

Study of Regional Innovation System (SIDa) in Accelerating Regional Development in Malang City

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Abstract

As an acceleration of development, several ministries in Indonesia formed a joint program called Smart City. To accelerate the program, the central government issued a National Innovation System (SINas) policy which was handed down in each region called the Regional Innovation System (SIDa). SIDa is in the form of a roadmap for mapping innovations that must be carried out by local governments as part of development in the region. The method used in this study is a qualitative approach with a desk review study on the 2022 Malang City Government Monev SIDa Final Report document as well as interviews with representatives of Bappeda and the Research and Development Agency to find out the extent of the success of the program formulated with the realization that has been carried out for a period. The results obtained are the preparation of the SIDa roadmap mapped based on the pillars determined to facilitate monitoring and evaluation. It can be concluded that the Malang City Government has provided innovation to every development carried out, so that the needs of the community can be met.

Article Info

Keywords:

Regional Innovation System (SIDa);
Regional Development;
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1. Introduction

Good governance is a prerequisite for achieving the societal goals of every country. This effort is outlined in TAP MPR No. XI/MPR/1998 on the Administration of a Clean State Free from Corruption, Collusion, and Nepotism. According to Article 3 of TAP MPR, the general principles of state administration include legal certainty, transparency, proportionality, professionalism, and accountability. To achieve this goal, a measurable and recognized accountability system is required to ensure that government administration and development operate effectively, efficiently, cleanly, and responsibly. Additionally, this administration must be free from practices of corruption, collusion, and nepotism.

The effort to realize excellent public services is the goal of every government agency. Improvement of public services can be realized through various innovative development initiatives. The Indonesian government has developed a SINAS (National et al.) program to help achieve national development and competitiveness. One of the initiatives to enhance the economic development of Indonesian society is SINas. This program is implemented in every city or regency in Indonesia. Subsequently, SIDa (Regional et al.) is the name for the SINas program at the regency/city level (Anggraini, 2015).

Developing the regional innovation system (SIDa) is one of the main strategies in the national innovation system that facilitates the interaction process between components of the innovation system strengthening (Handayani et al., 2013). The basis for the development of the regional innovation system (SIDa) is Law No. 17 of 2007 on the National Long-Term Development Plan (PJN) for 2005-2025 and Law No. 18 of 2002 on the National System of Research, Development, and Application of Science and Technology. According to these laws, each region must strengthen SIDa by creating a coordination team and SIDa roadmap, organizing SIDa institutionally and regarding SIDa resources, developing SIDa through local potential, and conducting coordination and reporting up to the central government.

The Regional Innovation System (SIDa) is a perspective/approach to regional development carried out systematically, innovatively, holistically, and sustainably, emphasizing collaborative work among regional development stakeholders (Taufik, 2005). The purpose of establishing SIDa is to create collaboration or synergy between the local government, universities, and various other elements, from planning, implementation, evaluation, and the need for improvement actions to strengthening regional competitiveness. The presence of SIDa can foster innovation among government institutions, local governments, educational institutions, research and development institutions, innovation support institutions, businesses, and the community in a region (Syekh, 2019). The importance of the innovation system for Indonesia as a nation is to become an advanced country based on its ability to develop, master, and utilize technology. Syamsuddin and Fuady (2020) reveal that the spread of science and technology throughout the regions will occur effectively through the empowerment, formation, and structuring of regional science and technology resources, including institutions, human resources, finances, programs, and infrastructure (Syamsuddin et al., 2020).

Joint Regulation Numbers 03 and 36 of 2012 on Strengthening the Regional Innovation System stipulates that regions, both Provinces and Regencies/Cities, must establish policies to enhance the Regional Innovation System (SIDa). This policy is crucial to the Regional Development Master Plan (RIPD) and the Regional Medium-Term Development Plan (RPJMD). It significantly affects achieving economic development goal (Setiawan, 2017). Especially in integrating the potential to boost economic growth and create profitable business opportunities that help accelerate local economic growth.

In the study of the Regional Innovation System (SIDa) in Malang City, there are several research gaps that need to be identified to deepen the understanding of how SIDa can accelerate regional development. First, although many studies have been conducted on the implementation of innovations in various regions, there are still shortcomings in the specific analysis of the local context of Malang City. For example, research by (Lestari et al., 2019) shows the importance of synergy between various actors in innovation networks, but there is no research that specifically addresses how these actors interact in the context of SIDa in Malang City.

Furthermore, research by (Melgiana et al., 2020) and (Sarkoro et al., 2018) showed a relationship between local real income and the human development index, but there was no study that directly correlated these results with the implementation of SIDa in Malang City. This creates a gap in understanding how SIDa can directly affect these variables in a local context.

