

# Productivity and Downstream Intellectual Property as Results of Research and Community Service of Higher Education Post-Pandemic: Case Study Analysis at the State University of Jakarta

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## Abstract

*This writing aims to understand and see the potential results of research in the form intellectual property of higher education, especially at the State University of Jakarta (UNJ), both copyrights and patents whose products have been downstream so that the community can feel the benefits. In 2019, UNJ was ranked 59th in the ranking of Higher Education Clusters in Indonesia based on research performance and community service given by the Directorate General of Higher Education, Ministry of Education and Culture, and then in 2020, UNJ was ranked 20th. In 2021, UNJ received an "Excellent" (Unggul) Institutional Accreditation rating from BAN-PT. These achievements were obtained, among others, from the element of increasing results of research UNJ, especially those that can be protected by Intellectual Property Rights managed by the Center for Scientific Publications and Intellectual Property Rights at the Institute for Research and Community Service (LPPM) UNJ since 2019. In 2019 and 2020, LPPM UNJ also received the 1st rank award for the highest Copyright Recording from the Ministry of Law and Human Rights for the Research Institute category. In 2022, Post-Pandemic era, UNJ also won an award for the highest number of Top 10 Copyright Registrations in Indonesia in 2022 in the Higher Education Category. This writing was carried out using a qualitative approach through the case study research method which was sourced from primary data interviews with managers of Intellectual Property Rights at the Center for Scientific Publications and Intellectual Property Rights of LPPM UNJ, as well as secondary data found on UNJ's website and other official literature. The population of this study is only within the UNJ environment. The conclusions of potential research results at UNJ are currently most registered under the Copyright and Patent regime.*

Keywords: Intellectual Property Rights, the State University of Jakarta, UNJ.

## Introduction

In carrying out its duties and functions, higher education has three activities that are interrelated between one activity and another, called the Tridharma of Higher Education, namely educational activities, research, and community service. State University of Jakarta, hereinafter abbreviated as UNJ, develops these three activities which are expected to be able to realize UNJ's goals. A good synergy of the three activities will not

only be able to produce graduates who are highly competitive, skilled, adaptable to change, and ready to work, but also expected to produce research that is in line with the needs of industry and society. Relevant and high-quality education needs to be supported by research-based Tridharma. These activities are expected to further strengthen UNJ's role in improving the welfare and independence of the community through activity programs that unite each dharma to Tridharma UNJ.

One of the challenges faced by UNJ is the problem of very limited funding to carry out the duties and functions of higher education. UNJ as a State University (PTN) in the form of a Public Service Agency (BLU), has autonomy in financial management, also faces other consequences, for example UNJ must seek new sources of funding and not solely rely on the allocation of funds from the State Budget (APBN) and Regional Budget (APBD) from the government. To build financial support for the development and sustainability of an independent and superior university, UNJ must be more proactive in finding other sources of funding because of the increasingly limited allocation of funding from the government. UNJ focuses on a financial perspective by ensuring the availability of UNJ revenues sourced from sources other than the APBN and APBD or Non-Education Fee (Non-BP) revenues and also the implementation of cost efficiency by prioritizing important and strategic impact expenditures. A balanced budget allocation between Tridharma activities of higher education with expenditure and infrastructure facilities is also a challenge that must be faced in terms of funding.

On the other hand, UNJ has many physical and intellectual assets, including Intellectual Property that can be empowered. These valuable assets if successfully managed and utilized properly, for example through partnerships and non-academic collaboration between UNJ, government, and the private sector according to the Triple Helix Model of Innovation according to Etzkowitz and Leydesdorff (1995) will be able to increase UNJ's income. This is an effort to make Intellectual Property as a result of research conducted by UNJ lecturers or researchers to become a source of additional income for UNJ academics. The hope is that the greater the amount of Intellectual Property produced by UNJ, of course, the more income that can be obtained for UNJ academics, especially for lecturers and researchers. UNJ academicians show great potential to produce research products in the form of Intellectual Property in addition to scientific publications. For example, in Figure 1 below, there is a significant increase in the number of Copyright registrations in the pre-Covid-19 era. In 2016 as many as 6 pieces were

registered, and in 2017 it rose to 169 pieces that had been registered, while in 2018 it increased to 398 Copyrights that had been registered with the Directorate General of Intellectual Property, Ministry of Law and Human Rights of the Republic of Indonesia

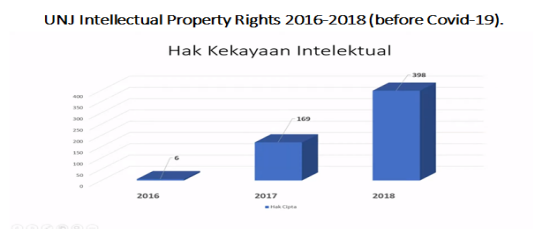


Figure 1. UNJ IPRs 2016-2018 (before Covid-19 era)

Registration of Intellectual Property owned by UNJ academicians is carried out by the UNJ Intellectual Property Governance/Management Implementation Unit called the UNJ Research and Community Service Institute (LPPM) which was established in 2016. In charge of organizing and implementing research and community service activities. In it there is a Coordinator, the Center for Scientific Publications and Intellectual Property Rights Unit.

