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IMPLEMENTATION OF COLLABORATIVE GOVERNANCE IN MANAGING BRIN'S RESEARCH AND INNOVATION FUNDING TO PROMOTE THE STRENGTHENING OF INDONESIA'S RESEARCH ECOSYSTEM

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ABSTRACT

The study aims to provide an overview of the implementation of the funding scheme for research and innovation, as well as the involvement of stakeholders in the collaborative development of the research ecosystem and innovation. The study uses Ansell and Gash's collaborative governance theory, identifying stakeholders and analyzing stakeholder roles based on power and interests. (interest). The study employs descriptive research methods and qualitative data collection techniques. Data acquisition entails interviews, observations, and documentation from informants who are knowledgeable about these research issues. The findings demonstrate the fulfillment of Ansell and Gash's collaborative elements. Stakeholders in the research and innovation funding program consist of primary stakeholders, key stakeholders, and secondary stakeholders. The management of research and innovation funding involves a mapping of stakeholders, each with their own unique influences and interests. Stakeholders in the research and innovation funding program consist of primary stakeholders, key stakeholders, and secondary stakeholders. Key players include the Deputy for Research Facilitation and Innovation and the Deputy for Utilization Research and Innovation. Subjects that receive research and innovation funding are the Center for Research Collaboration and startups. Researchers from universities and research organizations wield significant influence as contest setters. The crowd includes the Deputy for Infrastructure Research and Innovation, the Directorate of Talent Management, the Inspectorate, and industry and company partners.

KEYWORDS *National Research and Innovation Agency; Collaborative Governance; Funding; Stakeholders.*

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INTRODUCTION

The abundant potential of Indonesia's natural resources has advantages and peculiarities that are not owned by other countries. This potential is the basic capital for Indonesia to improve the economy and welfare of the community through the creation and increase of added value from the management of these natural resources. In an effort to improve the economy and welfare of the community, the role of research and innovation development is very important as a driver of the creation and increase of added value in order to produce products that can increase national competitiveness. In order to be more focused, the *refocusing* and consolidation of research institutions in the context of efficiency and effectiveness of science and technology resources (human, infrastructure, budget) is one of the Government's top priorities.

Dedication to the nation's progress is seen through the allocation of considerable research and development funds. According to projections by the R&D World team, $2.476 trillion will be invested worldwide in research and development efforts by 2022. This amount reflects a significant increase of 5.43% from the $2.348 trillion spent on research in the previous year (Santika, 2023).

The UNESCO *Institute for Statistics* released a report in August 2020 detailing the percentage of research budget allocated to GDP in various countries. According to the report, Indonesia had a research budget to GDP ratio of 0.23% in 2018, much lower than the global average of 1.79%. In contrast, South Korea had the highest research budget to GDP ratio at 4.53%.

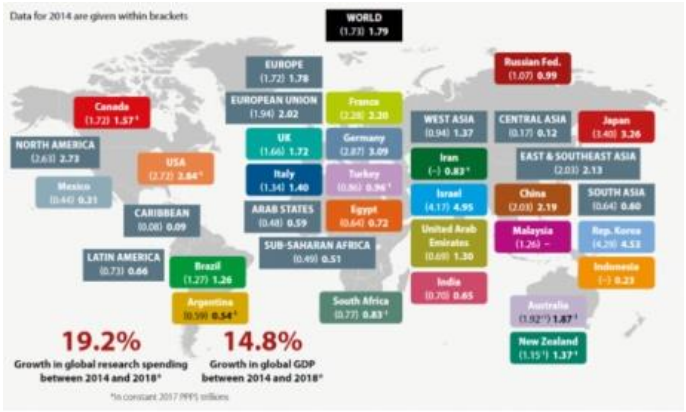

Figure 1 Data on Research Budget to GDP Ratio in Various Countries
Source: allea.org

In an official announcement in 2023, the Head of BRIN, Laksana Tri Handoko, revealed that the ideal research budget size should be 1% of a country's GDP. This is the standard set by UNESCO and the World Bank. Based on data from the Central

Statistics Agency (BPS), Indonesia's GDP at current prices reached IDR 19.58 quadrillion in 2022 (Purnama, 2023). Referring to the ideal research budget for Indonesia according to the World Bank and UNESCO, research funding should have reached IDR 195.8 trillion last year. BRIN, as the only government research institute, received a government budget of IDR 6.38 trillion for research and innovation in 2023. The total budget is used for personnel and operational expenditure of IDR 4.05 trillion, equivalent to 64 percent, to pay the salaries of 15,000 BRIN employees, and research infrastructure expenditure of IDR 2.33 trillion, equivalent to 36 percent. According to the World Bank's definition, research expenditure includes all components, including personnel expenditure. Personnel expenditure takes up the largest portion of the research budget because excellent human resources are a key component in conducting national research and innovation.

