

Drivers of Sustainability Performance in Indonesian Private Higher Education

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Abstract: Higher education institutions play a strategic role in promoting sustainable development through education, research, community engagement, and institutional governance. However, the successful implementation of sustainability initiatives depends not only on environmental policies but also on internal organizational capabilities that foster sustainability-oriented values and practices among academic communities. The basic aim of this study is to investigate the influence of *Green Internal Marketing Orientation* (GIMO), *Green Authentic Leadership* (GAL), and *Green Organizational Culture* (GOC) on the sustainability performance of Indonesian private higher education institutions. A quantitative *cross-sectional* survey was conducted involving 540 lecturers, administrative staff, and students from 90 private universities participating in the *UI GreenMetric World University Rankings 2025*, selected using *proportionate stratified random sampling*. Data were analysed using *Covariance-Based Structural Equation Modelling* (CB-SEM) with LISREL 10.2. The findings indicate that GIMO, GAL, and GOC each exert positive and significant effects on sustainability performance, while GOC partially mediates the relationships between GIMO and sustainability performance as well as between GAL and sustainability performance. This study extends the application of the *Natural Resource-Based View* within the higher education context and provides practical implications for university leaders seeking to promote sustainable governance and *Education for Sustainable Development* (ESD).

Keywords: Green Internal Marketing Orientation, Green Authentic Leadership, Green Organizational Culture, Sustainability Performance, Private Higher Education, Education for Sustainable Development.

1. Introduction

Higher education institutions play important role for the advancement of sustainable development through integration economic sustainability, social sustainability, and economic sustainability into institutional governance, community engagement, research, and education (Cembranel et al., 2024). As centres of professional development, and knowledge creation, it is expected from universities that they generate scientific knowledge but also for the education of students who possess ethical responsibility, values, and competencies required to address complex sustainable challenges (Drissi,

Meftah & Skalli, 2025). This expanded mission is important as per the SDGs mentioned by UN including climate action, quality education, and sustainable development goals, that recognize education as key driver of sustainable societal transformation. As a result, sustainability in higher education should not only be perceived as campus operations, and environmental management but as a student learning experiences, research activities, teaching practices, and curriculum development (Abo-Khalil, 2024).

The concept of education for sustainable development (ESD) plays vital role in providing framework that is important for the integration of sustainability into higher education. Researcher mentioned that ESD plays important role in enabling students to acquire values, attitudes, skills, and knowledge necessary for promotion of sustainable development through responsible decision making, collaboration, systems thinking, and critical thinking (Araneo, 2024). Therefore, universities should have responsibility to integrate sustainability principles in all processes of education including student engagement, faculty professional development, academic leadership, innovative pedagogical approaches and curriculum development. Sustainable universities are not only evaluated through their environmental performance but also through the cultivation of sustainability competencies that allow students to contribute actively regarding sustainable societies (Barnett-Itzhaki et al., 2025).

The universities are encouraged at the global level with purpose to adopt initiatives of comprehensive sustainability which combine environmental responsibility towards educational innovation because of growing importance of sustainability. Studies showed that universities that achieve high level of sustainability integrate green campus management with community partnerships, interdisciplinary research, and sustainability-oriented teaching. This integration develops learning environment where sustainability becomes a key component of institutional culture rather than sole programme related to environment (Leal Filho et al., 2024). As a result, improvement in sustainability performance need universities to develop internal capabilities that provide strength to educational quality and organizational effectiveness.

In context of Indonesia, sustainability implementation in higher education has gained attention via different university rankings at the global level (Nurulsari, Sumintono & Hariri, 2026). These rankings mostly assess universities in six different dimensions including education and research, transportation, water management, waste management, energy and climate change, and infrastructure and settings (Jusuf et al., 2020). These factors show that sustainability performance goes beyond operational efficiency with purpose to achieve educational activities that encourage sustainability learning and environmental awareness. Although, number of universities are increasing that participate in adoption of sustainable practices, but private universities of Indonesia remain relatively limited in this aspect. This situation shows that universities are facing a number of challenges for the integration of sustainability into educational activities, academic activities, and institutional governance (Alberti et al., 2025).

The successful implementation of sustainability at the level of universities is dependent on multiple factors including physical infrastructure and environmental policies. It is also dependent on capabilities of organization that encourages academicians to embrace sustainability-based behaviors and values. Universities need organizational environments that provide support to students, staff, and lecturers in order to implement sustainability across research, teaching and community service (Ankareddy et al., 2025). These internal factors are vital because

educational transformation depend on institutional practices, organizational culture, and leadership that reinforce sustainability consistently throughout the university. Likewise, sustainability must be considered as commitment at the institutional level that shapes organizational performance and educational quality.

