

# THE ROLE OF GOOD UNIVERSITY GOVERNANCE FOR TRANSFORMATION TOWARDS THE ENTREPRENEURIAL UNIVERSITY

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## Abstract

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Governance has been widely discussed by scientists and practitioners. There have been many opinions about the concept of good governance, especially good university governance (GUG) for higher education. Governments should act according to all the criteria of good governance (de Vries, 2013). The purpose of this study is to figure out how the implementation of GUG affects the performance of the university. The study applies combine qualitative and quantitative research methods by using structured questionnaires. GUG has not become a culture, as a result, universities are unable to provide the manpower needed by industry. The university needs to reconsider its mission, not only as a social and educational function but also as an entrepreneurial one, by developing strategies and programs and involving stakeholders. The level of trust of the stakeholders will be determined by how well GUG in the university is implemented. The first step to becoming entrepreneurial universities is to change them from education universities to research ones. This can be interpreted that every university has the same view of the importance of implementing GUG. The implementation of GUG is a sign of gaining the university's success.

**Keywords:** Good University Governance, Entrepreneurial University, Sustainable Performance

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## 1. INTRODUCTION

Globalization has brought changes to all aspects of life, including higher education. For the sake of the implementation of higher quality education, in producing the best graduates, the structure and

methods of education must always be adapted to the development and needs of the community and industry (Anggara, 2011). These changes are ongoing and even of increasing scale and intensity. Universities are currently competing to become world-class. Higher education should be flexible and

adaptive to the changing times without sacrificing capacity, independence, values, and a noble reputation.

The Industrial Revolution 4.0 is an effort to transform organizations towards a technology culture. The country's success in facing the Industrial Revolution 4.0 is closely related to innovations created by quality resources so that universities are able to answer the challenges of facing technological advances and competition in the world of work in the globalization era.

To realize good university governance (GUG), universities should have teaching staff that have superior qualifications and competencies and have high learning efficiency and productivity. In addition, universities are also able to raise funds by collaborating with partners in business development. Higher education based on GUG realizes its mission in seeking, discovering, and disseminating scientific truth.

To realize the vision, each university needs to transform itself into an entrepreneurial university. According to the Organisation for Economic Co-operation and Development (OECD), there are at least five elements that encourage transformation, such as strengthening integrated governance, risk management, and compliance operational-wise. Universities need to harmonize the values of the new management with the ongoing tradition, so they can adapt to the dynamic global change. All academicians need to understand the vision, mission, and values through the implementation of integrated governance, risk management, and compliance of universities, so all stakeholders are actively involved in the transformation process. Universities have a strong intention to upgrade their supporting facilities to meet the demands of society and to complete them with IT facilities, so the development complies with the universities and their social and environment. Universities should be more creative in finding sources of funding to be able to choose which is the most suitable to support the transformation process, such as tuition, crowdfunding, bank loan, and commercial research.

Generally, in stimulating the management and the stakeholders, universities play an active role in encouraging transformation by motivating lecturers, researchers, academicians, management, and stakeholders. Universities conduct education and socialization for all academicians and stakeholders to understand and implement the culture of entrepreneurship which is integrated into their activities. In the process of understanding entrepreneurial culture, they need to develop human resources and empower them (Leipziger, 2015).

Good governance practice has a positive effect on the performance of organizations as well as universities. Therefore, so that governance practice affects performance, universities need to build strategies that also consider the interest of the stakeholders. GUG is considered an important element of higher education to be able to anticipate, design, implement, monitor, and assess the effectiveness and efficiency of policies (Hénard & Mitterle, 2010).

The purpose of this paper is to study and analyze the correlation between the implementation of governance, risk management, and compliance, the university performance, and the development of universities for moving towards an entrepreneurial university.

Universities must establish GUG which is a direction and basis for transforming and managing higher education. GUG encourages the success of higher education by providing qualified graduates who are ready to compete globally. It takes hard work and high discipline in educating as well as teaching cultural values and the association of global society.

There are three preconditions for the success of a university's transformation. Firstly, the alignment between the organization's structure and the behavior of the academicians to reach their targeted performance. Secondly, the process orientation of the academy towards service and satisfaction of the stakeholders. Thirdly, universities are able to implement their best management practice in their management and development. So that the process of realizing universities become entrepreneurial universities can go as planned, the transformation of the universities should be implemented under the corridor of the signs that we know as GUG. Generally, the quality of universities depends on the implementation of GUG, which can be classified into good governance, fair governance, and bad governance (Charmonman & Mongkhonvanit, 2013).

Implementation of GUG has not been carried out consistently. It is not enough for universities to only have professional teachers and researchers but also to produce entrepreneurs. Implementation of GUG has not been stated in a formal document, in other words, it has not become a higher education culture. The GUG must be understood by the entire academic community. The context of this gap analysis is related to academic values, ethics, and morals associated with entrepreneurial spirit and competence in entrepreneurial university variables. To ensure the effective implementation of the transformation process towards an entrepreneurial university, GUG needs to be developed to explain a new theory about university transformation towards entrepreneurial university.

This study is expected to contribute to giving an understanding that GUG can be implemented in universities to increase operational performance. This research is meant to recognize the impact of GUG on the university transformation process towards an entrepreneurial university.

The structure of this paper is as follows. Section 1, as an introduction, includes several key elements: a hook to catch the reader's interest, relevant background on the topic details of the research problem, and the research question. Section 2 reviews the relevant literature. The literature review, as a comprehensive summary of previous research on a topic, surveys scholarly articles, books, and other sources relevant to a particular area of research. Section 3 analyses the methodology that has been used to conduct empirical research on the implementation of GUG as a sign to keep the operation of the university, either as an educational mission or in conducting its economical mission when transforming towards an entrepreneurial university. Section 4 presents the result of each university implementing GUG in managing its education. Section 5 discusses GUG implementation in commercial research. Section 6 concludes the research paper by providing a clear interpretation of the results of the research in a way that stresses the significance of the paper.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT ANALYSIS

Practically, GUG is derived from good corporate governance (GCG) in a company. Therefore, the study of GUG cannot be separated from the theory and the practice of GCG implementation in a company.