National research expenditure includes the total research expenditure made by the government, higher education and business sectors, totaling IDR 17.7 trillion (Rizal et al., 2023). The following table shows that the government sector still dominates the proportion of research expenditure, accounting for 66 percent of aggregate national research expenditure.

Table 1 Distribution, Percentage of National Research Expenditure, and Ratio of National Research Expenditure to GDP by Sector in 2022

No.	Sector	Research Expenditure (IDR)	Percent (%)	Percent of GDP (%)
1	Government (BRIN, local government, and LPDP) 1)	11.743.096.134.752	66	0,06
2	Higher Education 2)	3.029.724.677.000	17	0,02
3	Business 3)	2.963.369.254.279	17	0,02
	Total	17.736.190.066.031	100	0,1

Source: (Rizal et al, 2023)

1) BRIN (2022), Ministry of Home Affairs (2022), and LPDP Financial Report (2022)
2) Kemendikbudristek (2022)
3) Processed from BRIN's Research Institution Registration System (SeBaRis), 2023; Indonesia Stock Exchange (IDX), 2023; and Survey of Medium and Medium Industries, BPS (2022).

Indonesia's R&D spending is still dominated by government spending, which is in contrast to middle-income countries, where the contribution of private R&D spending is high. The current dominance of research involvement in Indonesia by the government, compared to the role of the private sector, is inversely proportional to global research conditions. For this reason, the Indonesian government is trying to encourage an increase in non-governmental or private funding sources that can be obtained from business entities and the community.

BRIN recognizes the importance of providing assistance to all parties participating in the creation of a research and innovation ecosystem, and fostering connectivity in research and innovation in science and technology with collaborators. As a key facilitator, BRIN has extensive human resources and infrastructure, so that the national research ecosystem can be enhanced and optimized through improved coordination and engagement of stakeholders from various sectors, both domestic and international. BRIN aims to change the composition of private sector involvement in research in Indonesia. This starts with initiating schemes that offer funding and facilitation.

Since 2021 BRIN has opened seven research and innovation funding schemes, including 1. BRIN's National Research Priority (PRN) *Flagship in* 2022-2024, 2. Research-Based Start-up Company Funding, 3. Screen Day Facilitation in 2022 - 2024, 4. Research Funding for Handling *Corona Virus Disease* 2019 (Covid-19, 5. Research Collaboration Center Facilitation, 6. Expedition and Exploration Funding in 2022 - 2024, and 7. Health Innovation Product Testing Facilitation. In 2022, two new funding schemes have been added, namely 1. Health Innovation Product Testing and 2. Research and Innovation for Advanced Indonesia. All of these funding and facilitation schemes are not just for funding research activities for researchers in BRIN, but are also open and accessible to all parties on a competitive basis. This research focuses on research and innovation funding facilitation that comes from BRIN's DIPA APBN, where there are 2 (two) Funding, namely the Research Collaboration Center and Research-Based Start-up Companies.

Arrozaaq (2018) conducted research on collaboration between stakeholders in the development of minapolitan areas in Sidoarjo Regency, in the study showed a strong partnership between stakeholders. The process begins with the establishment of shared principles, shared motivation, and collective capacity building. David Saputra (2018) This research focuses on *Collaborative Governance* in urban spatial planning, which combines ideas from Ansell and Gash (2007) and Mulyandari (2011). Facilitative leadership is seen as a key factor in encouraging participation.

Furthermore, Nanang Haryono (2012) conducted research on building public sector collaboration networks. In his research, cooperation between the government, civil society, and the private sector is a gradual process that aims to increase the effectiveness of the government in implementing public policies and services. *Collaborative governance is* becoming increasingly important in the modern era. By involving all stakeholders in the decision-making process, including government, civil society and the private sector, a more inclusive and egalitarian approach to governance can be achieved, which ultimately prioritizes the needs and interests of society as a whole.

Berliandaldo, Mahardhika, Achmad Chodiq, and Driszal Fryantoni (2021) in their research on collaboration and synergy between *stakeholders* found the identification of stakeholders into two different categories, namely primary and secondary stakeholders. The *stakeholders are* divided into four categories of role analysis based on importance and influence, namely as *subjects, as key* players, as

crowd, and as supporters (*Contest Setters)*. Other research proves that there are roles of *stakeholders* grouped into four, namely *policy creator,* coordinator, facilitator, and implementor, in BUMDES Management in Semarang Regency (Case Study of Bumdes Mitra Sejahtera Mendongan Village, Sumowono Subdistrict) as mentioned by Nurfakhirah et al. (2021).

