

## ANALYSIS OF THE EFFECTIVENESS OF COMMERCIALIZATION POLICY IN PRIVATE UNIVERSITIES IN INDONESIA

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### **Abstract**

*Indonesia is a developing country where the country's income still depends on natural resources. This encourages the Indonesian government to advance the country by improving the quality of human resources to support economic growth based on a knowledge base economy. The form of contribution to the country made by M University as one of the private universities in Indonesia is with its vision of becoming a research and entrepreneurial university and making commercialization policies through three institutions, namely PPM institutions, international cooperation institutions, and science techno park institutions as the end of downstream research. The effectiveness of commercialization policies is an important key to the success of private universities in Indonesia in achieving their vision. The approach of this study is descriptive qualitative where primary data sources come from internal and external sources who know the commercialization process and ecosystem. The result of this study is the information of a new entity that emerged, namely PT. XY is one of the research commercialization downstream institutions. The results of the effectiveness analysis are effective from the point of view of the commercialization policy objectives, namely becoming a Research and Entrepreneurial University. Based on 4 indicators, implementation is classified as effective, but the availability of resources related to the policy is still less effective. Judging from the commercialization process, the commercialization policy cannot be analyzed in terms of its effectiveness target, because policies are still changing, and programs are still adjusting to conditions and situations.*

**Keywords :** Policy, Commercialization of research, Effectiveness

### **1. INTRODUCTION**

Indonesia is one of the developing countries that still depends on natural resources. This dependence can be seen in the data from the Ministry of Finance, which noted that there was an increase in Indonesia's natural resource revenues in the oil and gas sector and oil and gas which grew by 57.55% and 69.36%, respectively (Dihni, 2022). There is no developed country that only relies on the natural resource sector, this encourages Indonesia to become a developed country by creating quality human resources in order to advance a knowledge-based economy where the country relies on innovation and creativity that creates ICT-based updates (BINUS, 2021). Government support in terms of increasing innovation, creativity and ICT-based renewal is contained in the Vision of the Ministry of Research, Technology and Higher Education in 2015 - 2019 which was followed by the issuance of 5 policies of the National Medium-Term Development Plan (RPJMN) 2015 - 2019 (improving quality, relevance, access, competitiveness and improving governance). Other support from the government with the issuance of Presidential

Regulation Number 106 of 2017 concerning science and technology areas and the establishment of the National Research and Innovation Agency (BRIN) in 2019.

Universities and Research Institutions have an important role in carrying out the support provided by the government through various policies or programs. For this reason, the direction of the development of Higher Education and Research Institutions from community expectations at the end is as an agent of economic development. In terms of research capabilities, universities are expected to become teaching universities, research universities, and entrepreneurial universities. Institutionally, it is expected to become an innovative research, Center for Excellence in Science and Technology (PUI) and is encouraged to become a science and Techno Park (STP). This is in line with the Strategic Plan for Private Universities in Indonesia to become a research and entrepreneurial university by 2023. To achieve this vision, the university established a research commercialization policy and various PPM institutions, international cooperation cooperation institutions and science techno park institutions as the downstream end of the M university research commercialization policy.

The research commercialization program or policy implemented by M University through various directorates is the key to the effectiveness of commercialization policies at the university. For this reason, researchers conducted research on policy analysis related to the effectiveness of commercialization policies at M university through science techno park institutions and the supporting ecosystem in it. Where this research will answer the formulation of problems from researchers related to what policies can encourage commercialization at M University in order to achieve the vision of becoming a research and entrepreneurial university.

## **2. OVERVIEW**

### **2.1 Entrepreneurial University**

Entrepreneurial University is how a university has a spirit of entrepreneurship that eventually gives birth to innovations that will make the university and its environment independent. Innovation in this case is applied to the dharma of higher education, namely research (Zulfa, 2016). According to the OECD Organization for Economic Co-operation and Development there are 7 criteria for a university to be said to be an Entrepreneurial University, here are the seven criteria (OECD, 2012) :

1. Leadership and Governance in place
2. Organizational, human and financial capacity
3. Entrepreneurial development in teaching and learning.
4. Entrepreneurial pathway in place
5. Relationship between university and industry in knowledge exchange
6. As an internationalization institution
7. The impact of Entrepreneurial University.