In addition, although there is a study that discusses the SIDa implementation measurement model (Maninggar et al., 2023)

, there is no study that evaluates the effectiveness of the model in the specific context of Malang City. Research by (Ananda et al., 2020) on health service innovation in Pariaman shows the importance of innovation in the health sector, but there is no study that discusses how innovation in the health sector in Malang City can be integrated in SIDa to improve public services.

Finally, although there are studies that discuss promotional strategies to increase investment in other areas (Vindiana et al., 2022), there has been no research that specifically explores how SIDa can serve as a strategy to attract investment in Malang City. Thus, this research gap shows the need for a more in-depth study of the interaction between SIDa, regional development, and its influence on various sectors in Malang City.

Malang City is one of the governmental entities participating in developing the regional innovation system to enhance development. The formulation of the SIDa Roadmap began in 2020 and has seen each year progress. The strategy to improve Malang City's SIDa is strengthening

innovation platforms through selected themes. It must be acknowledged that the output is not about creating innovations but about strengthening the potential and stimulating the development of innovations in Malang City so that the innovation potential can grow and benefit welfare and competitiveness.

The dynamics of interaction in a region will significantly influence the regional innovation system of Malang City. In 2019, we witnessed the formation of the coordination team, working group, and secretariat to strengthen the regional innovation system of Malang City. The Roadmap for Strengthening the Regional Innovation System of Malang City for 2021-2025 has been drafted. The second mission is to Realize a Productive and Competitive City Based on a Creative, Sustainable, and Integrated Economy. This research focuses on the analysis related to implementing SIDA strengthening in Malang City, especially on the creative economy aspect, which has become iconic and is experiencing rapid growth. This can support the successful implementation of regional development.

THEORETICAL FRAMEWORK

1. Regional Innovation System

The study of the Regional Innovation System, commonly known as SIDA, originated from the issuance of legislation aimed at enhancing national competitiveness and self-reliance in the face of global competition. Law Number 18 of 2002 on the National System of Research, Development, and Application of Science and Technology mandates the government and regional governments to enhance the support for science and technology. Law Number 23 of 2014 on Regional Government also emphasizes that innovation is crucial in regional governance.

Joint Regulation of the Minister of Research and Technology and the Minister of Home Affairs Numbers 03 of 2012 and 36 of 2012 on Strengthening the Regional Innovation System (SIDa) was established to follow up on these regulations. Additionally, as an implementation of Law 23 of 2014, Government Regulation Number 38 of 2017 on Regional Innovation was issued. Following these regulations, regional governments are responsible for building and maintaining the Regional Innovation System (SIDa), the foundation for innovation-based development performance.

An innovation system involves creating new knowledge and guides the direction of the search process for technology providers and users. Therefore, an innovation system includes science and technology (encompassing education, research, development, and engineering activities) (Liu et al., 2001). The Regional Innovation System (SIDa) is a perspective/approach to regional development conducted systematically, innovatively, holistically, and sustainably, emphasizing collaborative work among regional development stakeholders (Taufik, 2005). According to (Handayani et al., 2013), the regional innovation system (SIDa) is one of the main strategies in the national innovation system that facilitates the interaction process between components of innovation system strengthening. SIDA serves as a framework for collaboration with universities, regional governments, companies, and all parties related to utilizing innovation and technology in regional development.

The Regional Innovation System consists of groups of development actors, institutions (including policies), interactions, and productive processes that influence the direction and speed of innovation. It is a systematic, innovative, holistic, and sustainable approach emphasizing development stakeholders' cooperation. Once the regional regulation governing the RPJMD (Regional et al. Plan) has been established, the SIDA Strengthening Roadmap must be incorporated into the RPJMD document. The SIDA Strengthening Roadmap must be able to accommodate programs and activities funded by national, provincial, regency, or city revenues and expenditures, as well as other legitimate and non-binding sources of income.

2. Regional Development

Regional development is a process that includes the establishment of new enterprises, the formation of alternative industries, the enhancement of the existing workforce's capacity to produce better goods and services, the introduction of new markets, the transfer of knowledge, and the development of new businesses (Hilman, 2016). Local governments and communities must take the initiative in regional development to achieve these goals.

Therefore, with the participation of their communities, local governments must be able to identify the potential of every resource needed to design and build the regional economy (Arsyad, 2010).