### 2.1. Theory of governance

There are two theories in relevant to corporate governance: stewardship theory and agency theory. Stewardship theory was introduced by Donaldson and Davis (1989) as a normative alternative to agency theory. Executive manager, under the stewardship theory, is far from an opportunistic thinking pattern. He wants to do his job well, becoming a good servant of his company. This theory was established above the philosophical assumption about human character, that essentially, humans are trustworthy, able to act responsibly, and have integrity and honesty. This is implied in the human relationship required by the shareholders and the stakeholders. In other words, stewardship theory views management as the trusted party to act as well as possible for the public interest generally and for the shareholders specifically.

In the meantime, agency theory was first introduced by Jensen and Meckling (1976). They stated that agency correlation occurred when the principal hired an agent to give a service and then delegated the authority to make a decision. It was then developed by Michael Johnson, a Harvard professor, where he viewed that corporate management, as the shareholder agent, will act with full awareness for his own interest, not as a person who takes a side in the interest of the shareholders, as assumed by the stewardship model. On the contrary to stewardship theory, agency theory views that management cannot be trusted to act as best as he can for the public interest generally, or shareholders specifically. Therefore, managers cannot be trusted to do their duty to maximize the value of the shareholders. In the next development, agency theory got wider responses, because it was considered to be more realistic to the situation. Several thoughts about corporate governance focus on agency theory, where companies must be supervised and controlled to make sure that management of rules and applicable regulations is conducted obediently, for example, in 1992 — through what was known as the Cadbury Report — it issued its own definition about GCG. According to the Committee on the Financial Aspects of Corporate Governance (1992), GCG is a principle that leads and controls the company to reach a balance between its ability and authority in giving its accountability to the stakeholders in accordance with the company's management.

### 2.2. Principles of good university governance

To understand the implementation of GUG, eight principles are used based on the educational institutional model approach. They are academic freedom, governance implementation by all the involved parties, clear rights and obligations, merit-based management selection, financial stability, accountability, regular standard checking,

and the importance of good cooperation with all parties (Muljo et al., 2014). Generally, to gain public trust, it is agreed that the quality of higher education depends on GUG implementation. All universities must care and have purposes to adopt GUG (Charmonman & Mongkhonvanit, 2013). The implementation of GUG should be understood by the university, not only as an obligation but also as a need, by not putting the rights of other stakeholders aside.

Practically, some researchers conduct their research in collaboration with the industry on behalf of a university, where the benefit is not for the university but for themselves. Some researchers conduct research in collaboration with the industry for the university, to produce patent rights, but the benefit for the researchers is only valued as fulfilling the number of their working hours. These are real examples of how one of the principles of GUG, fairness, has not been implemented yet. Another example is when a university loses its dignity; it is reduced only to be a corporate university. The rector has a dominant authority as a director; especially there are barely any signs of checks and balances among the organizations. The university even welcomes everyone to sit on the Board of Trustees, including those who affiliate with political parties. The process of harmonization and finalization discussion of Law No. 75/2021 no longer involves the senate of the academy and the board of professor council and is conducted privately without undergoing other organ and stakeholder discussion, which is against the autonomy of the university mandated by the Law No. 12/2012.

### 2.3. Process of governance

The process in which “incorporated” national universities are expected to become more autonomous from the government in their operations. After national universities are incorporated, their managerial structure is expected to have realigned placing the president at the center of decision-making, and with the participation of external persons, be more responsive to the changing needs of society with more efficiency (Mok, 2010).

Furthermore, it finds that corporate transformation towards Industry 4.0 (CTTI4.0) disclosure has a positive impact on financial performance. In addition, it finds that environmental, social, and governance (ESG) practices moderate the relationship between CTTI4.0 disclosure and financial performance. This indicates that firms with better ESG performance tend to be more engaged in CTTI4.0 disclosure and have better financial performance simultaneously. Our findings offer insights to decision-makers and regulatory bodies regarding the current practices of CTTI4.0 and its potential economic impact (Hussainey et al., 2022). As indicated by all stakeholders in our case study, implementing a governance model requires the operationalization of coordination and cooperation models with respect to four key aspects: personnel, finance, quality assurance, and infrastructure. This paper helps us understand how this could work in practice. We showed that the following factors of success are met: reduction of competitive pressure, financial security, internal and external transparency, organizational autonomy, and a clear vision (Muyters, Broucker, & De Witte, 2021).

We contend that we should pay more attention to the bottom-up initiatives that stem from below. We further contend that, if the node package manager (NPM) refers only to changes in the policy approaches, structural adjustments, and governance models, the validity of which is restricted in time, the understanding of higher education governance will have limited validity and will fade when this particular period ends (Yembergenova, 2022). Higher education institutions are tasked with various roles and face new challenges. These include evolving student populations, a changing labor market resulting in the need for continued professional development, and challenges to university autonomy in how to address such trends. Several university governance reforms have taken place, both within national systems and inside the institutions themselves, regarding the relationship between universities and public authorities, and internal university organizations. Promoting institutional autonomy as a core principle continues to be highly relevant and important, as it supports university values. Effective governance completely depends on how university management activity meets the needs of all stakeholders. It is so as university governance needs an adjustment in the concept of role and knowledge contribution as a precondition to be an entrepreneurial university.

#### **2.4. Good university governance and commercial research through spin-off companies**

Good university governance as well as good corporate governance is supported and developed from agency theory in which the management of universities, as well as companies, must be monitored and controlled to ensure that management is carried out in full compliance with company policies, standards, and applicable regulations. Supported by the opinions of Machmuddah (2016), Muktiyanto (2016), Wahyudin, Nurkhin, & Kiswanto (2017), and Amilin (2016), it has been empirically proven that GUG affects the performance of higher education and university spin-off companies as executors of commercialization research results. Higher education performance indicators are reflected in new research findings that have a positive impact on the development of science and higher education income as well as improving community welfare through collaboration with industry in a sustainable manner. Based on the theories and opinions of experts, the following hypothesis is proposed.