### **2.2 Commercialization of Research**

Commercialization of research is part of the downstream of research. According to the Minister of Research, Technology and Higher Education, Mohamad Nasir (in Astirin 2018) the meaning of downstream research itself is an implementation of research results that can be utilized by the community in various research matters. In this case, the results of research or research should not stop at reports, publications and patents, but research and research results must be commercialized in the form of products for the welfare of the wider community. The downstream process can be said to be a process to bring the results of innovation and research closer to its users (Astirin, 2018). According Breznitz (in Lasambouw et al., 2020) Commercialization is a mechanism process that converts science into a product or service in order to support the competitive advantage of an institution to encourage economic growth. In

general, commercialization can be defined as the process of introducing new products or methods produced through research or research to potential users (Lasambouw et al., 2020).

Commercialization of research in Indonesia has various governing policies such as laws, government regulations and presidential regulations such as the Law of the Republic of Indonesia number 18 of 2022 which regulates the national system of research, development and application of science and technology. Then Government Regulation of the Republic of Indonesia Number 20 of 2005 which regulates intellectual property related to technology transfer and the results of research and development activities carried out by universities and research and development institutions. Furthermore, Presidential Regulation of the Republic of Indonesia number 27 of 2013 which regulates the development of business incubators. And the last is Presidential Regulation of the Republic of Indonesia number 106 of 2017 related to science and technology areas.

### **2.3 Policy Effectiveness**

Effectiveness is a basic element in an organization or company in order to achieve predetermined organizational goals. This is an effectiveness point of view based on its success. In terms of achieving targets according to Hidayat (in Suwardana, 2018) effectiveness is a measure of how far the target is achieved in terms of quantity, quality and time. According to Gill. Mc. E (in Bormasa, 2022) effectiveness is an organizational achievement in achieving goals that have been set and can be achieved. The Implementation Theory put forward by Eugene Bardach where to measure effectiveness can be done through a comparison between policy design and implementation. There are several aspects that are considered in policy implementation theory such as institutional capacity, coordination between institutions, the role and support of the community, available resources (Bardach, 1977).

### **2.4 Macro Policy Design**

Macro policy design is one of the theories related to public policy written by Birkland where a policy design departs from an issue or problem why the policy must be made. In the 6 elements of policy design according to Birkland, it is explained that the problem or issue element is something that answers why the policy is formed based on problems or issues that arise or something that underlies the policy for the formation of the policy. From the element of policy objectives, it will explain what is the purpose of the policy formation. The third element is a causal model where this element will later answer what modelling is used to carry out the policy which will produce an output from the modelling. The next element is policy tools and instruments explaining what tools can be used to support the policy. The next element is the target which contains who runs and has an impact on the policy. And the last element is policy implementation which contains the form of the program to be implemented (Pradana et al., 2021).

## **3. RESEARCH METHODS**

Based on the research method, this research uses qualitative methods. Qualitative research is a technique that allows researchers to interpret a complex phenomenon that does not depend on numbers so that this research focuses on new findings or insights (Zikmund et al., 2013). This is supported by other opinions regarding qualitative research where data collection is guided by the facts found, so that from these facts a hypothesis or theory will be found. (Abdussamad, 2021). This research uses a descriptive research method where the research results are a description of objects, people, organizations, groups, or the environment (Zikmund et al., 2013). The target population is all groups of entities that have the same characteristics, where the target population in this study are people who know and carry out research commercialization policies at the university and off-campus parties who explore research commercialization (Zikmund et al.,

2013). The sampling technique used is non probability sampling with convenience sampling and judgment sampling approaches (Zikmund et al., 2013). The data collection method used is survey research with primary data collection carried out by direct communication with sources (Zikmund et al., 2013). Operational variables are the process of identifying the appropriate scale in the research concept and involved in the research process, where the operational variables of this study are the six elements of policy design and effectiveness which will be studied so that information is obtained from this and conclusions are drawn (Zikmund et al., 2013).

