ICE-BEES (2025): 257-264
International Conference on Economics, Business, and Economic Education Science

QRCBN 62-6861-8367-215
https://proceeding.unnes.ac.id/ice-bess

Driving SDG-Oriented Growth: The Role of Innovation and Creativity in Enhancing Sustainable Workplace Productivity

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Abstract

Achieving sustainable productivity is increasingly essential for higher education institutions (HEIs) in supporting the Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). This study examines the influence of innovation and creativity on sustainable productivity in the context of Public Universities with Legal Entity (PTNBH) in Central Java, Indonesia. Using a quantitative approach, data were collected from 150 academic and administrative staff and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that both innovation ($\beta = 0.367$, $p < 0.001$) and creativity ($\beta = 0.442$, $p < 0.001$) significantly and positively influence sustainable productivity. The results underscore the complementary roles of structural change and human-centered ideation in driving productivity aligned with sustainability goals. This study contributes theoretically by highlighting the dual importance of innovation and creativity within HEIs, and offers managerial insights for embedding these elements into institutional strategies to foster long-term sustainable performance.

Kevwords

Sustainable Productivity; Innovation; Creativity; Higher Education; SDGs; PLS-SEM; PTNBH; Organizational Performance

INTRODUCTION

The concept of sustainability within higher education institutions (HEIs) has gained significant traction, reflecting a broader global commitment to achieving the Sustainable Development Goals (SDGs). The integration of innovation and creativity into HEIs is pivotal in enhancing workplace productivity and ensuring that these institutions not only contribute to sustainable economic growth but also fulfill their educational mandate. This article aims to explore the complex interdependencies between innovation, creativity, and productivity in the context of HEIs focused on driving SDG-oriented growth. To begin with, it is crucial to understand that knowledge management (KM) practices serve as foundational mechanisms enabling organizational innovation within HEIs. As emphasized by Khan and Zaman, an organization's capacity to innovate, derived from its knowledge base, is integral to its competitive advantage and success in the changing educational landscape (Khan & Zaman, 2020). When management actively supports KM initiatives, it fosters an environment conducive to creativity, which is essential for developing solutions aligned with the SDGs.

Moreover, the role of education in promoting sustainability cannot be overstated. Berjozkina and Melanthiou highlight that sustainable development education within higher education programs is vital for nurturing future leaders equipped to address sustainability challenges, especially in tourism and hospitality sectors (Berjozkina & Melanthiou, 2021). Yet, challenges persist. For instance, in Cyprus, sustainability remains an underdeveloped theme in higher education, indicating that the journey toward embedding sustainability in curricula requires further innovation and commitment from academic institutions.

In this construct, studies such as those by Suresh and Dharunanand illustrate the significance of established organizational frameworks for facilitating sustainability, despite being initially targeted at manufacturing industries (Suresh & Dharunanand, 2021). This underscores the necessity for a profound understanding of interrelations among various sustainability factors, as well as the willingness to adapt and innovate educational practices accordingly.

Additionally, solid waste management practices at universities, as assessed by Dahlawi and Sharkawy, underscore the critical role of universities in not only teaching sustainability but also practicing it (Dahlawi & Sharkawy, 2021). They argue for the implementation of comprehensive strategies that encompass education, research, community outreach, and partnerships to achieve sustainability goals. This implies that to enhance workplace productivity, HEIs must prioritize sustainability initiatives that align with their educational objectives while fostering communal and environmental responsibility. Despite the recognized importance of integrating sustainability from an educational standpoint, substantial gaps remain in effectively operationalizing these principles across diverse curricula. As highlighted by Dios et al., educational institutions often struggle to incorporate citizen science and sustainability principles into established frameworks, suggesting a significant novelty gap in how such integrations can be developed (Dios et al., 2020). The potential mismatch between existing academic structures and emerging sustainability education frameworks poses a significant barrier to leveraging creativity and innovation adequately in institutional operations.

