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Transforming into entrepreneurial university: cases from higher education institutions in Indonesia

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ABSTRACT

This study explores the transformation of Indonesian state universities with legal entity status into entrepreneurial universities, using the OECD Guiding Framework for Entrepreneurial Universities as an analytical lens. Through an exploratory qualitative approach, it investigates institutional strategies, structures, and internal dynamics that shape innovation ecosystems. The study focuses on four universities—Institut Teknologi Bandung (ITB), IPB University, the University of Indonesia (UI), and Airlangga University—as case examples. The key finding highlights that while all four institutions have initiated entrepreneurial transformation, the degree of maturity varies significantly. IPB University exhibits the most comprehensive integration of entrepreneurial principles, particularly in research-based entrepreneurship. UI and ITB show substantial progress in innovation commercialization and industry collaboration, while Airlangga University is still in the early stages of ecosystem development. These differences illustrate how institutional context influences the pace and direction of transformation. A unique contribution of this research lies in its contextualized application of the OECD framework to Indonesian universities, offering practical insights into how global models can be adapted to national higher education settings. Strategic leadership, internal governance, and triple helix collaboration emerge as pivotal drivers of entrepreneurial transformation. Despite its insights, the study is limited by its focus on only four universities, which may not represent the full diversity of legal-entity universities in Indonesia. Future research should include broader samples and explore longitudinal changes to better understand the sustainability and scalability of entrepreneurial transitions in higher education.

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Introduction

In the era of a knowledge-based economy, the role of higher education institutions (HEIs) is undergoing a fundamental transformation. Universities are no longer expected to serve solely as centers for education and research, but also as key agents of innovation, entrepreneurship, and socio-economic development (Etzkowitz & Leydesdorff, 2000). This shift has given rise to the concept of the entrepreneurial university—an institution that fosters a culture of innovation, supports commercialization of research, and actively engages with industry and society to generate tangible economic value. Entrepreneurial universities are characterized by their capacity to transform knowledge into products, services, and startups through mechanisms such as incubators,

technology transfer offices, and interdisciplinary collaboration (Guerrero-Cano, Kirby, & Urbano, 2006; Salamzadeh et al., 2011).

In Indonesia, the urgency to adopt the entrepreneurial university model is heightened by the country's long-term vision of "Golden Indonesia 2045," which positions education, innovation, and the digital economy as core pillars of national development. Despite this vision, the contribution of Indonesian universities to innovation ecosystems remains limited. Most universities continue to prioritize traditional academic activities, while outputs such as patents, startups, and commercialized research are still far from optimal (Maritz et al., 2022). This gap reveals a disconnect between the academic potential of Indonesian universities and their ability to fulfill a broader entrepreneurial role. Although a few institutions—such as Institut Pertanian Bogor (IPB), Universitas Indonesia (UI), and Institut Teknologi Bandung (ITB)—have made progress through initiatives like patent production and Science Techno Parks, these efforts remain fragmented and lack nationwide systemic impact (Sakapurnama et al., 2020; Novela, 2022).

One of the major challenges in this transformation lies in the absence of an entrepreneurial culture within the academic environment. Research in Indonesia tends to be constrained by administrative and academic norms, lacking focus on real-world problem-solving or economic relevance. Additionally, regulatory constraints, limited funding, and insufficient incentives for faculty and researchers to engage in commercialization further hinder progress (Utami, Maritz, & Sumaji, 2022). While national policy frameworks—such as Law No. 11/2019 on the National Science and Technology System and the Job Creation Law—offer legal support for innovation and commercialization, many universities still struggle to utilize these opportunities effectively due to internal bureaucracy and weak university-industry linkages.

At the same time, several studies have highlighted the increasing entrepreneurial intentions among Indonesian students, driven by factors such as entrepreneurship education, entrepreneurial mindset, and institutional support (Setyanti, 2021; Satriadi et al., 2020; Alwiyasa et al., 2024). However, such intentions are not yet fully supported by robust university ecosystems. There remains a need for integrated institutional strategies that go beyond individual orientation, focusing instead on long-term transformation at the organizational level. In the Southeast Asian context, universities face similar barriers including limited resources, low industry engagement, and inadequate entrepreneurial policies (Utami et al., 2022). Thus, examining the institutional structures and strategies that facilitate this transformation is crucial.

Most existing research on entrepreneurial universities in Indonesia remains descriptive and fragmented. While several studies explore entrepreneurship from the perspective of students or faculty members (Maritz et al., 2021), there is a notable lack of comprehensive research that investigates structural strategies, inter-sectoral collaboration, and policy dynamics within universities. A deeper institutional approach is necessary to understand how universities can systematically transform into entrepreneurial entities capable of driving innovation and sustainable development (Yuan et al., 2021). This study seeks to address this research gap by exploring institutional transformation strategies, challenges, and best practices in selected Indonesian universities, particularly those with autonomous legal status (PTNBH).