## Literature Review

From several scientific writings in scientific journals, both national and international, related to Intellectual Property governance in higher education, there are several scientific writings as below that still focus more on understanding the importance of Intellectual Property and its management which is simple and still needs to be developed. Research conducted by Marcus Holgersson and Lise Aaboen (2019) in their article entitled Intellectual Property Management in Technology Transfer Offices: From Appropriation to Utilization shows that this research is about technology transfer institutions as implementers of Intellectual Property governance. Researchers suggest that all research results should be oriented towards Intellectual Property. In addition, research on technology transfer institutions and their governance focuses on product efficiency, and increasing the output of novelty of research results in the form of Intellectual Property, which is measured in the number of

Intellectual Property, licenses granted, and spin-offs produced. The researcher presents an understanding of the relationship between Intellectual Property governance and technology transfer institutions in higher education. Intellectual property governance is important because the utilization of research results will have an impact on the competitiveness of businesses based on science and technology or intellectual property.

In addition, Jing Zhou and Juan Du (2016) in their article entitled *Research on the Relevant Issues of Intellectual Property Management in Colleges and Universities*, as the main strength of universities in China is innovation and novelty to science and technology through intellectual property. Universities in China are increasingly paying attention to the importance of Intellectual Property, especially since the number of applications for Intellectual Property, especially patents, is increasing from year to year. However, the governance of Intellectual Property of universities in China is still weak because the governance system is not perfect and still simple. Therefore, strengthening the governance of Intellectual Property in higher education is an urgent problem that must be solved.

Another article entitled *Intellectual Property Management: European Universities Experience* by A. Yu. Kalinin and Yu. V. Nechepurenko (2020) said that a comparative analysis of policies in the field of university Intellectual Property in various leading European countries, especially Switzerland, the UK, and the Netherlands. As a result of comparisons in several European countries, the main elements of Intellectual Property policies were identified in one university policy document, especially regarding policy objectives, procedures for determining who are copyright holders and owners, academic community rights to Intellectual Property, incentives to use Intellectual Property, and governance implementing structures responsible for Intellectual Property governance in higher education. College policies take into account the uniqueness and traditions in each college. It was revealed that each college has its own approach towards

material incentives for the creation and use of Intellectual Property. In addition, colleges do not claim Intellectual Property created by students.

Xi Yu (2017) in his article entitled *University Intellectual Property Management System Design and Functional Study* said that the reform of industrial society began and stepped forward to society in the current era of science and technology-based economy. With the development of character and science and technology, the thought of developing Intellectual Property governance, by looking at the importance of protecting the results of science and technology research that produces Intellectual Property. However, universities are a source of innovative science and technology, but still have weaknesses in Intellectual Property governance. It is recommended that action be taken to anticipate problems and improve the Intellectual Property governance system of universities in China.

Some domestic authors include Niru Anita Sunaga (2017) who wrote about the *Active Role of Intellectual Property Centers in the Higher Education Environment* by describing that Intellectual Property is a very valuable asset, for which it needs protection. Intellectual property protection is no longer a matter of one country alone, but has become a matter of the world community. Indonesia as one of the countries that has a very strong commitment to the protection of Intellectual Property, has long implemented it by being actively involved in several international meetings both regionally and internationally. Although various regulations governing the field of Intellectual Property have been established and enforced in Indonesia, there are still many problems or violations of Intellectual Property. These problems are influenced by various factors, including those related to legal structure, legal substance, legal culture and bureaucratic apparatus. One sector that is closely related to the protection of intellectual property is the education sector, including universities. Universities really need Intellectual Property centers. However, Intellectual Property Centers in universities in Indonesia are still not running well.

Another article entitled Intellectual Property in a Legal Perspective and Its Benefits to Society written by Wiwin W Windiantina, Purgito Purgito, I Made Dermawan, Diah Irianti Permanasari, and Dauman (2022) reveals that Intellectual Property is a private right. Inventors and owners of Intellectual Property, can determine themselves to register (intellectual) works. Because the purpose of counseling, especially in the field of popularization of Intellectual Property conducted by universities is to carry out the Tridharma of higher education through community service activities. Intellectual property in general relates to the protection of the application of ideas, data and information that have actual economic value and is a system of providing legal protection for several types of intellectual works ranging from traditional knowledge to computer programs in today's digital business era.