Ridwan Purnama & Sulastri (2014) in their research stated that stakeholders are all parties affected, both positively and negatively, by a policy. Stakeholder participation can be an indicator of accountability, transparency and participation. Participation is a process that involves stakeholders to influence and control the course of a series of policy formulations that affect them. Thus, each actor will have a different level of involvement depending on its weight. The weight in question is the level of interest of the relevant stakeholders towards decision makers and the strength of their influence on the policy formulation process.

Elih Dalilah & Fitrah Pratama (2019) in their research on the problems and formulation of improvements in the management of research funds in Indonesia, mentioned several things, namely (1) The lack of specific guidelines that outline what is meant by a research budget, where research funds come from, how they can be used, how their use can be tracked, and what expenses are allowed or prohibited in the research budget. This lack of clarity contributes to the challenge of effectively managing and utilizing research funds. (2) One of the major challenges in effectively managing research budgets is the lack of comprehensive guidelines on definitions, sources, utilization mechanisms, monitoring patterns, and components of research and development (R&D) expenditure.

Departing from the previous research that has been mapped above, there is an opportunity to fill the research void regarding the governance of research funding and innovation in terms of *collaborative governance*. The novelty of the current research compared to previous studies is that researchers will present an overview of the implementation of research and innovation funding schemes and the role of *stakeholder* involvement in collaborative research and innovation ecosystem formation in Indonesia. This research has significant differences, in addition to the topic of research funding and innovation raised, another difference is in the research locus conducted at the National Research and Innovation Agency.

This study aims to provide an overview of the implementation of research and innovation funding schemes towards strengthening the research and innovation ecosystem in Indonesia. It also looks at the involvement of *stakeholders in* the collaborative formation of the research and innovation ecosystem. The results of the study are expected to be a recommendation to the BRIN government, especially in making policies related to the collaboration of research and innovation funding schemes in Indonesia.

Theoretical Review

Based on the theories that have been reviewed by researchers, the main theory that will be used in this research is the theory of *collaborative governance* proposed

by Ansell and Gash (2008). Researchers chose this theory because there is a match between the conditions or variables in the research topic and the concepts in the theory, namely the involvement of government and non-government actors in making a formal decision or policy, in this case regarding research funding and innovation policies. In addition to using the concepts of Ansell and Gash's theory, researchers also identified the stakeholders involved and analyzed the role of stakeholders based on their influence (*power*) and interests (*interest*).

Collaborative governance is a regulatory approach that is currently used and developed to bring together various stakeholders in a common forum with public institutions to engage in formal decision-making processes based on consensus (Ansell & Gash, 2008). The model consists of four main factors: initial conditions, institutional structure, leadership, and collaboration process. Each of these factors contains various sub-elements. The collaborative process element is at the core of the model, with the initial conditions, institutional structure and leadership factors playing an important role in shaping the overall collaborative process.

According to Freeman's perspective, stakeholders are usually identified based on their level of power and interest in a particular issue. In contrast, Grimble and Wellard emphasize the importance of stakeholders' influential positions and the impact they have. These various perspectives offer different criteria for determining which stakeholders are involved in a given situation (Astuti, 2020). One way to examine stakeholder involvement is to utilize a stakeholder role matrix. After the initial steps in stakeholder analysis, the next stage involves creating a visual representation that illustrates the relationship between the level of influence or power and the level of interest of each stakeholder. The *power versus interest grids* matrix shows where a stakeholder's interest lies in the organization and the stakeholder's power to influence the organization, now or in the future.

RESEARCH METHOD

This research uses descriptive research methods to provide a comprehensive and detailed explanation of the complexity of the answers that arise. This research aims to describe and explain the implementation of funding schemes and strengthening the research and innovation ecosystem in Indonesia. It also looks at *stakeholder* involvement in collaborative research and innovation ecosystem formation. In terms of data collection techniques, this research is a qualitative study. Data were obtained through interviews, observations, and documentation with informants who are experts in this research. Interviews were conducted with officials involved in the implementation of research and innovation funding policies and *stakeholders* involved in collaborative research ecosystem formation. Interview questions were organized based on the main points and outlines related to the topic of research funding schemes and innovation in relation to the concept of *collaborative governance*.

This research uses *purposive sampling* as the informant selection technique, which involves a deliberate and targeted approach to identify individuals who are

considered to have the most relevant knowledge and insights. The *key informants* in this research are Primary Officials at the National Research and Innovation Agency, Function Implementation Coordinators, Research Collaboration Center Funding Facilitation Program Recipients, and Research-Based Start-up Companies.

RESULT AND DISCUSSION

Analysis of *Collaborative Governance* in Research and Innovation Funding Management

Before analyzing the collaboration in the forum, researchers felt it was necessary to map the existence and extent of collaboration in the Research and Innovation Funding Program. Ansell and Gash (2008) identified six aspects that indicate collaboration in a forum. Based on the results of interviews with informants, there are aspects that support collaboration in the Research and Innovation Funding program. This will be explained in the analysis that seeks to answer the research question.