*H1: Good university governance is able to support continuous improvement of commercial research.*

#### **2.5. Good university governance and entrepreneurial university**

The entrepreneurial university concept is a triple helix model developed by Ranga and Etzkowitz (2013) and Leydesdorff and Etzkowitz (1995). The triple helix model is based on the idea that the potential for innovation and economic development in society lies in the more prominent role of universities in collaborating on the three pillars of the virtues of innovation, namely university, industry, and government. The triple helix model is based on three basic elements (Etzkowitz et al., 2007), namely

the new role of the university in the innovation development process, the development of collaboration between the three pillars, and the important role of each actor in addition to its traditional function. In the triple helix model, each actor of the system must play a role and must work in close synergy between universities in generating new knowledge and technology that can be applied to the industry. The government acts as a provider of public services in addition to a regulatory role in setting the rules. Venture capital and large corporations act as innovative systems, bringing capital, managerial skills, and networks of relationships that drive innovative business development.

Universities are becoming entrepreneurs by offering not only educational programs but also by establishing themselves as important players in the innovation ecosystem of economic and social development (Etzkowitz & Leydesdorff, 2000; Etzkowitz, 2019). Universities are important institutions for generating and transmitting knowledge, providing platforms and instruments to support technology transfer processes, mobilizing value for entrepreneurial careers, and supporting business start-ups. Therefore, realizing an entrepreneurial university is possible to refer to theories related to what needs to be done. First, research suggests that academics may be more akin to entrepreneurs, implying that when it is entrenched, the efforts of academics are less burdensome. Second, with our knowledge and understanding of entrepreneurship in general and entrepreneurship in particular, we should be able to build an environment where companies can develop themselves (Kirby, 2020).

Ratten (2017) highlights the importance of entrepreneurial universities in the global community and international recognition of entrepreneurial universities due to the view that this provides benefits to students. The transition to an entrepreneurial university is primarily driven by an entrepreneurial attitude in education. Universities are expected to have new ideas for the future. The combination of education, research, and commerce is the implementation of an entrepreneurial university that aims to improve the socioeconomic conditions of the community. Etzkowitz (1983) suggests three stages to arriving at an entrepreneurial university. The first stage of higher education must be independent on the government budget. The second stage involves universities as beneficiaries of intellectual property and the third stage involves universities establishing relationships with industry and society to bridge the gap between knowledge and practice.

The entrepreneurial university actively seeks to innovate in carrying out its role. Universities strive to substantially change the character of the organization so as to achieve a more promising posture for the future. The entrepreneurial university can be seen as a process and result, striving to become a leading university which is an important factor with its own uniqueness (Clark, 1998). There are four stages towards entrepreneurial university status, namely the management model, organizational structure, teaching and research, government facilities, and organizational culture. A more proactive attitude towards an entrepreneurial

university will be facilitated through a culture of innovation and courage to take risks through funding and infrastructure support from the Government. Universities must embed entrepreneurship in every part, from their leadership to the impact on their teaching and students. The need to show excellence in strong leadership on all fronts (Arnaut & Spotti, 2014).

Entrepreneurial university is a higher education with the ability to optimize its resources through creating opportunities, innovation, and competitiveness in facing the challenges of becoming a world-class higher education. Entrepreneurial university can be realized through commercial research by university spin-off companies, and by collaborating with industry and society, based on GUG. Universities that wish to develop into entrepreneurial universities need to adjust their vision and mission not only for teaching and research functions as well as creating business opportunities. A holistic approach to entrepreneurship can be mutually beneficial for universities, and entrepreneurs who start in academia and industry. And with motivated and connected experts dedicated to facilitating different types of relationships, university-industry partnerships can lead to exceptional results (Schwab, 2019).

With limited resources owned by universities, the quality of existing services is still not as expected starting from the time of registration to services to alumni and the community in general, especially related to the availability of access to the required information, with the support of information technology. The application of the principles of transparency and responsiveness will improve the quality of information services both internally, in the academic community, and in the wider community so that the implementation of higher education tasks becomes more effective and efficient in the sense that the scarcity of available information is responded to quickly and easily. Implementing service excellence builds a direct link between the workforce and a successful competitive strategy. To compete efficiently and effectively in their niche market, higher education institutions need to implement service excellence to ensure internal and external customer satisfaction. A strong institutional culture that values internal customers can help achieve a motivated workforce, loyalty, high performance, innovation, and distinctive institutional competitive advantage (Khan & Matlay, 2009). Academics are increasingly directly involved in the commercialization of their research, either by starting new firms or patenting/licensing technological solutions or technology platforms. It is still unclear how economically important these forms of academic entrepreneurship are. There is evidence in the scientific literature in many countries and many regions that the direct effects of academic spin-offs (ASOs) seem not to be that important. Nevertheless, there are wider effects from such ASOs or academic patenting — even for those that do not succeed. There is an increasing understanding that even failed spin-offs provide a mechanism for diffusing and exploiting the knowledge that benefits other entrepreneurs facilitates the expansion of firms and strengthens the competence structure of supporting actors and sectors (Kaloudis et al., 2019).

One of the biggest factors in good customer service is speed, especially when a client is requesting something that is time sensitive. Great interactions begin with knowing your customers' wants and needs; customers love personalization. Fixing your mistakes and not taking responsibility for your mistakes is a surefire way to get a bad reputation. Transparency is important in business and customer service is no different. Always strive for high-quality output as it shows you have a high level of standards. Listen to your customers, listening to your customers will not only result in an indebted and happy customer, but it can also go a long way in terms of keeping yourself on their radar for future business. Think long-term when dealing with customers by keeping customers happy, they will be loyal and through word of mouth, will do the marketing for you. In fact, according to Blackshaw (2008), a satisfied customer tells at least three friends whereas an angry customer tells 3000. Therefore, the second hypothesis to be developed is as follows.

*H2: Good university governance supports the transformation towards an entrepreneurial university.*

## **2.6. Commercial research and entrepreneurial university**

Commercialization of research conducted through university spin-off companies based on GUG is one of the pillars of entrepreneurial university activities. To transform into an entrepreneurial university, it is important to design an innovative teaching program equipped with a business incubator as a practical tool. The transformation to an entrepreneurial university begins with the formulation and implementation of GUG, research commercialization activities through the university spin-off company begin with patent and license registration, and the development of an entrepreneurship education curriculum.