Green internal marketing orientation is one of the factors that impacts organizational capability. Green internal marketing orientation considers employees as important internal stakeholders whose environmental commitment and awareness are strengthened through green reward systems, green skill development, and green internal communication (Elshaer, 2024). Rather than relying only on environmental management, green internal marketing orientation develops organizational conditions that encourages university staff and lecturers to incorporate sustainability into student support activities, interdisciplinary collaboration, teaching practice, and curriculum design. Past studies have shown that green internal market orientation is important for employee pro-environmental behavior and organizational sustainability performance. But there are limited number of empirical studies discussing its application in context of higher education sector (Mahesh, Aithal & Sharma, 2024).

Likewise, leadership represents an important factor of sustainability transformation within higher education institutions. Authentic leaders show internalized morale values, balanced information processing, relational transparency, and self-awareness that help organizational to achieve goals related to sustainability (Leal Filho et al., 2020). Within universities, there is influence of green authentic leaders on the decision making of the institutions but also educational practices by encouraging curriculum innovation, fostering students to participate in sustainability initiatives, promote interdisciplinary collaboration, supporting faculty professional development. Green authentic leadership contributes for the development of educational environment where sustainability is integrated within everyday learning activities and teaching (Barnett-Itzhaki et al., 2025).

Another key factor that impacts organizational performance in terms of sustainability is green organizational culture. Employees are encouraged to participate in green initiatives when they see other employees and top management taking environmental initiatives. When top management is making environmentally friendly policies (Alkandi, 2025). Therefore, this research assessed the effect of green organizational culture, green authentic leadership, and green internal marketing orientation on sustainability performance in context of private universities of Indonesia.

2. Literature Review

2.1. Sustainability Performance

In literature, sustainability performance is referred as ability of the organization to achieve balanced social, environmental, and economic outcomes while developing long term value for stakeholders (Wijaya et al., 2025). Irrespective of relying only on the financial performance, a holistic perspective is adopted by sustainability performance through integration of organizational effectiveness, social responsibility, and environmental stewardship into strategic decision making. Studies further emphasized that sustainability performance must be assessed as one of the systematic capabilities that develop positive effect on multiple aspects including environment,

society, and organization. From this perspective, sustainable organizations plays key role for the well-being of society through stakeholder engagement, efficient resource utilization and responsible governance (Adomako et al., 2026).

The importance of sustainability performance is extended far beyond the corporate sector including higher educational institutions, where it is expected from universities that they will contribute towards the sustainable development by using their educational mission. Universities are not evaluated only through environmental initiatives or operational efficiency but also through their ability to integrate sustainability into institutional governance, community engagement, research, and teaching (Cembranel et al., 2024). As a result, sustainability performance within higher education institutes is based on educational innovation, sustainability education, and curriculum development that equip students with required competencies to address societal challenges and complex environmental challenges. Universities that achieve high sustainability performance show Pedagogical innovation by encouraging experiential educational practices, promoting interdisciplinary learning, and embedding sustainability principles across academic programmes. Additionally, higher education institutions that are sustainability oriented mostly invest in professional development of faculty members strengthening capacity of educator to deliver content of sustainability in effective way while cultivating students who possess sustainability competencies, ethical responsibilities, and critical thinking (Leal Filho et al., 2025). These efforts of institutes enhance the learning outcomes of students in developing responsible citizenship, collaborative problem-solving skills, and environmental awareness. Moreover, sustainability performance provides information regarding educational policy to the universities by encouraging universities to align strategic planning, quality assurance mechanisms, and governance structure with sustainable development objectives. Because of this comprehensive approach, sustainability performance is considered as important indicator of the effectiveness of higher education institute (Agboola, Ilke & Mislat Alsharif, 2026).

2.2. Green Organizational Culture and Sustainability Performance

Researchers defined organizational culture as shared procedure of acting, thinking, and being in a coordinated and collective people with reciprocal expectations (Xanthopoulou, Sahinidis & Bakaki, 2022). Scholars described a pro-environmental culture of organization as assumption that is learnt by different group members while adapting to the impact of activities of human on environment. Green organizational culture is the value, belief, and behavior of the organizational member in terms of natural environment (Sari Putri & Zainal Mustafa, 2022). Green organizational culture plays key role in order to enhance sustainability performance in context of higher education institutions by integrating principles of sustainability into decision making of institution, academic practices, and organizational values. Strong green culture promotes educational innovation through adoption of environmentally responsible institutional practices, interdisciplinary learning, and sustainable teaching approaches. It also provides support in curriculum development through integration of sustainability education in all academic programs enabling students to develop values, skills, and knowledge that is needed to address societal and environmental challenges (Al-Alawneh, Othman & Zaid, 2023).