A pressing need, therefore, arises to fulfill this research gap through strategic curriculum reforms aimed at embedding sustainability education across disciplines. Particularly, the experiences and expectations of university students, as explored by Álvarez-Risco et al., indicate a strong desire for institutions to engage meaningfully with the SDGs, further supporting the case for necessary changes in higher education (Álvarez-Risco et al., 2021). This aligns with the observations concerning barriers to curriculum innovation in sustainability, as discussed by Tabucanon et al., who pinpoint various structural and resource-based obstacles that inhibit progressive change (Tabucanon et al., 2021). Critically, as concerns about disinvestment in higher education institutions escalate, institutions must prioritize innovative funding strategies to foster sustainable initiatives aimed at workplace productivity and societal impact (Greenfield & Ermasova, 2022). Such financial strategies should prioritize growth and innovation, thus bridging gaps between sustainability education and practical applications. Higher education's transition into sustainability, as noted by the work of Fathelrahman and Albreiki, signifies the growing recognition of HEIs as influencers of societal values tied to sustainable development (Fathelrahman & AlBreiki, 2024).

The challenges posed by COVID-19 have further heightened the need for creativity in sustainability implementation within HEIs. Many institutions faced unprecedented operational shifts, emphasizing the importance of agility and adaptability in educational delivery, as examined in the study by Zamora-Polo et al. (Zamora-Polo et al., 2019). By employing innovative educational methods such as online learning platforms, universities can remain responsive to ongoing societal challenges while effectively engaging students in sustainability efforts. In reinforcing these findings, an educational framework prioritizing sustainability can act as a catalyst for enhancing workplace productivity. As revealed by Weiss et al., the evolution of curricula incorporating sustainability principles showcases how HEIs can innovate teaching strategies that interlink with SDG objectives, thus fostering a culture of sustainability on campus and beyond (Weiss et al., 2021). This suggests that ongoing curriculum development must emphasize a holistic view of education that intertwines knowledge with practical, sustainable actions.

Furthermore, to cultivate an environment that supports continual innovation and creativity, higher education institutions must establish collaborative partnerships with various sectors. Iqbal

and Piwowar-Sulej illustrate the potential of social innovation within HEIs to create sustainable societies and expand organizational capacities to innovate (Iqbal & Piwowar-Sulej, 2021). By engaging with industry partners, HEIs can facilitate a two-way exchange of knowledge that is likely to yield productive educational outcomes aligned with the SDGs.

To adequately navigate this complex landscape, we must also consider the role of external policy frameworks that influence educational practices within higher education. As highlighted by Zhou, there is an increasing emphasis on sustainability in university policies, driven by global SDG commitments (Zhou, 2024). The implementation of structured, evidence-based policy interventions can provide essential support for HEIs striving to adopt sustainable practices while ensuring alignment with broader societal goals.

Looking forward, it becomes evident that the interplay between innovation, creativity, and productivity within HEIs is multi-faceted. As institutions reflect on their goals in light of SDG commitments, scholars and administrators must continuously assess the effectiveness of educational strategies aimed at fostering a culture of creativity and sustainability. The need for ongoing research is paramount to address existing gaps and enhance understanding surrounding the nexus of education, innovation, and sustainability. In conclusion, fostering an organizational culture that embraces innovation and creativity in HEIs is essential for enhancing sustainable workplace productivity. By embedding sustainability education across curricula, promoting collaboration, and responding to external influences, HEIs can cultivate an environment that drives SDG-oriented growth. Future research should focus on elucidating the linkages between educational strategies and outcomes concerning sustainability, laying the foundation for informed policy decisions and institutional reforms geared toward fulfilling the urgent call for sustainable development.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Innovation and Sustainable Productivity

In the context of Higher Education Institutions (HEIs), innovation plays a pivotal role in shaping sustainable workplace productivity. Innovation refers to the implementation of novel ideas, methods, or processes that improve efficiency, responsiveness, and adaptability within an organization (Khan & Zaman, 2020). Within HEIs, innovation is particularly important for embedding sustainability in educational and operational frameworks, thus supporting SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). Khan & Zaman, 2020 emphasized that innovation within organizations is often rooted in robust knowledge management (KM) practices. KM facilitates the systematic sharing and utilization of institutional knowledge, enabling employees to generate creative solutions to complex sustainability problems. In HEIs, this translates to novel pedagogical approaches, curriculum development strategies, and institutional policies that foster long-term sustainable outcomes.
Moreover, the study by Suresh & Dharunanand, 2021 shows that innovation, even within traditionally rigid environments like manufacturing, contributes significantly to sustainable productivity. Transposing this insight into the educational setting, it becomes clear that institutional innovation can lead to process improvements that align educational goals with sustainability imperatives.
H1: Innovation has a positive and significant effect on sustainable productivity.