The author argues that in order for university research results that have obtained Intellectual Property to be useful, it is necessary to conduct follow-up research on the development of university Intellectual Property governance towards the utilization of research results through downstreaming. Downstreaming is the implementation of research results in various ways, so that the community can also enjoy the results (Mohamad Nasir, 2015). Research results in the form of Intellectual Property should not only stop in the form of research reports, publications, and patents, but must become tangible products that can be downstreamed and enjoyed for the welfare of society. Downstreaming is the process of bringing research results and innovations closer to their users. The goal is none other than to expand the benefits and impact of research results conducted by universities, especially at UNJ as a university that has a very good reputation in the community)

## **Method**

### *Setting and Participant*

This research was conducted at UNJ, specifically at LPPM UNJ. Initial data collection has started since August 2023. The selection of UNJ was based on the consideration that UNJ is one of the oldest

universities in Indonesia, as a spin-off of the University of Indonesia. In addition, UNJ is one of the major universities located in Jakarta, the capital of Indonesia. which is in the form of PTN BLU.

This research uses a qualitative research approach with the Case Study method. In this study, researchers conducted research using the Observational Case Studies method. Case Studies here are usually focused on a single organization, such as schools or universities, such as UNJ. Researchers narrowed the focus of this research with Case Studies by examining only one part of the organization / institution that implements Intellectual Property governance. Part of the organization is LPPM UNJ which conducts Intellectual Property management at UNJ. A group of people/employees in the organization who interact the most and become the focus of the special group under study, so the researcher is very focused on the special group that becomes the object of his research.

### *Data Collection*

The qualitative case study research process starts from planning, including determining the object of research, implementing action, observing, collecting, processing research data, and evaluating (observation and evaluation), concluding research results, reflecting, and so on until the expected improvement or refinement can be achieved, until finally the writing of this research report is compiled.

## **Result and Discussion**

As a state university, before becoming UNJ, in 1964, the merger of several educational institutions, namely the Faculty of Teacher Training and Education, the University of Indonesia, and the Institute for Teacher Education. Then, to become the Jakarta Institute for Teacher Training and Education (IKIP) Jakarta. In 1999, the transformation of IKIP Jakarta into the State University of Jakarta (UNJ). Currently UNJ has 8 faculties and 74 study programs, with a total number of students around 40,000. UNJ always strives to become one of the leading research universities or academic institutions in Indonesia. As a research

university, various efforts have been made to obtain satisfactory results, especially those related to the field of discovery and development of research results, as well as knowledge diffusion, both regionally and globally. In addition, UNJ has also deepened its commitment to academic development and research activities, as well as community service in scientific disciplines contained in various study programs, departments, and faculties available at UNJ.

UNJ consistently continues to strengthen, develop and utilize the Tridharma of Higher Education in solving problems and challenges at the national and global levels. Descriptions related to the stages in achieving the objectives of the Tridharma of UNJ are outlined in the planning program in each Tridharma field.

#### 1. Education

The structure of the education program is flexible and in line with the goals of advanced and dignified Indonesian human development to produce graduates who are resilient, independent, and able to adapt to changes that occur and are expected to become leaders in their environment at local, national and international levels. The education program, which includes undergraduate, postgraduate, professional and vocational programs, prepares students who are able to understand various sciences and skills and easily adapt to their environment. Scientific hybridity is realized through academic integration based on inter, multi, and or trans-disciplinary education to contribute to the advancement of basic sciences.

The development of UNJ in the academic field is managed with an international standard academic management and quality assurance system, and is based on the principles of credibility, integrity, accountability, transparency, and fairness. Development of teaching and learning process methods based on Student Center Learning and e-learning. In this case, the learning process emphasizes a culture of independent learning. As a support, learning resources can be transformed into digital form, for example e-books, links, articles, and can be widely accessed. Other forms include regular workshops, organized in relation to the development and practical solutions for

utilization in industry and society. Open education e-learning is used to serve education to those with limited access.

#### 2. Research and Innovation

Development of quality research supported by quality research planning and management, as well as allocation of research funding that adheres to the principle of budget autonomy. Development of science that is up-to-date, innovative, appropriate and produces breakthrough thinking in the form of Intellectual Property. Research output of Intellectual values (inventions and innovations) produced by the academic community, and can be applied industrially for community use. Research outputs are Scientific Articles, Books, Journals and Scientific Publications/Proceedings, Innovation Products/Processes, Prototypes, and Intellectual Property Rights (Copyrights, and Industrial Rights: a. Marks, b. Geographical Indications, c. Trade Secrets, d. Protection of Plant Varieties Right, c. Trade Secrets, d. Trade Secrets, and d. Protection of Plant Varieties Right. Protection of Plant Varieties Right, e. Patents, f. Integrated Circuit, g. Industrial Design, h. Protection of Unfair Business Competition. UNJ through the research management at the Community Service Institute (LPPM) has a lot of research output.