Moreover, green organizational culture promotes regular faculty development and teacher professional development, equipping educators with innovative pedagogical strategies that improves quality of teaching and develop sustainability-based classroom learning. These initiatives improve student learning outcomes, encourage experiential learning, and student engagement by developing responsible citizenship, environmental awareness, and critical thinking (Javed et al., 2026). At the level of higher education institutions, green culture aligns with educational policy by encouraging academic planning, resource management, and sustainability focused governance. Such alignment provide strength to institutional effectiveness while preparing graduates with graduate competencies and sustainability-oriented knowledge that is needed in modern workplace (Fatoki, 2021). As sustainability is vital in context of higher education, therefore universities that develop green organizational culture are in better position to achieve sustainability performance through improved long term institutional resilience, social responsibility, stakeholder satisfaction, and educational policy (Zafar & Bano, 2025).

2.3. Green Internal Marketing Orientation; Relationship with Green Organizational Culture and Sustainability Performance

Green internal market orientation in literature is referred as organizational strategic and deliberate allegiance to fulfil and comprehend certain preferences of environment and requirements of the customer base (Chen et al., 2024). Studies have defined green marketing as the strategic alignment of organizational marketing efforts with environmentally friendly practices and sustainability practices. This marker driven and proactive approach ensures that increasing demand of consumers regarding sustainable products are meet and environmental performance is ensured. Green market orientation mostly creates distinctive products that are environmentally friendly, creating point of difference in the marketplace and develop competitive advantage. A successful green market orientation improves ability of the organization to improve sustainable business opportunities and enhance its green competitive positioning (Zhang, 2024).

Green internal market orientation is discussed as internal strategic approach that has the ability to integrate environmental values in different educational institutions by promoting employee engagement, training, and sustainability focused communication. Within the context of higher education, green international market orientation provide encouragement to educational innovation by integration of environmental principles into institutional practices, teaching quality, and curriculum development (Nayab et al., 2024). Through professional development of faculty and teachers on regular basis, faculty is able to gain necessary skills and knowledge for the implementation of sustainability education in classroom learning in effective manner. Faculty members are enabled to align teaching strategies with environmental objectives, developing an environment that promote environmental awareness among students. Moreover, green international market orientation provide support to implementation and formulation of educational policy that has the ability to reinforce green values across institutional operations and academic programmes. As these programmes are integrated within the academic culture, and organizational curriculum, they contribute to establishment of strong green organizational culture that is characterised by sustainable decision

making, shared environmental collaboration and values (Younis et al., 2025). This kind of culture encourage innovative instructional approaches, has important pedagogical implications that enhance student engagement, develop environmentally responsible graduate competencies, and improve student learning outcomes.

Consistent with past studies, green internal market orientation plays the role of internal capability that has the capacity to transform different environmental initiatives into enduring organizational values. As a result, different educational institutes that implement green international marketing culture are likely to develop a green organizational culture that can support long term development of student capability to address global environmental challenges, community engagement, research, and sustainability-oriented teaching. Green internal market orientation improves sustainability performance through integration of environmental values into daily academic practices, employment development, and institutional strategies (Ali, 2025). Through sustainability education, curriculum development, and educational innovation, green internal market orientation helps faculty members with motivation and knowledge to improve teaching quality and to integrate sustainable practices into classroom learning. Regular development of faculty helps in development of educator capacity to implement environmentally friendly syllabus with policy of universities. As a result, students become aware of sustainability initiatives that later results in improved student engagement, enhanced graduate competencies, and stronger student learning outcomes (El Tayib & Alhiti, 2025).