An entrepreneurial university is a university that considers the use of new funding sources such as the use of patents, and research funded in partnership with private companies through the provision of incubator facilities, and supporting structures for lecturers and students to start new businesses by combining intellectual and commercial elements (Etzkowitz, 1983). Thus, the commercialization of research will support entrepreneurial universities so the third hypothesis is:

*H3: Commercial research supports an entrepreneurial university.*

## **3. METHODOLOGY**

The mixed analysis approach is used, which is a research approach that combines qualitative and quantitative research methods. This approach not only collects and analyzes two types of data but also involves these research approaches collectively so that this research becomes even stronger. This research uses primary data and secondary data from universities in Indonesia, both private and public. Primary data was taken using the 2020 questionnaire and secondary data was taken from data available on internet sources in the form of journals and books. To answer the problem of this

study, relevant, accurate, current, and trusted data collected through research in the library, literature, journals, and relevant documents are needed. The population in this study are universities in Indonesia, both public and private, supported by the research of 24 universities with 40 respondents in total, consisting of 10 legal entity state universities, 4 state universities, and 10 private universities. Information analysis is conducted through descriptive analysis of quantitative and qualitative, where the result of filling out the questionnaire and discussing with some informants is either as an individual or groups who have related knowledge.

The sampling method used is non-probability sampling, more specifically called purposive sampling, which is defined as a sampling technique with certain considerations. This technique is based on certain criteria that are determined based on the research objectives. The analysis tool is using SEM, conceptual variable measurement, where the model is measured with a reflexive indicator.

This study uses a Likert scale on the questionnaire. The questionnaire will use an odd number of choices, which is a score of 7. The choices are from 1 to 7, namely, 1 – not very good/totally agree, 2 – not good/agree, 3 – less good/agree, 4 – neutral, 5 – good/agree, 6 – very good/agree, 7 – extremely good/agree.

Questions will be derived from the indicators of each variable dimension. This research scope is limited to GUG as a sign to keep the operation of the university, either as an educational mission or in conducting its economical mission when transforming towards an entrepreneurial university.

#### 4. RESULTS

To run the three requirements of the success of educational transformation, each university implements GUG in managing its education. According to the United Nations Development Programme (UNDP) in people-centered analysis, held in March 2009 and according to Hénard and Mitterle, (2010), the principles of GUG consist of participation, meaning everyone has equal rights in decision-making either directly or through a legal mediator institution that represents their interests. Extensive participation is built on the freedom of association, and the capacity to constructively participate. In other words, the involvement of stakeholders is needed to make a decision, either directly or through a representative.

University should have a strategic vision with a long-term comprehensive perspective. The leaders and the society have extensive perspective similarities on good governance and the development of human resources, along with an understanding of what is needed for the intended development. There is also an understanding of the complexity of history, culture, and social, where this perspective is based on good governance for the development of human resources.

The process and institution try to serve the needs of all stakeholders. Effectiveness and efficiency of a process and institution result in a needed accomplishment by making use of resources as well as possible. Therefore, universities need to be responsive to the process of using effective resources, especially non-renewable resources.

Decision-makers should be responsible for the public and the stakeholders. This accountability can be different depending on the organization and the nature of the decision, either internal or external. Therefore, universities are responsible for the stakeholders, including society, either as an effect of the policy or its operational activity in conducting the applicable laws and regulations.

Transparency is built above a free information stream. The information must be able to be accessed directly by those who have an interest, and it is adequately available to understand and monitor. Essentially, people can access the required information, related to the operational activity of the university.

Fairness means people have the same opportunity to keep and maintain their welfare. The rule of law framework must be fair and enforced without taking sides, especially the law about human rights. University does not discriminate, either the activities between the academicians and the stakeholders or the people who will be involved in the university's activities according to the applicable regulations.

The long-term goal expected from GUG implementation at the university is the base towards an entrepreneurial university, besides a teaching/research university. Universities optimize their potential and capacity to gain competitive advantage, which is often called academic excellence. Universities should synergize with the industry, not only receiving compensation from research and training activities, but also as a business synergy partner with the industry.

To fully understand the concept of university governance, it can be illustrated by referring to the diagram of a governance house. The governance house will surely stand firm above governance principles that become the commitment of the organization. Governance outcome, process, and structure are built above the principles, where it does not only effectively and efficiently manage job distribution, but also an effort to avoid conflict of interest and fraud potential, also mechanism work in keeping the check and balance mechanism, to support the process of policies making for generating equally good process and outcome. Therefore, an organization can continuously run its function because it gets full support from all stakeholders.

British and Irish ombudsmen introduce the following six principles as follows: independence to guarantee autonomy and demonstrate the freedom of the office holder from interference in decision-making; openness and transparency to ensure information disclosure, thus the stakeholder can have confidence in the decision-making and management; accountability to ensure that all functions of units in the organ, including all office holders, staff, and members of any governing body; responsible and capable of their actions and decision, including in managing the financial with integrity to ensure all transactions and their solutions are done fairly, they are not selfish and objective according to high standards of probity and propriety in making decisions and doing all affairs; clarity of purpose to ensure that stakeholders know why the scheme exists and what it does, and what to expect from it; effectiveness to ensure that the decision gives optimal results efficiently to gain the best result over the spending.

Directorate General of Higher Education, Ministry of Education and Culture describes the principles of GUG as follows: transparency, maintaining mechanisms of checks and balances to stay maintained to avoid conflict of interest; Accountability, clarity of the university's mission and purpose in accordance with the government's mandate and the organizing body; responsibility, according to the university's statute covering position, function, duty, responsibility, and authority of each organization unit, the existence of job description for each employee and clear standard operating procedure; independence, merely for the university's purpose and benefit, not a bureaucracy representative; fairness, conducting for promoting employees and officials according to their competence and track record, implementing effective merit system in managing human resources; quality assurance is held through internal (SPM) and external (study program accreditation) quality assurance, lecturer profession certification, student's feedback, alumni tracking, and user survey; effectiveness and efficiency, held through long-term, middle (strategic plan) and annual (RKAT) planning system; non-profit, in the practice of all budgeting, the remaining of the activity is not distributed, it is reinvested to enhance the quality of university's development.

