG extended to managerial performance from a financial perspective. and showed that the implementation of independence principles was connected to conflicts of interest. Furthermore, these conflicts arose when individuals or organizations were trapped in diverse interests, potentially compromising worker motivation. The implementation of EGUG was associated with the concepts of agency and stewardship theory, indicating the necessity of corporate governance in ensuring the interests of stakeholders and long-term sustainability. Drawing on this theory, the adoption of GUG necessitated university management to support the institution with its primary objectives and functions, with a focus on improving total performance, particularly in financial terms. Furthermore, using a stakeholder theory approach, EGUG implementation in a university had to consider the interests of stakeholders and the public. The pursuit of strong financial performance, and loyalty to EGUG principles, became a focal point for stakeholders. However, stakeholder theory posited that institutions developed from the complex interplay of functions, roles, and heterogeneity joining in a single institution.

### 5.2. The Influence of GUG on Service Performance

The results of testing Hypothesis 2 were accepted, signifying that GUG had a significant impact on service performance. This discovery implied that the academic excellence of students (LAY4) and a student satisfaction rate exceeding 80% (LAY7) could be improved through the implementation of GUG at SU-PSA. However, as the execution of GUG became better, service performance became higher. Based on prior studies, the current exploration showed that GUG significantly and positively impacted the performance of SU-PSA and SU-LE in Indonesia. The performance of higher education institutions was strengthened by cultivating an enriching academic environment that included faculty, students, and other academic communities interacting in the university, promoting a high-quality learning and study process. Proposed that implementing good governance, based on transparency and accountability principles, influenced the quality of human resources, particularly in augmenting the quantity of study and community service (PKM). This result supported the assertion of that the performance of higher education institutions included four dimensions namely, students, study, staff and resources, and financial/efficiency. Academic achievement and student satisfaction levels rose with the implementation of GUG at SU-PSA in Indonesia, focusing on accountability and independence. According to GUG would be better appropriate for universities that aimed to improve the dimensions of Accountability, Responsibility, and Independence. Furthermore, this was associated with Stewardship theory, where university management, as a trusted entity, provided service for the public interest and the interests of stakeholders. The results differed from, who observed that university governance significantly affected the performance of higher education institutions. The emphasis on participants or the organizational structure of higher education institutions in university governance showed that the more participants or organizational structures, the lower the performance would be.

### 5.3. The Influence of GUG on Sustainability Performance

Hypothesis 3 posited that GUG influenced sustainability performance. The measurement of sustainability performance used three signs namely environment, economy, and social. Regarding the environment, it assessed the impact of operations on the environment and biodiversity (SUS1), as well as the investment of funds for environmental protection (ISO 14001) (SUS2). Furthermore, in the economic territory, it included identifying risks and opportunities related to economic changes (SUS3), ensuring the recruitment of workers and management associated with applicable procedures (SUS4), and assessing the influence of infrastructure development and investment on public interests (SUS5). Meanwhile, the social aspect examined how SU-PSA addressed complaints, grievances, and the presence of complaint mechanisms regularly and achieved set aims (SUS6). It also included training on policies and procedures related to corruption (SUS7), legal actions against unfair operating practices (SUS8), responses to incidents related to corruption (SUS9), provision of information related to academic products following applicable procedures (SUS10), development and implementation of training programs in the workplace (SUS11), and providing service and responding to community service delivery (SUS12). According to Figure 5, the economic element of SU-PSA most dominantly shaped sustainability performance among the three indicators. Several results supported these results, including those of reported that the implementation of Good Corporate Governance through top management or leadership could maximize its role in improving the sustainability performance of the company. In the study titled *The Impact of Corporate Governance on Sustainability Performance*, explored the relationship between corporate governance and sustainability performance using extensive Bloomberg Environmental, Social, and Governance (ESG) data.

The results showed that better implementation of corporate governance led to a higher sustainability result and the adoption and compliance with sustainability policies.