2.4. Green Authentic Leadership; Relationship with Green Organizational Culture and Sustainability Performance

Green leadership style focuses on application of environmental protection and sustainability principles in the process of organizational management and decision making (Zhong et al., 2025). A green leader encourages environmentally friendly practices such as usage of green technology, waste reduction, and energy efficiency. They mostly inspire employees for the adoption of environmentally friendly behavior through different incentives, trainings and examples. Green authentic leadership is one of the leadership approaches that combines authentic integrity and transparency with a strong commitment towards environmental sustainability. Its basic pillars include eco-centric modelling, relational transparency, and self-awareness. Leaders who embrace green authentic leadership mostly show dedication towards environmental safety, resource preservation and sustainability (Yasin, 2026). Green authentic leadership often have significant effect environmental consciousness by enhancing ethical congruence, transparency, and trust within the context of sustainability. Authentic leaders mostly show environmental commitments, consistently practice ethical behaviors, and transparently communicate environmental values (Feng & Tipayatikumporn, 2025).

Green leadership has key role to play in developing green organizational culture within the context of universities by integration of environmental values into academic practices, governance, and institutional vision. Sustainability is also promoted through integration of environmental principles into university activities, research, and curriculum development (Altassan, 2025). Through effective teacher professional development and educational policies, faculty members are able to improve their capacity to deliver sustainability education by using different approaches of responsible teaching. These

different initiatives have key educational implications, that encourages improvement of teaching quality integration of sustainability into classroom learning (Meesuk, Wongruga & Wangkaewhiran, 2021). Values of sustainability become deeply integrated within the higher education institution as green authentic leaders regularly show environmentally responsible behavior, and ethical behavior. As a result, green environmental culture is fostered that is characterised by continuous environmental improvement, shared responsibility, and trust. This culture enhances greater engagement of students, develops graduate competencies, and student learning outcomes related to responsible decision making, ethical leadership, and sustainability. Green authentic leaders behave like credible role models having genuine commitment regarding environmental stewardship inspires students, staff, faculty to adopt sustainable behaviors. Consequently, green authentic leaders provide strength to green organizational culture, advancing development of graduates, educational excellence, and institutional sustainability, and green organizational culture equipped to address societal challenges and environmental challenges through innovative and responsible practices (Uroić et al., 2025).

Green authentic leadership improves sustainability performance by improving environmental responsibility, ethical decision making, and transparency. Authentic leaders play key role to promote educational innovation by integrating sustainability education and supporting curriculum development into institutional and teaching practices (Srivastava et al., 2020). Through sustainability oriented educational policy, and teacher professional development, faculty members adopt environmentally responsible pedagogies and improve teaching quality with meaningful pedagogical implications. These initiatives develop sustainability-oriented graduate competencies, improve students learning outcomes, and strengthen student engagement (Dastgir, Zaman & Qayyum, 2024). Therefore, green authentic leadership enables universities to achieve sustainability performance by enhancing long term institutional resilience, educational excellence, social responsibility and environmental responsibility.

On the basis of above literature, following hypothesis are developed

H1: Green Internal Marketing Orientation has a positive effect on Sustainability Performance.

H2: Green Authentic Leadership has a positive effect on Sustainability Performance.

H3: Green Internal Marketing Orientation has a positive effect on Green Organizational Culture.

H4: Green Authentic Leadership has a positive effect on Green Organizational Culture.

H5: Green Organizational Culture has a positive effect on Sustainability Performance.

H6: Green Organizational Culture mediates between Green Internal Marketing Orientation and Sustainability Performance.

H7: Green Organizational Culture mediates between Green Authentic Leadership and Sustainability Performance.

3. Method

3.1. Methodological Design

This study adopted a quantitative research design employing a covariance-based structural equation modeling (CB-SEM) approach to examine the relationships among

Green Internal Marketing Orientation (GIMO), Green Authentic Leadership (GAL), Green Organizational Culture (GOC), and Sustainability Performance of Private Higher Education Institutions (SPHEIs). The study was designed to test a theoretically derived model grounded in the Natural Resource-Based View (NRBV) and previous empirical research on sustainability management in higher education. A cross-sectional survey design was employed, whereby data were collected from respondents at a single point in time. This design is appropriate for examining causal relationships among latent constructs and validating theoretical models using empirical evidence (Bougie & Sekaran, 2025). The conceptual model was developed through an extensive review of previous literature concerning internal green marketing, authentic leadership, organizational culture, and sustainability performance. Data were collected using a structured questionnaire adapted from validated measurement instruments. Before the main survey, the questionnaire was reviewed by academic experts and pilot-tested to ensure content validity, clarity, and measurement reliability.