Table 2 Aspects of collaboration in the Research and Innovation Funding Program

No.	Aspects	Findings
1.	Collaboration initiated by government institutions	The Research and Innovation Funding Scheme at the National Research and Innovation Agency was initiated by BRIN, which is the only research institution in Indonesia.
2.	Collaboration participants consist of government and non-government institutions	Research and innovation funding collaboration participants consist of researchers from Research Institutions, Universities, Industry/Business Entities and Community Organizations.
3.	All participants participate in the decision-making process	Both funders and recipients play a role in the decision-making process regarding the funding scheme.
4.	Collaboration forum is formally established and meets regularly	Funding schemes are established based on Cooperation Agreements/Contracts and periodic coordination and consolidation as well as monitoring and evaluation of research activities that qualify for funding.
5.	Collaborative forums make decisions by consensus	Funding recipients are subject to research ethics clearance provisions as well as mandatory handover and mandatory storage of data and/or specimens in accordance with applicable regulations, funding proposers must comply with regulations related to substance and administration.

6.	The focus of collaboration is on public policy and management	Collaboration is carried out to support development in the field of science and technology as one of the priority programs that is very important in driving development. It is also stated in the RPJMN 2020-2024 that the government has targeted an increase in the results of research, development, assessment, and application of technology both in the form of scientific publications, intellectual property, patents and *invention* and innovation products.

Source: Processed by researchers

The table above shows that all aspects of collaboration proposed by Ansell and Gash are met. Thus, it can be said that the Research and Innovation Funding Program is a collaborative program, and not a program conducted by the government alone.

The concept of *Collaborative Governance* proposed by Ansell and Gash (2008) has 8 dimensions consisting of 2 variables, namely the collaboration process variable and the variable factors that influence *collaborative governance*. The first variable is a process that includes 5 dimensions, namely face-to-face dialog, building trust, commitment to the process, mutual understanding, *intermediate outcomes*. Then the second variable is the factors that influence *collaborative governance* which includes 3 dimensions, namely initial conditions, facilitative leadership, and institutional design.

In relation to BRIN's Research and Innovation Funding Program, there are indications of a collaborative process as proposed by Ansell and Gash (2008) because it involves both government and non-government parties in the program. Therefore, in this section, we will explain BRIN's research and innovation funding scheme as an effort to encourage the strengthening of the research ecosystem in Indonesia from the perspective of the concept of *collaborative governance*.

1. Dimensions of Face-to-Face Dialogue

Specifically, the provision of collaboration forums for the Research and Innovation Funding Facilitation Program has been carried out. The Research Collaboration Center is facilitated by the establishment of the National Research Collaboration Scientific Forum, which is held annually. The scientific forum is a vehicle to disseminate ideas or ideas in a scientific discussion forum among Research Collaboration Centers and related *stakeholders*. BRIN also organizes the InaRi Expo *event* which aims to bring science and technology, research and innovation closer to the wider community. This event must be attended by all BRIN's Research-Based *Start-up* Companies (*start-ups)*, *start-up* companies are given the opportunity to introduce the research products they produce. In addition to introducing products, this *event* also serves as a forum for meetings and discussions related to the management of research funding and innovation.

2. Building Trust

BRIN as the organizer of the research and innovation funding program applies openness and transparency in the process of managing this program. Based on the results of the monitoring carried out (interview with Mr. Muchlis, Coordinator of the Research and Innovation Funding Program, 23 March 2024), it is stated that all funding schemes in the Directorate of Research and Innovation Funding, including the PKR and PPBR programs, are carried out openly/transparently, where at every stage, starting *from the call for proposals*, administrative selection stages, substance, RAB review, to the announcement of funding acceptance, it is conveyed to the proposer. All stages are also conveyed through the funding web, namely at: www.pendanaan-risnov.brin.go.id. Of course, openness and transparency in the management of funding programs can build stakeholders' trust in BRIN as a government agency responsible for decision making.

3. Commitment to Process

In the research and innovation funding scheme, this commitment is outlined in the Funding Program Implementation Contract between the Deputy for Research and Innovation Facilitation, whose authority is delegated to the Commitment Making Officer, and the Funding Recipient. In addition to the contract, the commitment to the research and innovation funding program is contained in the proposal submitted by each funding recipient. The proposal contains annual output targets for PKR including the achievement of *academic excellence* indicators, *products/services*, and *social and economic benefits*, and *external funding*. Where all of these output targets are required by BRIN to be able to participate in research and innovation funding programs. As for PPBR, the proposal contains at least the urgency of *startup* development, solutions to solve problems through research products that are ready for commercialization, description of technology or research results along with its track record consisting of the readiness of research products or services to be commercialized and product advantages over existing similar products, product description, business plan (*business model*, *product* marketing plan, target market, production costs and product/service selling prices), business road map, *startup* management team, other resources owned.