The research location is in Bandung, West Java, where there are private universities that have research commercialization policies. The main subjects of the research are institutions or entities within the university that implement downstream research commercialization policies. Data collection techniques in this study used structured and unstructured interview techniques. Primary data sources in this research were obtained through semi-structured interviews. Semi-structured interviews will produce in-depth information or in-depth interviews related to the phenomenon under study. The results of primary data are in the form of interview data from sources. Secondary sources in this research are obtained through literature studies related to research such as statistical data, published information, previous research data or documents related to research. In this study, the data analysis technique used the Miles and Huberman model where this model explores data continuously until the data becomes saturated (although many sources have been explored the research cannot be said to be complete). The sequence of data analysis starts from data collection, data reduction, data presentation and finally drawing conclusions.

#### **4. RESULTS AND DISCUSSION**

This research data was obtained by conducting in-depth interviews with five resource persons consisting of four internal resource persons from the Science Techno Park institution and one external resource person who is involved in the world of research commercialization. The questions given to the interviewees were based on the six elements of policy makers. From the data reduction of the interview results, three analysis results were obtained, namely the six elements of policy makers, the effectiveness of commercialization policies and Entrepreneurial University.

##### **4.1 Analysis of the Six Elements of policy Making**

Based on the results of the reduction data and secondary data, it is found that there are issues / problems (things that underlie the commercialization policy at M University are external factors in the form of encouragement from the government and factors from within the University to achieve its vision and mission. The purpose of the policy is to achieve the Vision and Mission of the University to become a Research and Entrepreneurial University and contribute to the nation for economic growth and prosperity. The causal models used in the policy are LPPM, international cooperation institutions and science techno park institutions. In this study, information was obtained on the existence of PT XY as one of the research commercialization downstream institutions that acted as the tip of the research commercialization downstream. Then the policy tools or instruments are in the form of foundation directives and rector decrees with persuasive policy delivery and the degree of automation through Science Techno Park institutions and PT. XY. PT XY is an old entity under the Foundation that was appointed as one of the units that help commercialize research. The existence of a new entity in the form of PT XY makes the role and positioning of the Science Techno Park institution with PT XY unclear because the rules that come down from the university foundation have not been issued. So until now, programs and policies will continue to undergo changes and adjustments to university

conditions. The target of the commercialization policy itself is all policy stakeholders, namely students, lecturers, the community, industry, and government. And the implementation of commercialization policies at this university with a mix approach, namely policy coordination from up down and bottom up. The following table analyses the six elements that make up private university policies in Indonesia:

Table 1. Six Elements That Make Up The Policy Of Private Universities In Indonesia (Author's Data)

<b>Six Elements of policy making</b>	
<b>Issues/Problems/Problems underlying the Policy</b>	External and Internal Factors of M University
<b>Purpose of Policy</b>	Achieving the Vision and Mission of M University and contributing to the nation for economic growth and prosperity
<b>Causal Model</b>	PPM institutions, international cooperation institutions and science techno park institutions and the new entity PT. XY
<b>Tools and Instruments</b>	Foundation directives and rector's decree with persuasive policy delivery and degree of automation through Science Techno Park and PT XY institutions.
<b>Policy Target</b>	all policy stakeholders (students, lecturers, community, industry, government)
<b>Implementation of Policy</b>	mix approach

#### 4.2 Analysis of Policy Effectiveness

The analysis of the effectiveness of commercialization policies is seen from three points of view, namely in terms of targets with the theory according to Hidayat, then in terms of policy implementation according to Eugene Bardach and in terms of achieving goals according to Gill. Mc. E. Based on the data obtained, the effectiveness of the policy in terms of targets cannot be analyzed until now due to the existence of a new policy, with the existence of a new entity, namely PT XY. As for other information, namely related to the availability of human resources and budget allocations, it is still lacking. For other indicators and aspects, it is classified as effective. The following table analyzes the results of policy effectiveness at M University :