3.3. Participants

The study involved respondents from 90 Indonesian private higher education institutions participating in the UI Green Metric World University Rankings 2025. These institutions were selected because they have implemented sustainability initiatives covering environmental management, academic development, governance, operations, and community engagement. The unit of analysis was the individual rather than the institution. Consequently, respondents consisted of academic staff, administrative staff, and students who possessed sufficient knowledge or experience regarding sustainability practices within their institutions. A purposive sampling technique was employed to ensure that respondents were familiar with sustainability-related activities. Following the recommendation of Sarstedt et al. (2022), the minimum sample size was determined based on ten observations per measurement indicator. Since the proposed model contained 54 observed indicators, a minimum sample of 540 respondents was established. The final sample consisted of 180 academic staff, 180 administrative staff, and 180 students, providing balanced representation across stakeholder groups. The response rate of the study was 68.29%.

Among these respondents 58.21% of respondents were male and remaining were females. Moreover, 32.17% respondents were the age between 18 to 30 years, 22.01% respondents were the age between 31 to 40 years, 20.65% respondents were the age between 40 to 50 years, and remaining had the age of more than 50 years. Additionally, 58.09% respondents were married and 41.91% mentioned that they were not married. In the end, in order to treat missing data of the responses, SPSS was used. Specifically, EM test was used under SPSS to treat the missing values as total missing values were less than 5%.

3.4. Research Procedures

The research was conducted in four consecutive stages.

3.4.1. Instrument Development

Measurement items were adapted from previously validated scales reported in

international journals. Minor wording modifications were introduced to ensure their suitability for the Indonesian higher education context while preserving the conceptual meaning of each construct.

3.4.2. Pilot Testing

Prior to the main survey, the questionnaire underwent expert evaluation and pilot testing to assess content validity, readability, and internal consistency. Feedback obtained during this stage was incorporated into the final version of the questionnaire.

3.4.3. Data Collection

Data were collected over approximately six months using both online and offline survey administration. Online questionnaires were distributed through Google Forms, whereas printed questionnaires were administered directly to respondents at participating institutions. Only respondents meeting the predefined inclusion criteria were retained for analysis.

3.4.4. Data Screening

After data collection, all responses were screened for completeness, missing values, response consistency, multivariate normality, and outliers. Questionnaires failing to satisfy the screening criteria were excluded prior to structural equation modeling. Furthermore, for this study, no ethical approval was required because it is based on questionnaire in which adult participants were involved. Participation of the respondents was on the voluntarily basis and respondents gave consent before recording their response.

3.5. Data Treatment

Data analysis was performed using LISREL 10.20 with the Maximum Likelihood Estimation (MLE) procedure. Following the recommendations of Hair and Alamer (2022), the analysis was conducted in two sequential stages. First, the measurement model was evaluated using Confirmatory Factor Analysis (CFA). Convergent validity was assessed using standardized factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR), while discriminant validity was examined using the Fornell-Larcker criterion. Second, the structural model was estimated to test the proposed hypotheses. Model adequacy was evaluated using multiple goodness-of-fit indices, including Chi-square (χ^2), RMSEA, SRMR, CFI, TLI, GFI, AGFI, and NFI. Direct effects were assessed through standardized path coefficients and *t*-values, whereas indirect effects were estimated to examine the mediating role of Green Organizational Culture. Statistical significance was determined at the 5% level ($p < 0.05$).