#### 3. Community Service

Development of community service that is directed to contribute to solving the problems of society and the nation. Development of outreach programs, among others through e-learning and mentoring that include institutions at UNJ, lecturers and students through formal and informal education programs to go directly into the community to address the problems and issues of society and the nation, especially at the local level.

Comparison of UNJ Tridharma Planning Target Achievement Program before and after Covid-19.

UNJ/LPPM Strategic Program 2019 (before Covid-19).

1. Creating a Business Incubator to downstream research results to industrial partners, government and society to utilize

research products and UNJ Intellectual Property Rights.

2. Giving awards to the UNJ Academic Community who excellence person, especially those who obtain Intellectual Property Rights.
3. Obtain the best higher education accreditation, both nationally and internationally.

UNJ/LPPM Strategic Program 2022 (Post COVID-19).

1. Transferring the status of State Universities-Public Service Agencies (PTN-BLU) to State Universities-Legal Entities (PTN-BH) to provide more freedom for activities, especially in the fields of academics, governance and finance.
2. Establishment of a Center of Excellence for Science and Technology, as Development Centers for:
  - a. Digital Media
  - b. e-Assessment
  - c. Science, Technology, Engineering, Art, and Mathematics (STEAM) Education
  - d. Waste Processing Technology
  - e. Advanced Materials
  - f. Learning Robot
  - g. Cosmetic
  - h. Pathogenic Bacterial Detection Technology
  - i. Sports Technology
  - j. Sports Health Nutrition
  - k. Educational Tourism

Downstreaming Research Results and Achievements of UNJ in 2022 (Post Covid-19).

1. Downstreaming UNJ Research Results:
  - a. Nurse robot, to assist nurses in administering medication
  - b. Mobile learning, for learning
  - c. Food poisoning bacteria detection tool
  - d. Water flushing tank technology
  - e. Natural cosmetics
  - f. Cardiac and Pulmonary Resuscitation (in partnership with PT Mandiri Jaya Medika)
  - g. Educational Digital Media (in partnership with EduraTV)
2. Partnership exploration was carried out with several companies, including Pusdokes Polri Headquarters, Dexa Medika, PT Setara Bio

Science, PT Kimia Farma, PT Satu Laboratorika Utama.

3. Achievements:
  - a. The Outstanding student
  - b. Get AQAS (Agency for Quality Assurance through Accreditation of Study Program)
  - c. Ranked 6th best PTN in Indonesia according to the Scimago Institutions Ranking In 2019, UNJ was ranked 59th in the ranking of Higher Education Clusters in Indonesia based on research performance and community service given by the Directorate General of Higher Education, Ministry of Education and Culture, and then in 2020, UNJ was ranked 20th.

In 2021, UNJ received an "Excellent" (Unggul) Institutional Accreditation rating from BAN-PT. These achievements were obtained, among others, from the element of increasing results of research UNJ, especially those that can be protected by Intellectual Property Rights managed by the Center for Scientific Publications and Intellectual Property Rights at the LPPM UNJ since 2019. In 2019 and 2020, LPPM UNJ also received the 1st rank award for the highest Copyright Recording from the Ministry of Law and Human Rights for the Research Institute category.

UNJ Intellectual Property Rights 2020  
(Copy Rights Registered).

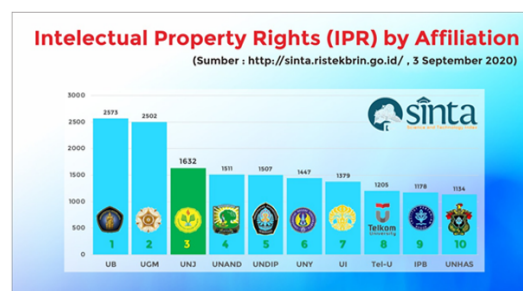


Figure 2. UNJ Copy Rights Registered 2020

In 2022, Post-Pandemic era, UNJ also won an award for the highest number of Top 10 Copyright Registrations in Indonesia in 2022 in the Higher Education Category.

## Conclusion

The key to UNJ/LPPM's success in implementing the Tridharma of Higher Education (Post Covid-19) Achieving strategic program targets is carried out through:

- a. Focus on research and establishing a Center of Excellence in the fields of health, cosmetics, technology, digital and robotics to support current and post-Covid-19 needs.
- b. Improving work programs and governance through e-Fine, leadership and bureaucracy, entrepreneurship, academic reputation, superior human resources, partnerships, infrastructure and assets (including IPR).
- c. Utilization of Information Technology in carrying out communications and information, and transactions.
- d. Organizing annual business gathering activities through UNJ Research Expo and LPPM Award activities on an ongoing basis.

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