4. Shared Understanding

A shared understanding of the collaborative research and innovation funding process starts with the guidelines for the implementation of research and innovation funding, which serve as a comprehensive tool for the successful implementation of activities, from the initial submission of proposals to the selection process, implementation of activities, and subsequent monitoring and evaluation. It ensures that all steps are carried out effectively and in line with the intended objectives. An understanding of the implementation guidelines must be owned by all stakeholders

involved in this funding program, this is important to get a common picture in looking at a problem or agreement - a mutual agreement in achieving funding objectives.

5. *Intermediate* Outcomes

Each actor involved in the collaboration feels that they are at the midpoint of success, indicating that they have entered the phase of the *intermediate outcomes* themselves. Based on the results of interviews conducted with funding recipients of both PKR and PPBR, the results of this collaboration process are quite a lot obtained by the recipients of funds including the establishment of research connections or networks, better known brands/products, easy access to infrastructure facilities at BRIN (laboratory utilization), opportunities to explore cooperation with other BRIN partners, opportunities to participate in other programs at BRIN, and of course facilitate the commercialization of their research results.

6. *Starting Condition*

The first indicator is that the parties or stakeholders have balanced competencies or abilities in conducting discussions in the forum. The competencies of the PKR program funding recipients have met the requirements, while many PPBR funding program recipients still do not meet the qualifications as a *start-up* level, but are still limited to MSMEs. Then for research capabilities, some of the start-up companies still start research traditionally not fully through scientific studies and they also do not have a research track.

The second indicator is that there is a history or cooperation that influences collaboration. There is a history of cooperation between funding program recipients and program organizers, in this case BRIN. Previous cooperation occurred both formally as stated in the PKS and informally. For the history of conflict involvement between actors both BRIN and between funding program recipients never happened. This indicates that the initial conditions formed show a positive relationship or good history between the parties involved.

7. Facilitative Leadership

The first indicator is the availability of research and innovation funding facilities. This facility can be in the form of main and supporting facilities provided by the program organizer, in this case BRIN. BRIN through the Deputy for Research and Innovation Facilitation plays a role in facilitating funding for research, development, assessment, and application, as well as invention and innovation, nuclear implementation, and space implementation. The facilities provided are not only funding but also include infrastructure owned by BRIN in the form of laboratories and research equipment that can be accessed by the parties involved in the collaboration. Other facilities are in the form of *coaching* or mentoring conducted by the Directorate of Research Utilization and Innovation at Ministries/Institutions, Communities, Micro, Small and Medium Enterprises to Research-Based Start-up Companies (PPBR) both at the pre-incubation and incubation stages.

The second indicator in this dimension is the existence of interventions to encourage stakeholders to be involved in research and innovation funding programs. efforts to intervene in the involvement of stakeholders in the succession of research and innovation funding programs is by conducting socialization on various occasions both through offline, social media, and online through zoom.

8. Institutional Design

The first indicator is that there are basic provisions regarding procedures for collaboration. The procedures and basic provisions for the implementation of research and innovation funding programs, both the facilitation of Research-Based Start-up Companies (PPBR) and Research Collaboration Centers (PKR), have been outlined in the funding program guidelines established by the Deputy for Research and Innovation Facilitation, then further elaborated in more detail in the Technical Guidelines for the Implementation of Research and Innovation Funding by the Director of Research and Innovation Funding.

The second indicator in this dimension is that parties in the forum have equal rights to express opinions/interests. Based on interviews conducted with several funding recipients, it is said that each party in the collaboration forum has been given the same opportunity to express opinions or talk about matters related to the implementation of the research and innovation funding program, guided by the agreed rules.

Identification of *Stakeholders* in Research and Innovation Funding Management

In the research conducted to identify *stakeholders* involved in the management of research and innovation funding, it can be said that the stakeholders to be studied are individuals or groups / institutions involved in the research and innovation funding scheme program, individuals or groups / institutions that are directly or indirectly affected by the program.