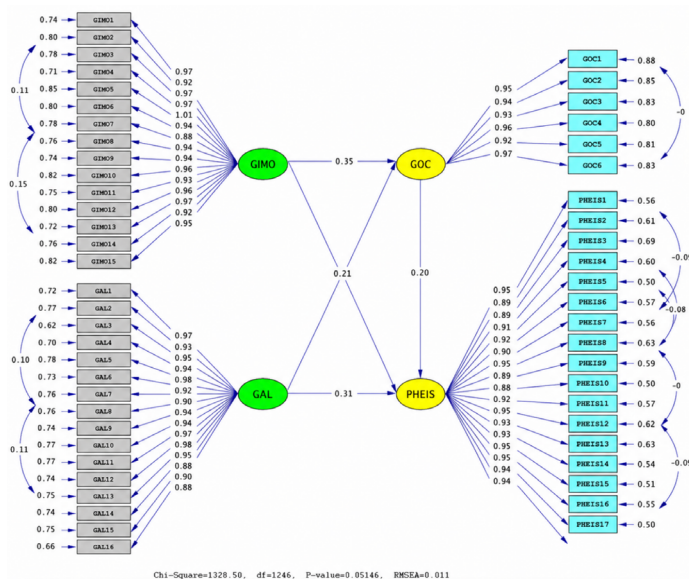
4. Result

4.1. Measurement Model

The measurement model demonstrated satisfactory psychometric properties. All

54 measurement indicators achieved the recommended threshold for convergent validity, with standardized factor loadings ranging from 0.88 to 1.01 for *Green Internal Marketing Orientation* (GIMO), 0.88 to 0.98 for *Green Authentic Leadership* (GAL), 0.92 to 0.97 for *Green Organizational Culture* (GOC), and 0.88 to 0.95 for *Private Higher Education Sustainability Performance* (PHEIS). All factor loadings exceeded the recommended value of 0.50 and were statistically significant ($p < 0.001$). The overall measurement model also demonstrated good reliability and convergent validity. Composite Reliability (CR) values exceeded 0.70, Cronbach's Alpha values were above 0.70, and the Average Variance Extracted (AVE) for every construct was greater than 0.50, confirming satisfactory internal consistency. This study also examined the values of VIF that is 2.14, 2.27, 2.35, and 2.16 for GIMO, GAL, GOC and PHEIS respectively which fall in range as recommended by Kock (2015). Later, the values of common latent factor (CLF) were analysed through incorporation of common method factor in which all observed indicators were loaded. The difference among corresponding factor loading of all variables were less than 0.20 showing that common method variance does not influence measurement model. Later, study also used marker variable technique for further assessment of common method bias. The structural path coefficients show only trivial changes after controlling for marker variable. Furthermore, none of the conclusions were changed. These findings provide evidence that CMV was not a concern. Moreover, multiple procedural remedies were used with purpose to minimize chances of common method bias. Participants of the study were asserted that their responses will remain confidential and anonymous. The participation in the study was volunteer and there were no wrong or right answers to the questions. Therefore, respondents were asked to give answers honestly. The questionnaire used measurement scales that were previously validated, unambiguous wording and simple wording was used by the researcher.

Figure 1: Final Structural Model (Standardized Solution).



Additionally, discriminant validity was supported because the square root of each construct's *AVE* exceeded the correlations among latent variables. Furthermore, Harman's Single-Factor Test indicated that no dominant factor accounted for the majority of the variance, suggesting that common method bias was not a serious concern.

4.2. Structural Model

The structural model exhibited an excellent goodness-of-fit. The model produced a Chi-square value of 1328.50 with 1246 degrees of freedom, resulting in a Chi-square probability of 0.05146, which exceeded the recommended threshold of 0.05. The Root Mean Square Error of Approximation (*RMSEA*) was 0.011, indicating an excellent model fit. Overall, these indices suggest that the proposed structural model adequately represents the empirical data.

Table 1 presents the standardized structural coefficients.

Table 1: Structural Model Results.

Hypothesis	Structural Path	β	Decision
H1	<i>GIMO</i> → <i>PHEIS</i>	0.21	Supported
H2	<i>GAL</i> → <i>PHEIS</i>	0.31	Supported
H3	<i>GOC</i> → <i>PHEIS</i>	0.20	Supported
H4	<i>GIMO</i> → <i>GOC</i>	0.35	Supported
H5	<i>GAL</i> → <i>GOC</i>	0.21	Supported

The findings indicate that all proposed direct relationships were positive and statistically significant. *Green Internal Marketing Orientation (GIMO)* positively influenced *Private Higher Education Sustainability Performance (PHEIS)* with a standardized coefficient of $\beta = 0.21$, indicating that stronger internal green marketing practices contribute directly to higher sustainability performance. This finding suggests that internal environmental communication, employee development, and organizational support encourage sustainable operational practices within private higher education institutions. *Green Authentic Leadership (GAL)* showed the strongest direct effect on *PHEIS* ($\beta = 0.31$), indicating that leaders who consistently demonstrate environmental values, transparency, ethical decision-making, and self-awareness substantially improve institutional sustainability performance. This result highlights leadership as the most influential managerial resource in promoting sustainability. *Green Organizational Culture (GOC)* also had a positive direct influence on *PHEIS* ($\beta = 0.20$).

Institutions characterized by shared environmental values, sustainability-oriented norms, and organizational commitment were more likely to achieve higher sustainability performance. Regarding the antecedents of organizational culture, *GIMO* significantly influenced *GOC* ($\beta = 0.35$), indicating that green internal marketing practices strengthen sustainability-oriented organizational values and behaviours. Likewise, *GAL* positively influenced *GOC* ($\beta = 0.21$), demonstrating that authentic green leadership contributes to the development of an organizational culture that supports environmental sustainability. Overall, the structural model confirms that sustainability performance in Indonesian private higher education institutions is jointly explained by internal green marketing orientation, green authentic leadership, and green organizational culture. Among these predictors, *Green Authentic Leadership* exhibited the largest direct effect on

sustainability performance, whereas *Green Internal Marketing Orientation* exerted the strongest influence on the development of *Green Organizational Culture*.