#### 5.4. The Influence of Financial and Service Performance on Sustainability Performance

Hypotheses 4 and 5 asserted that financial performance and service performance influenced sustainability performance, supported by the understanding. There exists a connection between financial performance and financial sustainability. Furthermore, university with poor financial sustainability predictions could not achieve financial independence without government support. The results showed that financial sustainability and accountability were interdependent. To secure sufficient funding, management had to furnish the necessary financial information for accountability and legitimize its activities. The study showed that the sampled universities had bleak financial sustainability forecasts, rendering colleges unable to sustain one or another independently without government financial support. Similarly, service performance impacted sustainability performance, as shown by PSA Key Performance Indicator (KPI), which included 20 performance pointers reflecting non-financial aspects related to service. These included Students and Graduates, Academic, Organizational Reputation, Human Resources, Research, and Opinion on PSA Financial Statements (Ministerial Decree Number 754/P/2020 in 2020 and 3/M/2021 in 2021 concerning KPI for State Universities and Higher Education Service Institutions in the Ministry of Education, Culture, Research and Technology). Stakeholders such as students, graduates, academics, and others contributed to sustainability performance of SU-PSA.

#### 5.5. The Influence of GUG on LS

According to Hypothesis 6, GUG influenced LS, indicating that better GUG implementation led to improved LS. Accountable and independent GUG implementation shaped a positive LS. In essence, this result showed that GUG implementation influenced the adoption of transformational or transactional LS at SU-PSA, in line with stated that effective governance was strengthened by strong leadership, showing a positive impact on good governance. The level of managerial or leadership ability played a crucial role in good governance, signifying the competence and readiness of technical personnel to fulfill job descriptions in each section in the context of implementing GUG.

#### 5.6. The Influence of LS on University Performance (Financial, Service, and Sustainability Performances)

Based on Hypothesis 7, there was a connection between LS and financial performance. This implied that when LS improved, the financial performance of SU-PSA also tended to improve. The effectiveness of university in meeting short-term debt obligations, organizing educational services (business operations), generating a budget surplus above a specific period, and efficiently using assets to generate income. LS variable comprised two styles, namely transformational and transactional leadership. In addition, both styles used a balanced influence, meaning that the application to SU-PSA supported the financial performance of the university. This result was associated with (Semuel et al., 2017), stating that effective leadership positively influenced financial performance, as measured by sales growth, net profit after tax, return on sales, and profitability. In a corporate context, a well-executed leadership role by a CEO or executive motivated workers to be actively included in the work. Motivation improved employee job satisfaction, thereby leading to improved work and company performance. The results reinforced the conclusions of previous analyses, specifically observed a positive and significant relationship between the Leadership Trilogy style and financial performance.

Hypothesis 8 implied that LS had a positive and significant influence on service performance, including the Main Performance Indicators (IKU) of SU-PSA. This implied that when LS improved, service performance also became better. Furthermore, LS variable was predominantly characterized by transactional leadership in comparison to transformational leadership. This discovery showed that achieving the SU IKU aims of PSA, negotiated with the government, specifically the Ministry of Education and Culture and the Ministry of Finance, included a transactional approach in leadership. The finding was consistent with the results. Established that the relationship between LS and organizational performance was mediated by worker-organizational commitment. Both transformational and transactional leadership significantly and positively influenced organizational performance. Effective leadership practices in a company, represented by two main indicators (human resource development and emphasis on ethical practices), facilitated the allocation of appropriate resources and ethical practices to provide optimal customer service in pursuit of customer satisfaction (Semuel et al., 2017). However, this was related to the implications of stewardship theory on the university, where the steward (university management) struggled to benefit the owners (the public and the government) by delivering the best

quality service. While several previous studies might have differed in opinions, recommending that applying transformational leadership at various levels (university, faculty, or department) yielded superior results compared to transactional leadership. Transformational leadership prompted more fundamental changes, such as expanding the values of subordinates, aims, and needs. Leadership, competence, and motivation positively influenced company performance.

Hypothesis 9 contended that the result showing LS significantly influenced sustainability performance associated with the conclusions, where leadership variables served as moderating factors. Moreover, this study recommended that environmental, economic, and social sustainability practices were connected to sustainability performance. Leadership competencies reinforced the relationship between environmental sustainability practices and sustainability performance. In addition, transformational leadership influenced others and could be practiced daily to produce the expected changes in the university.