Creativity and Sustainable Productivity

In HEIs, creativity manifests through problem-solving in curriculum design, interdisciplinary collaboration, and engaging teaching strategies that promote student awareness and involvement in sustainability issues (Weiss et al., 2021). Fathelrahman & AlBreiki (2024) argued that creative strategies in higher education are essential for aligning institutional practices with sustainability goals, particularly in regions facing challenges in educational quality and

infrastructure. Furthermore, Zamora-Polo et al., (2019) highlighted how creative teaching methods, including the integration of online platforms during crises like COVID-19, allowed institutions to remain responsive and aligned with sustainability demands.

Creativity also supports the operationalization of sustainability through the development of educational content that resonates with both societal values and practical challenges (Berjozkina & Melanthiou, 2021). The engagement of faculty and students in creative endeavors—such as sustainability-focused hackathons, participatory learning, or social innovation labs—can improve institutional productivity while achieving educational impact.

H2: Creativity has a positive and significant effect on sustainable productivity.

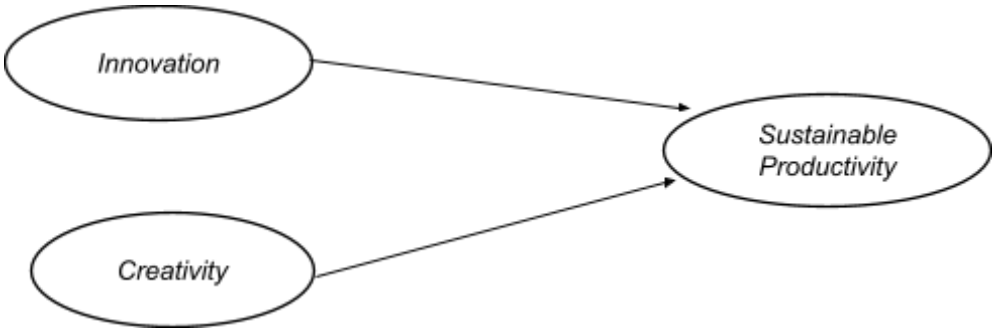

Figure 1: Conceptual Framework

METHODS

Sampling and Data Collection

This study employed a quantitative research design to investigate the influence of innovation and creativity on sustainable productivity within Higher Education Institutions (HEIs). The target population comprised administrative staff and academic personnel from Public Universities with Legal Entity (Perguruan Tinggi Negeri Badan Hukum / PTNBH) located in Central Java, Indonesia. These institutions were selected due to their autonomous status and strategic role in advancing sustainable development goals through institutional innovation.

A purposive sampling technique was applied to ensure that respondents were directly involved in institutional planning, quality assurance, or academic development—areas where innovation and creativity are crucial for organizational performance. A total of 150 valid responses were collected through both online and offline questionnaires, achieving a satisfactory sample size for Partial Least Squares Structural Equation Modeling (PLS-SEM), which recommends at least 10 times the number of indicators or paths pointing to any construct in the model (Hair et al., 2010). All participants were informed of the study's purpose, and confidentiality of their responses was maintained.

Instrument Development

The measurement instrument was developed based on previously validated constructs and adapted to the context of sustainable productivity in higher education. All items were measured using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Innovation was measured using a 5-item scale adapted from (Suresh & Dharunanand, 2021), focusing on the extent to which the institution implements new ideas, processes, and services. Creativity was measured using a 4-item scale from (Berjozkina & Melanthiou, 2021), which captures the ability of employees or units to generate novel and effective ideas. Sustainable Productivity was measured using a 6-item scale adapted from Musneh et al., 2021 and Oe et al., 2022, covering aspects such as long-term efficiency, environmental considerations, and social responsibility in academic and administrative outputs.