Table 2. Policy Effectiveness Analysis of Private Universities in Indonesia (Data Processed by Researchers)

<b>Effectiveness of M University's Commercialization Policy</b>	
<b>Theory according to Hidayat</b>	
<b>Target</b>	Cannot be analyzed due to a new policy, with a new entity, PT XY.
<b>Theory according to Eugene Bardach</b>	
<b>Institution capacity</b>	Effective
<b>Coordination between</b>	Internally ineffective (new policy) externally

<b>institutions</b>	effective
<b>Peran dan dukungan kebijakan</b>	Effective
<b>Resources allocation</b>	Ineffective from Human resources and Budget
<b>Theory according to Gill. Mc. E</b>	
<b>Goal Achievement</b>	Effective (Vision goal of research and Entrepreneurial university achieved)

#### 4.3 Analysis of Entrepreneurial University

Analysis of Entrepreneurial University based on the theory according to the Organization for Economic Co-operation and Development (OECD) in 2012, a college or university can be said to be an Entrepreneurial University if the university meets 7 criteria. The following table analyzes Entrepreneurial University according to 7 criteria based on OECD :

Tabel 3. Seven criteria of Entrepreneurial University Private universities in Indonesia (Data processed by researchers)

<b>Entrepreneurial University Private universities in Indonesia based on 7 criteria according to OECD</b>	
<b>Existence of leadership and Governance</b>	Existing (there is governance of the commercialization ecosystem)
<b>Organizational capacity, human resources and funding</b>	Existing (has capacity)
<b>Entrepreneurial development in teaching and learning.</b>	Existing (there are various development programs)
<b>Entrepreneurial pathway</b>	Existing (there are various programs through science techno park institutions)
<b>Relationship between university and industry in knowledge exchange</b>	Existing (through several programs of science techno park institutions and international cooperation institutions)
<b>As an internationalization institution</b>	Existing (through international cooperation agencies)
<b>Impact of Entrepreneurial University.</b>	Existing (in the form of hazel air filter commercial products and the development of various other startups)

#### 4.4 Final Analysis Result

Based on the three analysis results above, the flow and chart related to the downstream commercialization policy at university M. The flow explains the overall state of the situation and the downstream conditions that exist within the university, the following flow chart of downstream private universities in Indonesia :