1. Primary *Stakeholder*

These stakeholders have a significant influence on the results and are closely related to the activities in question. In this study, the primary *stakeholders* are the recipients of research and innovation funding for both the Research Collaboration Center and Research-Based Start-up Companies, which have been determined based on the selection results and are contained in the Decree on Recipients of the Research and Innovation Funding Program.

a. Positive impact on research-based start-ups:
   1. Understanding of sustainable and competitive start-up management;
   2. Wider market access, as they can connect with other BRIN-assisted partners;
   3. Receive consulting facilities regarding *Business Model Canvas* (BMN) finances, roadmaps, and can map out targeted marketing processes;
   4. Increase in company turnover and profit;

5. Company legality facilities, brand IPR, product BPOM license, distribution license, and product branding;
6. Engage in *events* that provide opportunities to introduce products, open up insights into other product variations, and collaboration opportunities with other companies;
7. Able to open new jobs, so that it can contribute to absorbing labor;
8. Utilization of research facilities at BRIN, mentoring of BRIN researchers, and access to the use of laboratories and research equipment;
9. Grow business network and *scale up*.

b. Positive impact on the Research Collaboration Center:
1. Networking for research collaboration, producing many articles from reputable international journals, patent registrations, *prototypes*, and others;
2. Strengthening *capacity building* in the Collaboration Center;
3. Engage in joint research collaboration with BRIN researchers who have expertise in accordance with the field of the Research Collaboration Center;
4. The establishment of research *networks* in accordance with the fields of each Research Collaboration Center both with BRIN researchers and with peer researchers from various universities, and open collaboration with foreign researchers as well.
5. Contribute to the advancement of science by accommodating specific interdisciplines.
6. Research Collaboration Center as one of the *prestige for the* university.
7. Gain access to the use of laboratory facilities and research equipment through ELSA BRIN services.
8. Opportunities to participate in programs at BRIN in addition to funding programs as well as talent management such as Research and Innovation Talent Research Assistance (BARISTA), IRIFair, DBR, *Research Assistant* (RA), *Postdoc* and *Visiting Researcher*.
9. Research collaboration center as a hub for other national and international research funding schemes.

2. Key *Stakeholders*

Key stakeholders are parties who have legal authority in making decisions. In this study, *key stakeholders are those* responsible for implementing the research and innovation funding program. The key stakeholders in question are BRIN through the Deputy for Research and Innovation Facilitation as the organizer of the research and innovation funding program and the Deputy for Research and Innovation Utilization as a *coach & mentor for start-up* companies.

BRIN through the Deputy for Research and Innovation Facilitation facilitates research funding from the selection stage, disbursement of funds, monitoring and evaluation of the Research Collaboration Center funding program and Research-Based Start-up Companies. Then the Deputy for Research Utilization and Innovation

conducts *mentoring* activities (*coach & mentor*) to Research-Based Start-up Companies this program includes pre-incubation, incubation and post-incubation.

3. **Supporting *Stakeholders***

Supporting *stakeholders* in this research are the University, BRIN Research Organization, BRIN Deputy for Research Infrastructure and Innovation, BRIN Talent Management Directorate, BRIN Functional Supervisory Apparatus (Inspectorate) and industry partners/companies.

The university contributes in facilitating funding contracts ranging from the support of research proposals (proposals), contract administration and fund disbursement, plays a role in assisting the achievement of targets from PKR such as *external funding* competitions, provides the necessary facilities and infrastructure such as buildings, laboratories, and research equipment, and supervises the budget management of the Research Collaboration Center activities.

BRIN Research Organization plays a role in providing human resources for researchers with doctoral and master's degrees who have *expertise in* fields that are in accordance with the research focus of PKR and PPBR. BRIN researchers play a role in research collaborators, testing and analyzing research products, mentoring students, resource persons in activities such as FGDs and seminars. Researchers also transfer research results to start-up companies (PPBR) for the research results they create. In addition, researchers are obliged to provide advice and assistance for the application of research results in the production process of start-up companies (PPBR).

BRIN also through the Deputy for Research Infrastructure and Innovation facilitates Science e-Services (Elsa points) which can be used in all research, development and assessment infrastructure facilities as well as the use of *co-working spaces* in each BRIN area. In the ELSA application there are many services that can be utilized including *science* services, laboratories and BRIN research facilities.

Other *supporting stakeholders* are industry partners/companies that have roles including *supporting* research activities *in the* form of funding and *in kind*, suppliers of research raw materials, speakers at seminars and FGDs, facilitating student activities such as field studies, internships, and final assignments, and becoming a living laboratory that is the center of R&D exploration. Then the Directorate of Talent Management of BRIN plays a role in providing researcher mobility facilities for PKR program recipients and the BRIN Functional Supervisory Apparatus (Inspectorate) plays a role in supervising budget plans prepared by funding program proposers both PKR and PPBR.

Analysis of Stakeholders' *Power and Interest* in Research and Innovation Funding Management

Stakeholder mapping in research and innovation funding management has a variety of influences and importance. Based on the mapping results, key players with a high level of importance and influence include BRIN's Deputy for Research and Innovation Facilitation and BRIN's Deputy for Research and Innovation Utilization.

Meanwhile, stakeholders with a high level of importance but low influence are recipients of the Research Collaboration Center funding program, as well as research-based start-up companies. Then, supporting stakeholders with a high level of influence but low importance are universities and BRIN research organizations (researchers). Finally, other followers with low levels of influence and importance include BRIN's Deputy for Research and Innovation Infrastructure, BRIN's Talent Management Directorate, BRIN's Functional Supervisory Apparatus (Inspectorate), and industry and company partners.