This research is significant in both theoretical and practical dimensions. Theoretically, it aims to enrich the understanding of how institutional structures and governance support entrepreneurial transformation in higher education, especially within developing countries. Practically, the study is expected to provide actionable insights for university leaders and policymakers in Indonesia to enhance entrepreneurial performance and innovation-driven impact within the higher education sector.

Method

This research employs an exploratory qualitative method to examine the transformation of higher education institutions in Indonesia—particularly state universities with legal entity status—towards an entrepreneurial university model. This approach is deemed appropriate due to the complex, contextual, and multi-dimensional nature of the phenomenon under investigation, which requires an in-depth understanding of real conditions within university organizations (Creswell, 2014).

The research focuses on the strategies, organizational structures, internal policies, and dynamics of entrepreneurial program implementation within these institutions. The main subjects of the study are four prominent Indonesian state universities with legal entity status: Institut Teknologi Bandung (ITB), Institut Pertanian Bogor (IPB University), Universitas Indonesia (UI), and Universitas Airlangga (UNAIR). These universities were selected purposively based on their significant institutional efforts to develop innovation and entrepreneurship ecosystems. Such efforts include the establishment of Technology Transfer Offices (TTO), business incubators, Science and Techno Parks (STP), and the adoption of internal policies made possible by their autonomous status.

Participants in this study include 20 individuals selected through purposive sampling. They consist of university leaders (rectors, vice-rectors, and deans), directors of TTO/STP units, entrepreneurship program coordinators, lecturers involved in entrepreneurial curriculum development, student entrepreneurs, and external industry partners who collaborate with the university. These varied backgrounds ensure a holistic understanding of institutional entrepreneurial practices.

To guide data analysis, the OECD Guiding Framework for Entrepreneurial Universities (OECD, 2012) is employed. This framework outlines seven dimensions that represent the key characteristics of entrepreneurial universities (1) Leadership and Governance, (2) Organizational Capacity, People, and Incentives, (3) Entrepreneurial Teaching and Learning, (4) Pathways for Entrepreneurs, (5) University–Business–External Relationships, (6) The Entrepreneurial Impact (Measuring Outcomes and Impact), (7) Internationalization

These dimensions are used to construct indicators, develop interview protocols, and organize the coding of field data. Data collection was conducted using three methods (1) In-depth interviews with the 20 key informants mentioned above, providing insights into institutional practices, strategies, and challenges. (2) Document analysis involving institutional policy documents, internal regulations, university annual reports, entrepreneurship program brochures, scientific publications, and reports from TTOs and business incubators. (3) Field observation, where applicable, to gain contextual insights into entrepreneurial activities on campus.

To ensure data validity, triangulation was applied by cross-verifying findings from different sources (interviews, documents, and observations). Additionally, member checking was conducted by returning synthesized interview summaries to participants to confirm the accuracy of interpretations and clarify ambiguities. A research log and coding memos were also maintained to support the audit trail and transparency of the qualitative analysis.

Results and Discussions

The findings of this study reveal diverse levels of institutional transformation across the four Indonesian state universities with legal entity status (PTNBH). While all universities under study—Institut Teknologi Bandung (ITB), IPB University, University of Indonesia (UI), and Airlangga University—have shown some commitment to the entrepreneurial university model, their approaches vary in structure, intensity, and strategic coherence.

Referring to the OECD (2012) Guiding Framework, the dimension of Leadership and Governance plays a pivotal role in shaping entrepreneurial direction. At ITB and UI, entrepreneurial initiatives are integrated into the strategic plans and supported by top-level leadership, aligning with the OECD's emphasis on the centrality of leadership in promoting innovation culture. However, in other institutions, entrepreneurial goals often remain fragmented and heavily reliant on specific units (e.g., business incubators or TTOs), which may limit systemic impact.

The dimension of Organizational Capacity, People and Incentives is inconsistently developed. While some universities have provided dedicated human resources and physical infrastructures—such as Science Techno Parks and innovation centers—the incentive structures for academic staff to engage in entrepreneurial activities remain underdeveloped. This echoes Etzkowitz's (2003) observation that academic entrepreneurship often flourishes only when institutions modify reward systems to accommodate commercialization goals.

In terms of Entrepreneurial Teaching and Learning, only one institution (IPB University) has systematically integrated entrepreneurship into the curriculum across faculties, supported by extracurricular programs like business competitions and student incubators. This partially fulfills the OECD framework's recommendation for fostering an entrepreneurial mindset through learning. However, the absence of robust assessment mechanisms for entrepreneurial learning outcomes indicates a gap between policy rhetoric and implementation.