4.3. Mediation Analysis

The mediation analysis examined the indirect effects of *Green Internal Marketing Orientation* (GIMO) and *Green Authentic Leadership* (GAL) on *Private Higher Education Sustainability Performance* (PHEIS) through *Green Organizational Culture* (GOC).

Table 2: Indirect Effects.

Hypothesis	Indirect Path	Result
H6	<i>GIMO</i> → <i>GOC</i> → <i>PHEIS</i>	Supported
H7	<i>GAL</i> → <i>GOC</i> → <i>PHEIS</i>	Supported

The results indicate that *Green Organizational Culture* significantly mediated the relationships between *GIMO* and *PHEIS*, as well as between *GAL* and *PHEIS*. Since both direct and indirect relationships remained significant, the mediation can be classified as partial mediation. These findings suggest that internal green marketing and authentic green leadership improve sustainability performance not only through their direct influence but also indirectly by strengthening a sustainability-oriented organizational culture.

5. Discussion

The results of the study showed that green organizational culture, green authentic leadership, and green internal marketing orientation are the predictors of sustainability performance from the perspective of higher education sector of Indonesia. The results also show that green authentication leadership is the strongest predictor of sustainable performance. Whereas, green organization culture also works as mediator between GAL, GIMO and sustainability performance. Within the context of higher education sector, value is generated by these organizations not only by using sustainability performance of institutes, but educational innovation is also one of key factor of educational performance. Organizational culture, internal marketing, and sustainability-oriented leadership create conditions that encourage higher education institutes to improve academic programmes on continuous basis, integrate sustainability into learning and teaching, and redesign educational practices. In other words, sustainability should be considered as educational mission of the universities rather than it is treated as governance or administrative initiative.

The positive significant role of GIMO assures that sustainability initiatives play key role to improve performance of universities when environmental values are embedded into organizational support systems, employee development, and internal communication. These results are in-line with the findings of past studies (Zhang, 2024) showing that internal marketing helps in understanding employees. It also plays key role to accept the organizational sustainability objectives through alignment of institutional values with individual behavior. The contribution of GIMO is smaller as compared to GAL shows that internal marketing is not sufficient to reinforce green practices. GIMO can provide more significant results unless they are supported by

leadership commitment. Environmental training and internal communication have the possibility to enhance awareness, but the outcomes of sustainability are dependent on everyday university routines integration. From the perspective of educational institutes, curriculum development is also influenced by internal marketing through encouragement of academic staff to embed principles of sustainability within objectives of courses, assessment strategies, learning activities and instructional content. Faculty members who support and understand sustainability goals are willing to develop sustainability and interdisciplinary oriented curricula that plays important role to prepare graduates who can address societal and environmental challenges. Therefore, these findings demonstrate that internal marketing has direct contribution towards sustainability of education through alignment of priorities of universities with educational practices.

Findings also identify green authentic leadership as one of vital predictor of sustainability performance (Dastgir et al., 2024). Results also reinforce the arguments that authentic leaders play important role in shaping behaviour of organization through self-awareness, balanced judgement, ethical decision making, and transparency. Leaders who demonstrate responsibility towards environment on the regular basis are able to develop trust among other staff members. They can successfully create behavioral norms that encourage participation on volunteer basis in the initiatives of sustainability. Participation of such leadership is important in the universities where organizational change is more dependent on formal authority and more on shared commitment among community of academia. As a result, authentic leadership plays important administrative role to strengthen sustainability of institution. Likewise, authentic leadership improves professional development of faculty members by developing opportunities for faculty members so they can acquire knowledge related to sustainable development, redesign different approaches of institution and take part in collaborative professional learning. Such authentic leadership encourage educators in adopting different kind of pedagogical practices including community engaged learning, interdisciplinary teaching, project based learning and experimental learning through which concepts of sustainability become meaningful for students. These implications of pedagogy suggest that authentic leadership has the ability to influence effectiveness of teaching directly by enabling educators to translate sustainability of university goals into practices of classroom rather than limiting different initiatives of sustainability to the governance of institute.