The principles of GUG are participation, transparency, accountability, responsiveness, independence, and fairness. The participation principle becomes important because basically, a university is a public service institution that needs support from the stakeholders. The responsiveness principle has a close correlation with the very fast changes and development of the environment. Therefore, the university must always be responsive to adjust its vision and mission. Accountability relates to structures of organization, function, system, management, and members of academicians, it must understand how effective and efficient the operation of the university is. Every staff and official in the university understands their obligation and rights, in managing the university, everything must be clear, to avoid conflict of interest. The independence principle is the keyword of the university's transformation towards an entrepreneurial university. To maintain this principle, universities must be creative and innovative. All university policy is taken merely for the interest of the academicians and the stakeholders, without any pressure or intervention from any parties. Therefore, the only partiality is for the interest of the university, which means that all efforts are aimed at the fulfillment of the university's vision, mission, and values.

Higher education governance is an important issue of policy in the 21st century (Blackman & Kennedy, 2009). Meanwhile, autonomy opens opportunities to enhance competitiveness. On the contrary, over-intervention through policy from any party will cause universities to have limited space to move. In the context of the implementation of the transparency principle, universities must be able to give adequate, accurate, and punctual information to all academicians and other stakeholders. All related stakeholders to the university must be well informed. Transparency in managing finance and all activities must be acknowledged by all related parties, and fully

supported by the stakeholders. In short, fairness can be defined as equal and non-biased treatment for fulfilling the rights and expectations of the stakeholders. The principle of fairness is expected to result in the right and wise management for all members of academicians, to achieve the university's vision and mission as well as the government's interest.

The observed approach to governance is intended to preserve the integrity of the traditional and organizational missions of Italian universities as cultural institutions, but in the meanwhile, it is more representative of stakeholders' interests and the importance of experience and ability in governing management efficiently; it may reduce agency costs and improve governance effectiveness (Lucianelli, 2013).

The monetary crisis has brought its own challenge, the lesser funding either from the government or the donor, so it encourages universities to be more creative in gaining funds and enhancing their ability to manage universities effectively and efficiently. The role of GUG will be more needed when the university has started to be able to commercialize its research findings.

Morris (2008) states that GUG implementation should be understood by the university, not only as an obligation but also as a need, by not ignoring the rights of other stakeholders. GUG components must be implemented continuously without ignoring one of the components because all components are related to each other. GUG implementation can prevent and detect authority fraud and violation of laws and regulations as stated in the research conducted by Halbouni et al. (2016). The implementation of GUG principles was caused by a decline in fraud behavior (Halbouni et al., 2016). Furthermore, GUG implementation must be controlled by a supervisory effectively.

The importance of GUG is valuable to manage an effective university. This guarantees the success of the university to achieve its mission, and in giving benefits for the economy, as well as for people's welfare. GUG effectiveness must be controlled by a supervisory organ established by the university, they are involved in strategic planning, meeting their strategic purpose and staying loyal to their mission, monitoring the effectiveness of various programs, giving supervision and ensuring fiscal integrity, recruiting, directing, and expanding trustees, preparing succession in university's leadership, evaluating the effectiveness of management and supervisory organ, ensuring academics integrity and student's learning, and promoting the university's image and place in the public eye.

Following the description above, generally, GUG principles are transparency, accountability, responsiveness, independence, fairness, and participation. The principle of participation becomes important because basically, the university is a public service institution that needs support from all stakeholders. The principle of responsiveness has a close correlation with so fast social and environmental changes and development, that universities should be always responsive to adjust their vision and mission. Implementation of GUG by the university has become a demand in achieving an entrepreneurial university. It has been adopted abundantly, but it has not been consequently implemented yet.

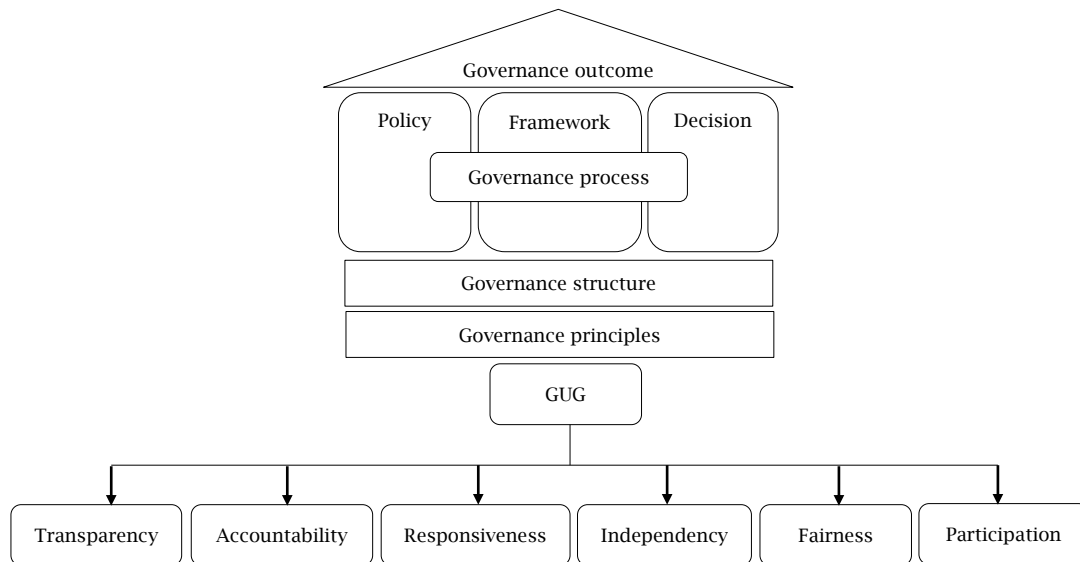
In terms of transparency implementation, the university must give adequate, accurate, and punctual information to all stakeholders. In other words, all related parties with the university, are well-informed. Transparency in program and activity management must be acknowledged by all related parties, in terms of gaining support from the stakeholders. Implementation of accountability in relation to organizational structure, function, system, and management, for the purpose that members of academicians can understand how effective and efficient the operation of the university is. Every staff and official in the university understands their obligation and rights, therefore, conflict of interest can be avoided. Responsive is management conformation in implementing healthy principles and applicable laws and regulations in order to respond to the dynamic of social and environmental aspects. Its principles completely pay attention to students' success and comply with the law, values, and culture. The principle of independence is the keyword of the university's transformation towards an entrepreneurial university. All university policies are taken merely for the interests of the academicians and stakeholders, without any intervention from any party, which means that all efforts are aimed at vision, mission, and values. Briefly, fairness can be described as an impartial and equal treatment to fulfill the rights and interests of the stakeholders. Fairness is expected to result in wise management for all academicians to achieve the university's vision and mission.