The University–Business–External Relationships dimension is particularly strong at ITB and UI, where collaboration with industry, regional governments, and alumni networks has resulted in funding for startups and joint research. This finding aligns with Guerrero and Urbano's (2012) assertion that effective entrepreneurial universities actively engage with their regional innovation systems. Still, such collaborations are often informal or personality-driven rather than institutionalized, making sustainability uncertain.

Regarding Pathways for Entrepreneurs, support systems such as incubators and mentoring programs exist, but their accessibility and long-term follow-up vary greatly. Moreover, there is minimal tracking of alumni entrepreneurs or their contributions to the ecosystem. Measuring Impact, as outlined by the OECD, is one of the weakest dimensions across all four universities. Data on startup survival rates, revenue generation, or job creation is scarce or not systematically collected.

On Internationalization, most universities are increasingly engaging in global networks through joint ventures and mobility programs. However, international entrepreneurial partnerships (e.g., foreign venture capital, global startup mentoring) are still in nascent stages.

Table 1. Summary of OECD Framework Entrepreneurial University in Indonesia

Dimension	IPB University	University of Indonesia	ITB	Airlangga University
Leadership & Governance	STRONG	STRONG	STRONG	Developing
Organizational Capacity	Comprehensive (STP, TTO, hub)	IT is developing	TTO unit exists, STP lacking	Early incubator
Teaching & Learning	Systematized	Integrated	Faculty managed	Study program module/sc
Pathways	GSC Incubator	TTO & Sandbox	LPIK + SMEs incubator	Campus incubator
Partnerships	Local government & industry	Global strong industry	Industry & global	Local industry
Impact	Growing (MSMEs & startups)	Patents & licenses grow	Tech startups born	Spinoff -early
Internationalization	Global research collaboration	QS collaboration & ranking	Research collaboration	Conference research

Despite the insights gained, this study has several limitations. First, the findings are based on qualitative interviews with a limited number of stakeholders from each institution. Although data triangulation was conducted through documentation and cross-respondent comparison, there remains a potential for informant bias, especially since most respondents hold institutional leadership roles and may present an overly optimistic view of progress.

Second, generalizability is inherently limited due to the case-study design. While the four PTNBH universities represent leading institutions in Indonesia, their contexts may not reflect the broader challenges faced by other higher education institutions attempting to adopt the entrepreneurial university model.

Third, while the OECD Framework provided a robust analytical tool, it was developed primarily for institutions in more developed economies. Hence, some dimensions (e.g., internationalization, impact measurement) may require adaptation to fit the resource constraints and policy environments of universities in the Global South.

Future research should consider incorporating perspectives from external stakeholders—such as student entrepreneurs, alumni founders, or government officials—to provide a more holistic view of the entrepreneurial transformation process. In addition, mixed-method approaches combining qualitative insights with quantitative performance indicators (e.g., startup survival rate, funding secured, patent outputs) could enhance the robustness of findings.

Conclusions

Based on the analysis of seven key dimensions of the OECD framework—leadership, organizational capacity, entrepreneurial learning, entrepreneurial pathways, external partnerships, entrepreneurial impact, and internationalization—it can be concluded that the institutional transformation of state-owned legal entity universities in Indonesia toward entrepreneurial universities is a gradual and multifaceted process. The levels of readiness and progress differ across institutions. Among the case studies, IPB University demonstrates the most advanced and integrated development, supported by a robust innovation ecosystem, visionary leadership, and well-defined strategic policies. In contrast, other universities such as UI, ITB, and UNAIR exhibit strengths in specific areas but still struggle to achieve institutional coherence and measurable entrepreneurial outcomes.

Leadership with a clear entrepreneurial vision and consistent strategies emerges as a central driving force in the transformation process. However, significant challenges persist in dimensions like organizational capacity and entrepreneurial pathways. These challenges include limited financial autonomy, inadequate faculty incentives, and the absence of systematic support for interdisciplinary collaboration. Although efforts to foster partnerships with external stakeholders are underway, they tend to be limited in scope—often focusing narrowly on research collaborations—without fully leveraging innovation outputs to create economic and societal value at scale.

This study underscores the importance of institutional culture and internal governance reform in achieving a true entrepreneurial transformation. Physical infrastructure and programs alone are insufficient without adaptive leadership, flexible academic regulations, and performance-based incentives. The case of IPB University can serve as a model for other institutions in aligning top-down strategies with grassroots innovation. Policymakers are encouraged to provide regulatory clarity, long-term funding schemes, and performance-based support that empower universities to function as entrepreneurial hubs within the national innovation ecosystem.

For future research, deeper investigation into the interaction between institutional strategies and national innovation systems is recommended. It is also important to explore how bottom-up initiatives—such as student entrepreneurship, faculty-led startups, and community innovation—can be integrated into formal university systems. Additionally, applying comparative frameworks like HEInnovate or ASEAN-based models may offer more context-sensitive insights into how entrepreneurial university frameworks can be adapted across Southeast Asian higher education contexts, especially in Indonesia.

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