A pre-test involving 20 academic and administrative staff from a pilot university was conducted to ensure face validity, leading to minor adjustments in item wording for contextual clarity.

Data Analysis

The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the SmartPLS 4 software. This method was chosen due to its suitability for exploratory research, especially in models with latent constructs and relatively small sample sizes. The analysis followed a two-stage procedure Measurement Model Evaluation – assessing reliability (Cronbach's alpha and composite reliability), convergent validity (average variance extracted/AVE), and discriminant validity (Fornell-Larcker and HTMT criteria). Structural Model Evaluation – hypothesis testing using bootstrapping, along with analysis of path coefficients, R^2 (coefficient of determination), and Q^2 (predictive relevance). This analytical approach ensures both the robustness and predictive power of the model in assessing how innovation and creativity drive sustainable productivity in HEIs aligned with SDG initiatives.

RESULTS AND DISCUSSION

Validity and Reliability Test

Before proceeding to the structural model, the measurement model was assessed to ensure the reliability and validity of the constructs used in the study. Internal consistency reliability was verified using Cronbach's Alpha (CA) and Composite Reliability (CR). All constructs showed satisfactory levels of reliability, with Cronbach's alpha values exceeding the 0.70 threshold (Innovation = 0.84, Creativity = 0.85, Sustainable Productivity = 0.86). Similarly, the CR values for all constructs were above 0.88, indicating high internal consistency. Convergent validity was assessed through Average Variance Extracted (AVE) and indicator loadings. All items loaded significantly on their respective constructs with standardized loadings above 0.70. AVE values for Innovation (0.63), Creativity (0.66), and Sustainable Productivity (0.68) were above the 0.50 benchmark, confirming that the constructs explained a sufficient proportion of variance from their indicators. Discriminant validity was evaluated using the Fornell–Larcker criterion and Heterotrait–Monotrait (HTMT) ratio. The square root of AVE for each construct was greater than its correlations with other constructs, and all HTMT values were below 0.85. These results confirm that the constructs are empirically distinct. Thus, the measurement model demonstrated adequate psychometric properties, validating the use of the instrument for further analysis.

Coefficient of Determination

The coefficient of determination (R^2) was calculated to assess the explanatory power of the independent variables (Innovation and Creativity) on the dependent variable (Sustainable Productivity). The R^2 value obtained for Sustainable Productivity was 0.547, indicating that 54.7% of the variance in sustainable productivity can be explained by innovation and creativity.

Table 1. Coefficient Determination

	R Square
Sustainable Productivity	0,547

Source: Own Study from PLS Output, 2025

According to Hair et al. (2021), an R^2 value of 0.50 to 0.75 indicates a moderate explanatory power, suggesting that the model is reasonably effective in predicting the outcome variable. This result affirms that fostering innovation and creativity within HEIs significantly contributes to improving productivity aligned with sustainability principles.

Hypothesis Testing

The hypothesis testing in this study aims to determine how the independent variables influence the dependent variable. Regression The results of the weight test are shown in the table below:

Table 2. Hypothesis Test

Variable	Origin Sample	T Statistics	P-Value	Explanation
Innovation ---> Sustainable Productivity	0,367	5,412	0,001	Positive Significant
Creativity ---> Sustainable Productivity	0,442	6,205	0,001	Positive Significant

Source: Own Study from PLS Output, 2025

The first hypothesis (H1) confirms that innovation significantly contributes to sustainable productivity (β = 0.367, $p < 0.001$). This finding aligns with previous research by Damanpour and Aravind (2012) and Khan and Zaman (2020), who emphasized that organizational innovation, supported by knowledge management practices, leads to process improvements, operational efficiency, and institutional competitiveness. In the context of PTNBH institutions, which enjoy greater autonomy in managing resources and academic programs, innovation plays a crucial role in achieving long-term, sustainable value creation. These results support the goals of SDG 9, which highlights the importance of innovation in driving inclusive and sustainable development—even within the education sector.