As an example, the implementation of GUG principles in UIN Syarif Hidayatullah Jakarta affects managerial performance (Amilin, 2016). GUG negatively affects the tendency of accounting fraud. It means that the higher the evaluation of GUG is, the lesser the tendency of accounting fraud will be (Ansori et al., 2018). The result of regression analysis shows a significant positive correlation among all variables, which emphasizes the hypothesis that GUG and management have a positive correlation (Aurangzeb & Asif, 2013). Simultaneously, there is a significant effect of GUG, internal audit effectiveness, and organizational commitment on budgeting participation. Partially, only GUG and organizational commitment have a significant effect on budgeting participation, while internal audit effectiveness does not have a significant effect on budgeting participation. There is a GUG significant effect, internal audit effectiveness, organizational commitment, and budgeting participation on managerial performance, either simultaneously or partially. The result shows that the governance indicator gives a strong contribution to enhancing the education effect, which then helps in compiling policy towards university internationalization (Zaman, 2015).

**4.1. Good university governance implementation in process of teaching and learning**

Good university governance (GUG) is measured through six indicators as seen in the Figure 1.

**Figure 1.** Governance house implementation model of good university governance



According to the survey and descriptive analysis, the variable of good university governance is presented in Table 1.

Table 1 shows that the overall average value of respondents' answers for the good university governance variable is 5.587. Specifically, the highest respondents' answers for the good university governance variable are "Governance process related

to finance management" by the value of 5.9. Meanwhile, the good university governance variable indicator that has the lowest value is "Academic values, ethics, and moral" with a value of 5.425. Overall, the standard deviation value average is 1.294, then, from each indicator, the standard deviation value is less than the overall value (mean).



**Table 1.** Descriptive statistics of good university governance variable

No.	Indicator	Code	Min	Max	Mean	SD
1.	Effective vision, mission, and goal	X1	1	7	5.600	1.336
2.	Academic values, ethics, and moral	X2	1	7	5.425	1.279
3.	Principle/fundamental	X3	1	7	5.325	1.328
4.	Governance structure related to finance management	X4	1	7	5.500	1.198
5.	Governance process related to finance management	X5	1	7	5.900	1.236
6.	Governance outcome related to finance management	X6	1	7	5.775	1.387
Overall average					5.587	1.294

Source: Processed primary data, 2021.

The result of value interpretation of all indicators shows GUG based on mean has a perception value of value 5 (good). Therefore, it can be derived that GUG implementation, by every university in the groups of PTNBH, PTN, and private universities that become respondents, agrees to be well implemented. GUG implementation can avoid conflicts of interest between researchers and the university. GUG implementation also gives clear direction, like what is wrong or right, what is allowed to be implemented, and what must not be implemented, as written in the University Code of Ethical Conduct.

#### 4.2. Research model evaluation

Research model evaluation includes two stages, measurement model evaluation, and structural model evaluation. Model evaluation analysis uses the PLS-SEM method with WarpPLS application version 7.0. Referring to Ghazali (2016), the algorithm method used in this research, for the outer model, uses mode A PLS, because the research indicator is reflective. The model inner method uses linear because the hypothesis is built

by linear assumption. The resampling method uses the Jackknife method, because the samples of this research are below 100, with as many as 40 respondents.

#### 4.3. Measurement model evaluation

Measurement model evaluation is aimed at evaluating the reliability and validity of latent variable formation indicators in this research, where conceptually, models of all variables in this research are measured by reflective indicators. According to Ghazali (2016), reliability and validity (outer model) measurement with a reflective variable by observing the values of:

- reliability indicator with loading factor higher than 0.7;
- reliability consistency internal with reliability composite value higher than 0.7;
- convergent validity with average variance extracted value (AVE) higher than 0.5;
- discriminant validity with AVE square root higher than correlation among constructs.

**Table 2.** Loading factor value of good university governance variable indicators

Variable	Code	Indicator	Loading factor
Good university governance	X1	Effective vision, mission, and goal	0.857
	X2	Academic values, ethics, moral	0.896
	X3	Principle/fundamental	0.842
	X4	Governance structure related to finance management	0.874
	X5	Governance process related to finance management	0.891
	X6	Governance outcome related to finance management	0.875

Source: Processed primary data, 2021.

**Table 3.** Value of AVE square root

Construct	AVE square root
Good university governance	0.873

According to the result of observation, several indicators on models that have a high correlation (>0.85) are gained, where they will be released from the construct measurement model, for example, governance structure related to finance management (X4), governance process related to finance management (X5), and governance outcome related to finance management (X6).

**Table 5.** Loading factor, composite reliability, and AVE research variable

Variable	Indicator	Loading factor	Reliability	AVE
Good university governance	Effective vision, mission, and goal (X1)	0.913	0.937	0.833
	Academic values, ethics, and moral (X2)	0.965		
	Principle/fundamental (X3)	0.856		

The output of the full collinearity variance inflation factor, VIF (after the indicator's reduction) is as in Table 4.

**Table 4.** The output of the full collinearity VIF

No.	Variable	Full collinearity VIF
1	Good university governance	4.333

Furthermore, the result is expected to gain indicator measurement model evaluation that fulfills criteria as fully presented in Table 5.

**Table 6.** Loading factor value of commercial research variable indicators

Variable	Code	Indicator	Loading factor
Commercial research	Y1	Financial strategy related to budget allocation for research	0.829
	Y2	Financial strategy related to research budget allocation per lecturer	0.802
	Y3	Related financial strategy amount of research funded by the industry for development	0.834
	Y4	Financial strategy related to funding sources	0.809
	Y5	Number of research collaborations	0.874
	Y6	Number of publications	0.808
	Y7	Number of publishers	0.666
	Y8	Amount of IPR	0.631
	Y9	Number of research products that have patents and have been sold to industry or related parties	0.809
	Y10	Number of international patents	0.805
	Y11	Financial strategy related to budget allocation for research	0.881
	Y12	Financial strategy related to research budget allocation per lecturer	0.897
	Y13	Financial strategy regarding the amount of research funded by the industry for development	0.838

Source: Processed primary data, 2021.