Results further show that sustainability performance is affected by the level to which values of environment become embedded within the daily practices and norms of institute. The culture of organization provides continuity beyond individual leadership by ensuring that practices of sustainability principles remain integrated into long term planning of institutions, operational procedures, and decision making. These results are in-line with the results of past studies showing that culture convert commitment of individual into collective behavior of organization. As a result, more enduring and stable practices of sustainability are developed. Universities having stronger culture of environment have more capability to maintain different initiatives of sustainability despite different changes in external conditions or leadership. From the perspective of education, Strong green culture of organization develops a learning environment where sustainability is regarded as key part of everyday educational experience of students. When values of sustainability are reflected across different initiatives of

community engagement, research projects, campus activities, and curricula, students mostly develop strong literacy regarding environment, responsible decision-making competencies, collaborative problem solving, and critical thinking. So, organizational culture contributes to the sustainability performance of institute along with improvement of outcomes related to student learning by fostering students who possess values, skills, and knowledge that are necessary to provide support to sustainable development.

The analysis of mediation also provides theoretical insight by showing that GOC mediated between GIMO, GAL and Sustainability performance. It shows that authentic leadership and internal marketing contribute towards sustainability through direct behavioral influence and shape organizational culture gradually. From the perspective of educational policy, these results indicate that universities should give priority to sustainability through coordination of different policies that integrate development of leadership, learning assessment of students, quality assurance mechanism, curriculum reform, and professional development of faculty. The regulators of higher education and policy makers must encourage universities in order to incorporate sustainability competencies into institutional quality frameworks, graduate attributes, and accreditation standards. These initiatives of policies will facilitate institutionalization of sustainability education on the long-term basis, strengthen contribution of universities and promote educational innovation on regular basis with purpose to achieve global and national development goals.

6. Conclusions

This research explored the relationship among green organizational culture, green authentic leadership, green internal marketing and sustainability performance in context of Indonesian Private universities. For the purpose of analysis Structural equation modelling technique was used. The result of the study confirms that GOC, GAL, and GIMO have significant effect on sustainability performance. Whereas GAL and GIMO also have significant effect on GOC. Additionally, mediating effect of GOC is also confirmed in this research.

Along with providing strength to institutional sustainability, these results show that internal marketing, organizational culture, and sustainability-oriented leadership can play important role to enhance reaching quality by encouraging teachers to integrate sustainability into instructional practices, classroom learning, and curriculum design. Development of strong green culture provide support to development of faculty through continues learning of professionals and creates learning environments that promote active participation and student engagement in sustainability initiatives. As a result, students who develop problem solving skills, ethical responsibility, critical thinking, and sustainable competencies need to address societal challenges and contemporary environment. These results show that higher education institutes should integrate sustainability with institutional policies, faculty development initiatives, and academic programmes to improve sustainability performance and educational quality.

6.1. Theoretical and Managerial Contributions

In terms of theoretical contribution, this research extends the Natural research-based view by showing that intangible resources of organization namely organizational culture, internal green marketing, and environmentally oriented leadership play important role to

improve sustainable performance. These factors also play vital role to gain competitive advantage for the universities. This research also extends the understanding of organizational culture as mediator in context of higher education sector.

In terms of practical implications, results show that managers and decision makers of the private universities should not only rely on infrastructure investments, and environmental policies. Whereas sustainability should be integrated through organizational values, employee capacity development, continuous internal communication, and authentic leadership practices that provide support to environment on consistent basis. Moreover, strengthening internal green culture is important to ensure that sustainability becomes key part of operations of institution rather than a collection of environmental initiatives.

6.2. Limitations and Recommendations

There are several limitations of the study that are mentioned in this section. Firstly, present study collected data through cross sectional research design because of which it becomes difficulty to establish causal relationship over time. Additionally, the study is focused specifically on the private universities of Indonesia. It may limit the generalizability of the research findings to other countries and educational sectors. Therefore, it is recommended that future studies may adopt longitudinal research design with purpose to examine the way organizational culture, leadership practices, and sustainability capabilities have evolved with the passage of time and effect educational and institutional outcomes. Scholars in future are also encouraged to employ mixed methodology approach that combines qualitative interviews with quantitative analysis involving students, faculty members, and academic leaders to obtain insights into sustainability implementation. Moreover, collection of multi-source data from institutional records, students, educators, and administrators will minimize the common method bias. It will also provide a detailed understanding of sustainability practices. Comparative studies in different national universities and public universities context will also strengthen the generalizability of the results.

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