The Research Collaboration Center and Research-Based Start-up provide funding for research and innovation. We categorize companies as subjects, considering them primary stakeholders. Funding recipients, such as PKR and PPBR recipients, have a high level of importance and a low level of influence. In this case, they are considered implementers, specifically policy implementers who are the targets of research and innovation funding programs. BRIN, as the policy creator, sets the rules and procedures for funding research and innovation, which PKR and PPBR recipients must comply with due to their low influence.

BRIN, through the Deputy for Research and Innovation Facilitation and the Deputy for Research and Innovation Utilization, as key players, has a high level of importance and influence. The importance here is that the research and innovation funding program is a target performance achievement targeted by the institution; therefore, the successful achievement of the research and innovation funding program affects the performance achievement of the institution. Meanwhile, high influence means that BRIN, as a policy creator, has the authority to make decisions and policies related to research and innovation funding programs.

Universities and Research Organizations (Researchers) have a high influence with a low level of influence (Contest Setter), meaning that universities and Research Organizations (Researchers) have the power to influence the success of research and innovation funding programs, where during the proposal submission and funding process must go through discussions and approval from the university as the institution / institution responsible for the activities of the proposed Collaboration Center, while Research Organizations (Researchers) provide recommendations for researchers involved in the Research Collaboration Center as collaborators from within BRIN, which is one of the requirements in submitting a proposal for the formation of a Research Collaboration Center. However, the university and the Research Organization (researchers) are only guided by the regulations and procedures set by BRIN as the policy creator.

Other followers (crowd) include the Deputy for Research and Innovation Infrastructure, the Directorate of Talent Management, Functional Supervisory Apparatus (Inspectorate), and industry partners and companies, which are parties with low importance and influence. As facilitators, other followers also play a role in facilitating research and innovation funding programs, but the duties and programs of these institutions are not directly related to the programs and activities in the

management of research and innovation funding, so they do not pay much attention to influencing this funding program.

Stakeholders in the management of research and innovation funding have different influences and interests; as a result, the researcher conducted stakeholder mapping, as shown in Figure 2: Stakeholder Analysis Matrix of BRIN Research and Innovation Funding Management. Table 3 presents the assessment of the importance and influence of stakeholders in BRIN Research and Innovation Funding, based on this matrix.

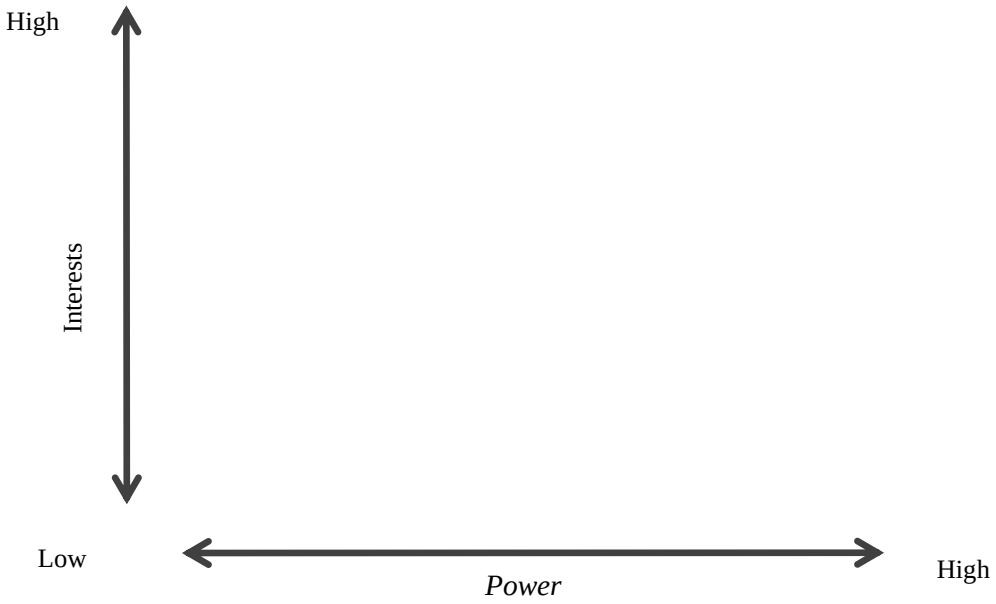

Figure 2 BRIN Research and Innovation Funding Management *Stakeholder* Analysis Matrix

Table 3. the assessment of the importance and influence of stakeholders in BRIN Research and Innovation Funding, based on this matrix.