**Table 7.** Loading factor value of entrepreneurial university variable indicators

Variable	Code	Indicator	Loading factor
Entrepreneurial university	Z1	Entrepreneurial spirit and competencies	0.919
	Z2	Marketing competence	0.800
	Z3	Economic competence	0.834
	Z4	Financial competence	0.877
	Z5	Accounting competence	0.731
	Z6	Management competence	0.710
	Z7	Globalization competence	0.778
	Z8	Law competence	0.830
	Z9	Enterprise resource planning competence	0.702
	Z10	Information technology competence	0.845

Source: Processed primary data, 2021.

#### 4.3.1. Effect size test

The output effect size is the absolute value of the individual contribution of each predictor variable on the R-squared value of the criterion variable, the effect size shows the effect of the predictor variable from a practical point of view (Ghozali & Ratmono, 2013). Table 8 shows the results of the effect size test.

**Table 8.** Effect size test

Description path	Effect size
Good university governance → Commercial research	0.680
Good university governance → Entrepreneurial university	0.438
Commercial research → Entrepreneurial university	0.344

Source: Processed primary data, 2021.

Based on Table 8, the effect size value of the good university governance variable on commercial research is 0.680 ( $> 0.35$ ), indicating that it has an effect size in the large category. The value of the effect size of the good university governance variable on entrepreneurial university is 0.438 ( $> 0.35$ ) indicating that it has an effect size in the large category. Meanwhile, the effect size value of the commercial research variable on entrepreneurial university is 0.344 ( $0.15 < 0.344 < 0.35$ ), indicating that it has an effect size in the middle category.

#### 4.3.2. Significance test of effect between variables

From all variable relationships, it can be seen that the effect of the good university governance variable on commercial research produces the largest effect size of the other variable relationships. This indicates that the role of the variable good university governance on commercial research in the view of practitioners is very important.

This subsection describes the analysis of the significant relationship between the variables that will be used to answer the research questions and the hypotheses proposed in this study.

The results of the estimation of the relationship between constructs are presented in Table 9.

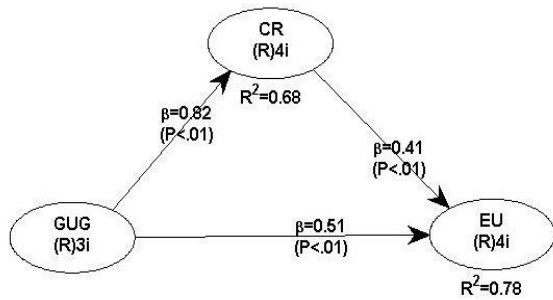
**Table 9.** Significance test of effect between variables

Description path	Path coefficient	p-value
Good university governance → Commercial research	0.825	$< 0.01$
Good university governance → Entrepreneurial university	0.514	$< 0.01$
Commercial research → Entrepreneurial university	0.412	$< 0.01$

Source: Processed primary data, 2021.

The results of the estimation of the significance of the relationship between variables can also be shown in Figure 2 and Figure A.1, Appendix.

Figure 2. Estimating relationships between variables in model path diagrams



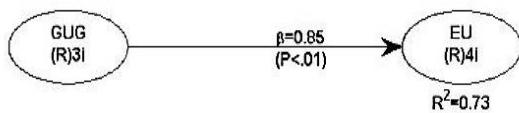
Based on Table 9 and Figure 2 it can be seen that all relationships between variables show a relationship that has a significant positive effect, including; the effect of good university governance on commercial research, the influence of good university governance on entrepreneurial universities, and the influence of commercial research on entrepreneurial university.

4.3.3. Mediation effect test results

This study requires a mediation test, namely the mediating role of commercial research on the effect of good university governance on entrepreneurial university. The mediation test procedure uses the procedure according to Baron and Kenny (1986).

Estimating the direct effect of good university governance (GUG) on entrepreneurial university (EU), where the estimated direct effect of 0.85 with a p-value < 0.01, is referred to as the path coefficient. The estimation results can be presented in Figure 3 below.

Figure 3. GUG effect evaluation on EU



GUG implemented by the university has become a demand towards entrepreneurial university. Many have adopted, but not yet implemented consequently. GUG implementation can be implemented either at the level of faculty or university. One of the accreditation standards is GUG implementation, and it must be reflected in the university accreditation assessment result. GUG principles have been widely known, and it is mandatory to be implemented by the university, but it is not practiced enough. The implementation of GUG principles in the procurement of human resources, which consists of transparency, accountability, responsibility, independence, equality, and fairness in the HR field, has been applied, both specifically in each work unit and generally in the University (Wuriyanti et al., 2020).

5. DISCUSSION

5.1. Good university governance implementation on commercial research

This research shows that a university’s autonomy and competition have a positive correlation with its output, either among the countries in Europe or the USA. Universities can produce more patents if they are more independent in facing more competition from private research universities.

Research activity is an activity that will determine how far the university contributes to the development of science and technology which can be used by people and industry. The arrangement of the research activity plan started since choosing the theme and partners, technology transfer formation to the industry, even until market penetration and profit gain for the university. This research commercialization certainly refers to GUG principles.

5.1.1. Good university governance supports commercial research

The developed hypothesis (H1) states that good university governance is able to support the improvement of commercial research in a professional manner. Based on the outputs in Table 9 and Figure 2, it can be seen that the good university governance variable has a significant positive effect on commercial research with a path coefficient value of 0.825 and a p-value < 0.01. Thus, these results support the hypothesis, it can be concluded that H1 is acceptable, and that good university governance has an effect on commercial research. This means that good university governance plays an effective role as a sign in carrying out commercial research.

5.1.2. Good university governance supports the transformation towards an entrepreneurial university

The developed hypothesis (H2) states that good university governance supports the transformation towards an entrepreneurial university. Based on the output in Table 9 and Figure 2, it can be seen that the good university governance variable has a significant positive effect on entrepreneurial university with a path coefficient value of 0.514 and a p-value < 0.01. Thus, these results support the hypothesis, it is concluded H2 can be accepted that good university governance has a positive effect on an entrepreneurial university, in the sense that the application of good university governance will influence the achievements of the entrepreneurial university.