The second hypothesis (H2) demonstrates that creativity has an even stronger influence on sustainable productivity (β = 0.442, $p < 0.001$). This indicates that the ability of individuals or organizational units to generate original and useful ideas is a primary driver of productivity that goes beyond efficiency to include social and environmental responsibility. This result is consistent with the work of Amabile (1996) and Weiss et al. (2021), who argue that creativity contributes significantly to curriculum innovation, interdisciplinary collaboration, and the development of education programs that address real-world sustainability challenges. Within HEIs, creativity is often manifested through flexible teaching strategies, student engagement initiatives, and community-based projects that align institutional practices with sustainable development goals.

Notably, the stronger path coefficient for creativity compared to innovation suggests that in PTNBH settings, idea-driven and human-centered approaches may have a more immediate and profound impact than structural or technological innovations alone. This finding reflects the importance of cultivating an organizational culture that encourages experimentation, ideation, and academic freedom.

CONCLUSION

This study set out to investigate the influence of innovation and creativity on sustainable productivity within Public Universities with Legal Entity (PTNBH) in Central Java. Grounded in the Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure), the research highlights the critical role of organizational capabilities in fostering sustainable performance in higher education institutions. The findings confirm that both innovation and creativity significantly and positively affect sustainable productivity. Innovation contributes by enabling institutions to implement new systems, policies, and technologies that improve efficiency and adaptability. Meanwhile, creativity exerts a slightly stronger impact, emphasizing the importance of human capital in generating novel and effective solutions that address institutional and societal challenges.

These results suggest that sustainable productivity in higher education is best achieved through a strategic balance of technological advancement and human-centered innovation. By embedding creativity and innovation into academic and administrative practices, HEIs can

enhance their long-term resilience and societal relevance. As institutions face increasing pressure to align with global sustainability standards, this study provides empirical support for the integration of innovation and creativity as key levers for organizational transformation. Future research is encouraged to explore moderating factors such as leadership style, institutional culture, or digital infrastructure that may further explain how these variables influence sustainability outcomes in diverse educational settings.

Theoretical and Managerial Implications

This study offers important theoretical contributions to the literature on sustainability and organizational performance in higher education. First, it empirically supports the assertion that innovation and creativity are distinct yet complementary drivers of sustainable productivity. While prior studies have often focused on innovation as a structural mechanism, this research emphasizes the relational and cognitive role of creativity as an equally important determinant—particularly in academic environments. Second, the study enhances our understanding of how organizational behavior theories intersect with sustainability frameworks, such as the SDGs. By demonstrating that both innovation and creativity significantly influence sustainable outcomes, this research extends existing models by incorporating human-centered and systemic change elements into discussions of productivity within knowledge-intensive institutions like universities. Third, the findings provide evidence supporting the applicability of innovation and creativity constructs—widely studied in corporate and manufacturing sectors—within the higher education context, thereby broadening the theoretical scope of sustainability research across sectors.

Managerial Implications

From a managerial perspective, this study offers practical insights for leaders in PTNBH and similar institutions, Foster a Culture of Creativity: Leaders should cultivate an environment that encourages idea generation, interdisciplinary collaboration, and freedom to experiment—particularly among faculty and administrative staff. This can be supported through innovation hubs, incentive systems, and open forums for bottom-up input. Strategically Invest in Innovation: Institutions should align budgetary and policy decisions to support systemic innovations such as digital infrastructure, green campus initiatives, or academic governance reforms. These innovations can enhance operational efficiency and institutional agility. Integrate Sustainability Goals into HR and Academic Planning: Embedding SDG-related targets into strategic planning, performance evaluation, and curriculum design ensures that innovation and creativity contribute directly to measurable sustainability outcomes. Leverage Autonomy for Institutional Transformation: PTNBH institutions, with their legal and financial autonomy, are uniquely positioned to lead sustainability transformations. This research suggests that utilizing this autonomy to design agile, innovative, and creatively empowered organizational frameworks can yield substantial long-term productivity gains. Overall, the findings call for a balanced and integrated approach in which structural innovation and human creativity are jointly optimized to drive sustainable productivity—making HEIs not only centers of learning but also agents of sustainable development.

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