### **5.7. The Role of LS as a Mediating Variable in the Relationship Between GUG Implementation and Financial, Service, and Sustainability Performance**

Indirect influences occurred when an observed exogenous variable obstructed another endogenous variable (mediating variable). The results of testing hypotheses 10, 11, and 12 showed an indirect relationship between GUG and the performance of SU-PSA, with LS acting as the mediating variable. Hypothesis 10 proposed that GUG affected financial performance through LS. This showed that when the implementation of GUG in SU-PSA was improved, financial performance through LS became better. Implementation of GUG on financial performance through partial mediation with LS. GUG is able to influence financial performance directly and indirectly through LS. Implementation of GUG on service performance through partial mediation with LS. GUG is able to influence financial performance directly and indirectly through LS. GUG implementation of sustainability performance through partial mediation with LS. GUG is able to influence financial performance directly and indirectly through LS.

The outcome signified the crucial role played by the leader, particularly the Rector, in the SU-PSA context. The Rector actively contributed to the aim of the institution by emphasizing and prioritizing the aims, which help to promote the accomplishment of KPI objectives through diligent monitoring of staff achievements. The results were consistent, stating that transformational leaders could inspire and empower the subordinates. Therefore, this study proposed that achieving KPI aims served as a control mechanism in the interaction between the leader (rector) and the faculty and staff of SU-PSA. Transformational leadership shaped the moral values of followers, increased awareness of ethical issues, and mobilized energy and resources for organizational reform and improvement. Transactional leadership motivated followers based on individual interests and mutual benefits. SU-PSA acknowledged that promoting visionary leadership and inspiring its followers could improve the correlation between GUG implementation and financial performance, service delivery, and sustainability performance based on these perceptions. The results showed the essential role of the Rector in creating a distinction between the current situation and the future state, particularly concerning the performance of PT. The perception of leadership, in its association with the aims of members, predicted, explained, and influenced worker performance.

## **6. MANAGERIAL IMPLICATIONS**

The findings of this study highlight several managerial implications for university leaders and policymakers. First, adopting Entrepreneurial Good University Governance (EGUG) can significantly improve service, financial, and sustainability performance within state universities. University leaders should focus on enhancing transparency, accountability, and leadership style to drive better institutional outcomes. Moreover, fostering entrepreneurial governance can strengthen financial independence and foster collaborations with industries, thereby improving universities' capacity to adapt to changing educational demands. The importance of leadership as a mediating factor suggests that university managers must prioritize leadership development and training, ensuring that leaders are equipped to integrate entrepreneurial strategies within academic and administrative practices. By doing so, universities can create a more dynamic, innovation-driven environment that aligns with the growing demand for financial sustainability and societal impact.

## 7. CONCLUSION

The implementation of EGUG had a direct and positive influence on service, financial, and sustainability performance. Additionally, both service and financial performance individually contributed positively to sustainability performance. Leadership style directly affected service, financial, and sustainability performance positively. The choice between transformational or transactional LS depended on the context of state universities. When the aim was to improve service and financial performance, transactional leadership was applied. Meanwhile, when the aim was to improve sustainability performance, transformational leadership was implemented. The influence of EGUG implementation on service, financial, and sustainability performance was mediated through LS. However, the impact of EGUG was most pronounced on financial performance. Financial performance appeared as the most significantly influenced aspect of SU-PSA by EGUG implementation, making it the most effective performance measure for evaluating EGUG implementation in SU-PSA in Indonesia.

The implementation of EGUG was associated with the concepts of agency and stewardship theory, indicating the necessity of corporate governance in ensuring the interests of stakeholders and long-term sustainability. The adoption of EGUG necessitated university management to support the institution with its primary objectives and functions, with a focus on improving total performance, particularly in financial terms.

This study positively contributed to achieving sustainability performance by effectively implementing EGUG and LS. Additionally, the analysis offered a comprehensive empirical measurement of performance (service, financial, and sustainability performance), which could apply to other universities. The limitation of this research is that it only involves SU-PSA under the Ministry of Education, Culture, Research and Technology if it involved all SU-PSA, the differences in management characteristics in the education sector in all PSA would provide varying research results. In this situation, there were several recommendations for further survey. The review did not compare performance of SU before and after becoming SU-PSA. The investigation did not compare performance of SU-PSA and non-SU-PSA institutions.

## 8. DECLARATIONS

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### 8.2. Author Contributions

Conceptualization: RD; Methodology: IS; Software: YS; Validation: HS; Formal Analysis: AI; Investigation: RD; Resources: RD and AI; Data Curation: YS; Writing Original Draft Preparation: YS; Writing Review and Editing: RD; Visualization: YS; All authors, RD, AI, HS, and IS, have read and agreed to the published version of the manuscript.

### 8.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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### 8.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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