Subjects	***Key Players***
Research Collaboration Center	Deputy for Research and Innovation Facilitation
Research-based Startup Companies	Deputy for Research Utilization and Innovation
Other Followers (*Crowd*)	**Supporters (*Contest Setter*)**
Deputy for Research Infrastructure and Innovation	University
Directorate of Talent Management	Research Organization (Researchers)
Functional Supervisory	

Apparatus (Inspectorate) Industry partners/companies

CONCLUSION

According to the findings of the informant interviews, the Research and Innovation Funding program incorporates elements that foster collaboration, demonstrating the fulfillment of Ansell and Gash's proposed aspects of collaboration. Therefore, we can assert that the Research and Innovation Funding Program fosters collaboration rather than being solely a government initiative.

The collaborative governance process, which includes five dimensions, namely face-to-face dialogue, building trust, commitment to the process, mutual understanding, and intermediate outcomes in general, has gone well. Some parties have expressed the need to increase the schedule and time for face-to-face dialog, as it is crucial for fostering improved communication among actors. In the dimension of building trust, BRIN found internal problems related to coordination with the APIP (Government Internal Supervisory Apparatus), which needed better synchronization and coordination. In the dimension of shared understanding, some parties experienced confusion regarding funding guidelines. Changes in guidelines and various other factors lead to differences in interpretation among funding recipients. The interim results dimension reveals a decline in trust in the collaboration's outcomes, as evidenced by a decrease in enthusiasm for both PPBR and PKR funding compared to previous years, as evidenced by the smaller number of proposals submitted.

The factors that influence collaborative governance include three dimensions, namely: initial conditions, facilitative leadership, and institutional design. The pre-conditions of collaboration show that there has never been a conflict between the actors involved, and some parties have even started working together before. In terms of the parties' competence in the collaboration, we found that some PPBRs did not meet the necessary qualifications, whereas PKR found them to be appropriate. In facilitative leadership, BRIN's role as the program organizer in providing facilities is quite adequate, but it still needs improvement in the regulation of access to these facilities, especially the use of laboratories and research support equipment. Institutional design has established basic procedures for collaboration. The Deputy for Research and Innovation Facilitation established the funding program guidelines, which outline the procedures and basic provisions for the implementation of research and innovation funding programs, including the facilitation of research-based start-up companies (PPBR) and research collaboration centers (PKR). The Director of Research and Innovation Funding further elaborates these procedures in more detail in the Technical Guidelines for the Implementation of Research and Innovation Funding.

There are available and clear guidelines and rules for the implementation of

research and innovation funding, but in some cases, more detailed explanations are required. Sometimes, funding program proposers receive changes to the guidelines late or through socialization. Confusion in understanding the guidelines also occurs due to the lack of information from the organizers, which sometimes leads to misperceptions in the implementation of funding programs.

Three categories of stakeholders are involved in managing research and innovation funding: primary stakeholders, key stakeholders, and supporting stakeholders. Primary stakeholders are recipients of research and innovation funding from both research collaboration centers (RCCs) and research-based start-up companies (RBCs). Key stakeholders in BRIN are the Deputy for Research and Innovation Facilitation, who organizes the research and innovation funding program, and the Deputy for Research and Innovation Utilization, who coaches and mentors start-up companies. Supporting stakeholders in this research are the university, BRIN Research Organization, BRIN Deputy for Research and Innovation Infrastructure, BRIN Talent Management Directorate, BRIN Functional Supervisory Apparatus (Inspectorate), and industry and company partners.

Key players, or stakeholders with a high level of importance and influence, include BRIN's Deputy for Research and Innovation Facilitation and BRIN's Deputy for Research and Innovation Utilization. Meanwhile, stakeholders with a high level of importance but low influence receive funding from the Research Collaboration Center, as well as research-based start-up companies. Then, supporting stakeholders with a high level of influence but low importance are universities and BRIN research organizations (researchers). Finally, other followers with low levels of influence and importance include BRIN's Deputy for Research and Innovation Infrastructure, BRIN's Talent Management Directorate, BRIN's Functional Supervisory Apparatus (Inspectorate), and industry and company partners.

The need for strong research and innovation not only supports technological advancement but also strengthens the foundation of the national economy. Strengthening research human resources, developing laboratory infrastructure, synergy with industry, and, of course, government research funding are important aspects of optimizing the Indonesian research ecosystem. BRIN has effectively and efficiently funded the research ecosystem to achieve this.

Theoretically, this research shows that to realize collaboration in the management of research and innovation funding, it is necessary to pay attention to the dimensions that affect the collaboration process and the influencing factors. The identification of stakeholder involvement and the influence of interests will help the parties involved to understand each other and can encourage the role of stakeholders, both those who are still involved and those who need to be involved. Practically, the results of this study can serve as input for the National Research and Innovation Agency, an institution authorized to manage research and innovation funding in Indonesia.

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