5.1.3. Commercial research supports entrepreneurial university

The developed hypothesis (H3) that is built states that commercial research is able to support entrepreneurial university. Based on the outputs in Table 9 and Figure 2, it can be seen that commercial

research has a significant positive effect on entrepreneurial university with a path coefficient value of 0.412 and a p-value < 0.01. Thus, these results support the hypothesis, it can be concluded that *H3* is accepted, it is proven that commercial research has an effect on an entrepreneurial university. In other words, there is a very close relationship between commercial research and entrepreneurial university, that is why it is very strategic for universities to carry out research in collaboration with industry players to increase the value of mutual benefits for all parties involved, for the community, industry players, and universities.

## 6. CONCLUSION

University must be managed professionally to be able to transform into an entrepreneurial university by having the ability to finance its activity and development. The quality of the graduates is the output of a university that can be competitive, either domestically or overseas, accordingly, it is decent to be a world-class university. To achieve that predicate, the contribution of GUG implementation is crucial. By implementing GUG, a university can give service excellent to all academicians and stakeholders. From all references, it can be concluded that representative GUG principles are transparency, accountability, responsiveness, independence, fairness, and participation. According to a study on questionnaire answers, the result of the value interpretation of all GUG indicators shows a mean value of 5 by good perception value criteria. Therefore, it can be interpreted that in every university, a legal entity state university, state university, and private university that become the respondents, GUG implementation is agreed to be implemented consequently. GUG implementation can avoid a conflict of interest between the researcher's individual interest and that of the universities. GUG implementation also gives a clear direction, such as what is right or wrong, and what is allowed and not allowed to be implemented as written in the University's Code of Conduct.

The measurement of GUG indicators consists of effective vision, mission, and goal; academic values, ethics, and moral; principles; governance structure; governance process, and governance outcome of finance management. According to the observation, it is gained that several indicators in the models that have a high correlation (> 0.85) which is generated from the construct measurement model — governance structure related to finance management (X4), governance process related to finance management (X5), and governance outcome related to finance management (X6). From that result, it is expected to gain an indicator measurement model evaluation that meets the criteria of effective vision, mission, and goal (X1); academic values, ethics, and moral (X2); and principle/fundamental (X3). Estimation of GUG direct effect towards EU which result of direct effect estimation is 0.85, having p-value < 0.01.

GUG implementation on research activity begins when the choice of research theme and partners reaches technology transfer to the industry; even if it ends up in market penetration. For the university, this process should refer to GUG

principles, especially when related to accountable commercialization. In implementing the activities of public service, GUG signs need to be developed as a reference to optimize the benefit that is gained by the society or the university. The GUG-based service quality of the university, in fact, can be accounted for according to society's expectations. In this article, there is a limit on the number of samples, consequently, it has the potential to represent fewer universities in the eastern part of Indonesia. Therefore, in the future, further research related to GUG implementation in the eastern part of Indonesia is needed.

Refers to the conclusions above, these are some recommendations as follows. University should establish GUG principles according to the characters and business process of each university and university spin-off company. Universities should firmly separate between commercial and social service activities. Universities implement accountable research commercialization activities based on the GUG concept. GUG principles, in relation to accountable commercialization, should be formulated from the beginning of choosing a theme and partner appointment until the process of technology to the industry, even in terms of market penetration for generating the university's independence. The GUG implementation should become one of the accreditation standards and it is reflected in the result of the university's accreditation evaluation. So that GUG is implemented effectively and continuously, a supervisory organ is needed. Thus, if a deviation occurs, it can be controlled immediately. By having GUG principles, the university's activities will be more independent. University grows and develops research while staying consistent with its vision, mission, and strategic plan, transforming towards an entrepreneurial university based on the agreed GUG concept. The results of the interpretation of the values of all indicators show that GUG produces a good and acceptable average perceived value, interpreted that every tertiary institution has the same view of how important it is to implement GUG at the university. Universities believe that the implementation of commercial research through university spin-off companies based on GUG has a strong influence. Thus, it can be interpreted that all respondents of state universities with legal entities, state universities, and private universities agreed to carry out commercial research based on GUG.

Universities believe that the implementation of commercial research through a university spin-off company based on GUG exerts has a strong influence on the entrepreneurial university. The role of the GUG variable on commercial research in practitioners' views is very strategic in realizing entrepreneurial university. GUG is considered an important element of higher education to be able to anticipate, design, implement, monitor, and assess the effectiveness and efficiency of policies. Higher education implements GUG in order to produce qualified graduates, produce innovation through research, be able to independently manage funds in collaboration with industry, and be ready to compete globally. Commercial research through collaboration between universities and industry circles is needed to translate research results into

useful services or products while solving social and environmental problems. The development of science and technology is a driving force in making changes. The increasingly rapid development of knowledge and technology will accelerate the increase in the ability to produce and engineer products and services to meet the needs of society.

As a forum for commercial research activities, universities set up a university spin-off company which also refers to GUG. Universities diversify funding effectively and efficiently through professional commercial research carried out by university spin-off companies in collaboration with industry. The participation principle is important because higher education is a public service institution that requires the support of all stakeholders. Likewise, the principle of responsiveness is important because higher education institutions must always be responsive to the development of knowledge and the dynamics of society. Universities have not been able to grow and develop in a healthy and optimal manner because they are still managed as institutions that are not yet oriented towards creating financial value. The benefit of this research is to provide an overview of the higher education transformation model, in which universities and spin-off universities can implement

a GUG-based entrepreneurial university development strategy. As a novelty to increase global competitiveness, it is a prerequisite and necessity for higher education to transform into an entrepreneurial university by conducting applied research and commercializing research innovations by GUG-based university spin-off companies through collaboration with industry and society. This effort will create a source of funding to finance the development of higher education to become an entrepreneurial university in a sustainable manner, and run entrepreneurship programs to produce entrepreneurs and start-up companies.

The transformation built was the realization of an entrepreneurial university through GUG-based commercial research including higher education efforts to maximize the benefits of increasing higher education revenues coupled with creating benefits for so.

The research has several limitations, such as the respondents only 40 less than 100 which create a future area of investigation. We suggest conducting further research that could answer any others aspects of GUG for improving the performance of the university in fulfilling the development of community and industry demand.

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APPENDIX

Figure A.1. Multicollinearity indicator elimination result