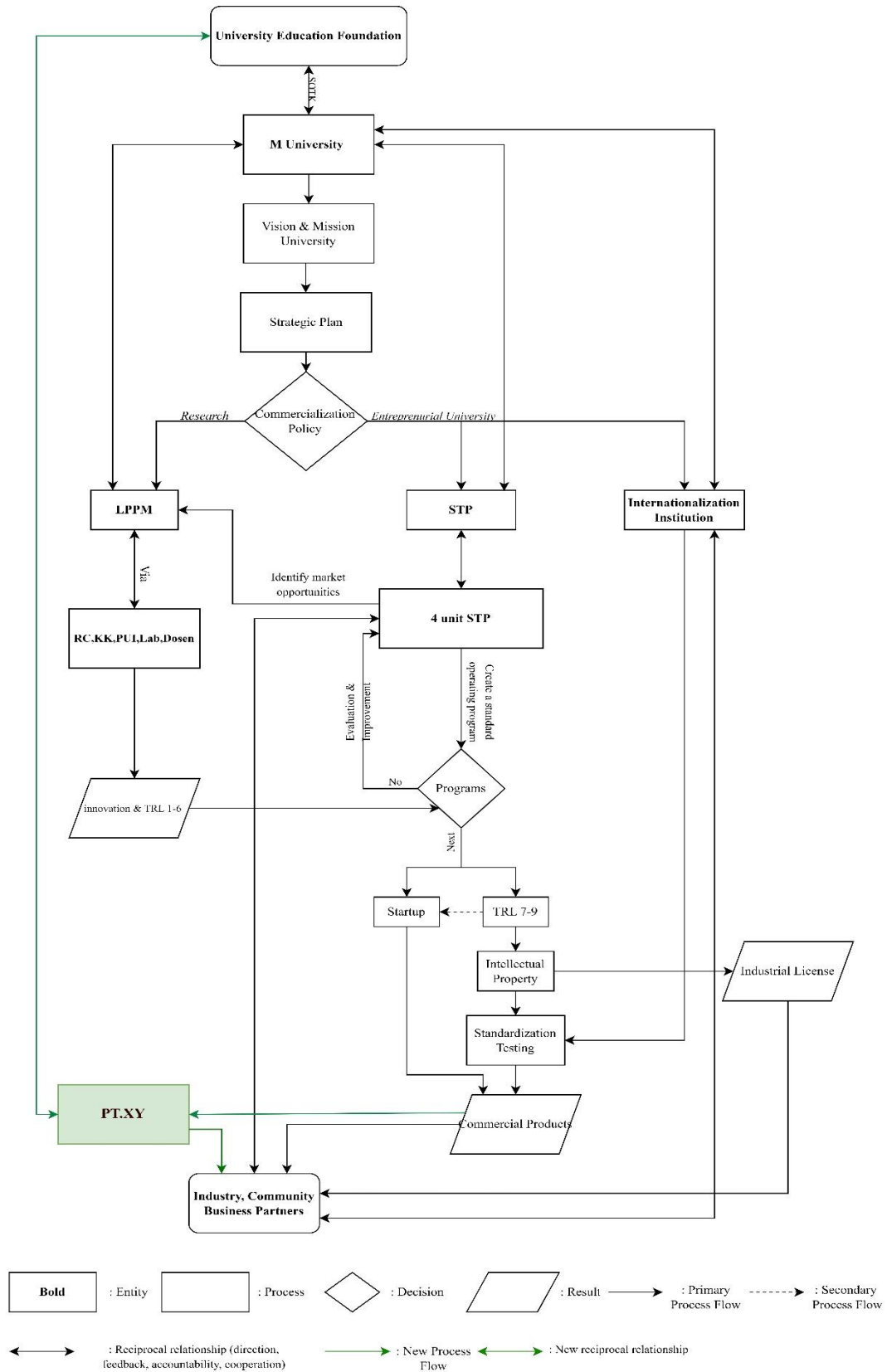


Figure 1. Flow of Commercialization Policy (Data Processed by Researchers)

## 5. CONCLUSION

Based on the theory according to Gill Mc. E in terms of objectives, it can be concluded that by achieving the main objective of making the private university commercialization policy in Indonesia, namely becoming a Research and Entrepreneurial University at the specified time according to the plan, namely in 2019-2023, the M University commercialization policy can be said to be Effective. Based on the theory according to Eugene Bardach, from the point of view of implementation, there are three indicators (institutional capacity, coordination between institutions externally, and support from the community or industry) that are effective and two ineffective indicators (coordination between institutions from an internal point of view and resource allocation). Based on the theory according to Hidayat, from the point of view of the target process of the commercialization policy at Universitas M, the effectiveness of the policy cannot be measured in terms of the implementation of the target policy process. This is because there are various policies and programs that are still changing and being adjusted until now (2023). One example of policy changes that occurred was the emergence of a new entity, PT XY, in April 2023 as a legal entity under the university foundation that helped the product commercialization process to industry.

### 5.1 Practical Advice

Practical advice is to improve aspects of M University's human resources related to their involvement in research commercialization policies with various programs or new policies that can encourage the commercialization process. The next suggestion is to increase the budget allocation for innovation and development which is currently still minimal and hampers the achievement of commercialization targets so that it is still a problem that must be resolved by increasing cooperation programs between industries. The last suggestion is the socialization of positioning or structural roles related to commercialization policies at M University by the university foundation.

### 5.2 Theoretical Advice

The suggestion from this research is that this research can be continued by further researchers at the next stage, namely examining policy effectiveness in terms of achieving the target of the M University commercialization policy.

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