According to (Todaro et al., 2006), three main principles must be present in the development of a region:

1. Sustenance
Sustenance is the ability to meet basic needs such as clothing, food, shelter, health, and protection.
2. Self-esteem
Development must humanize. In a broad sense, a region's development should enhance its residents' pride.
3. Freedom from Servitude
The freedom referred to is the freedom for every citizen to think, develop, behave, and strive to participate in development.

Local governments and communities can use existing resources and collaborate with the private sector to create new jobs and drive economic growth in the region, known as regional economic development (Soares et al., 2015). According to (Arsyad, 2010), regional development has two general objectives: first, to create new jobs for the people living in the region, and second, to help local governments and communities develop their businesses.

2. Methods

This research uses a qualitative approach with desk study as the primary method. According to (Liando, 2016), a desk study reviews various published materials (mass media news and literature), including theoretical references, statistics, monitoring results, official documents, research findings, and more. The qualitative approach is to obtain descriptive data in words, images, and not numbers. This approach does not use statistical foundations but is based on existing qualitative evidence related to the object of study (Moeloeng, 2014). Additionally, interview techniques are used in this research to support and deepen the data obtained through government documents. The data includes primary and secondary data obtained through interviews and documentation studies.

Interviews were conducted with the Regional Development Planning Agency (Bappeda) and the Research and Development Agency of Malang City, responsible for the SIDA roadmap documents. The government documents used include the Monitoring and Evaluation Report of the Regional Innovation System (SIDa) for 2022. These documents then serve as primary and secondary data for analyzing the realization of innovations carried out by the region to accelerate the Smart City program. The analysis stages used consist of three (3) main points according to (Handayani et al., 2013): 1) analysis of identifying priority themes, 2) gap analysis between current conditions and desired goals. This analysis includes mapping the current achievements of SIDA and the expectations from the SIDA process, and 3) analysis of formulating strategies and policy directions for strengthening SIDA.

3. Results and Discussion

The formulation of the SIDA roadmap in Malang City is based on the Joint Regulation of the Minister of Research and Technology and the Minister of Home Affairs Number 3 of 2012 and Number 36 of 2012 concerning Strengthening the Regional Innovation System (SIDa). Following these regulations, the Mayor of Malang issued a decree to form a SIDA coordination team. In the RPJMD and RKPD of Malang City, the SIDA roadmap draft, which includes strategies, policies, priorities, and action plans, will be implemented through sectoral and cross-sectoral programs. The SIDA program to accelerate the Smart City in Malang City is supported by several other agencies, namely the Research and Development Agency, the Agency for the Assessment and Application of Technology, the Department of Transportation, the Department of Manpower, the

Department of Cooperatives, Industry, and Trade (Diskopindag), the Department of Youth, Sports, and Tourism, the Department of Communication and Information, and Bappeda as the leading role in monitoring and evaluation activities of SIDA.

1. Priorities in Formulating the Regional Innovation System (SIDa)

The formulation of the SIDA roadmap aims to accelerate regional government innovation in achieving regional development goals. This acceleration can expedite the realization of the Smart City program, jointly organized by the Ministry of Communication and Information Technology, the Ministry of Home Affairs, the Ministry of Public Works and Housing, Bappenas, and the Presidential Staff Office. These entities guide Regencies/Cities in drafting the Smart City Master Plan to maximize the use of technology better, improving public services and accelerating the potential of each region. As stated by a representative from Bappeda Malang City in a Focus Group Discussion:

"SIDa is aimed at accelerating the Smart City program, and the RPJM 2018-2023 of Malang City focuses on achieving Smart City, especially in implementing public services. The formulation of SIDA focuses on one goal determined by BAPPEDA: to trigger innovation in the local government and community in achieving a Smart City" (Informant 1).

Formulating the SIDA roadmap requires priority programs that serve as the primary development targets. These priority programs are derived from the vision and mission of Malang City's development. The vision for Malang City's development for 2018-2023, based on the vision of the Mayor and Deputy Mayor, is "Dignified Malang City." To realize this vision, the Malang City Government has established four (4) significant missions:

- a. Mission 1: Ensure Access and Quality of Education, Health, and Other Basic Services for All Residents.

Development is prioritized to improve the quality of human resources by enhancing the quality, accessibility, and equity of education and health services and increasing access to essential public services for all residents of Malang City.

- b. Mission 2: Realize a Productive and Competitive City Based on a Creative Economy, Sustainability, and Integration.

Development is prioritized to increase regional productivity and competitiveness, improve welfare, enhance the development of integrated and sustainable infrastructure and urban support, and orderly spatial planning with an environmental perspective.

- c. Mission 3: Realize a Harmonious and Tolerant City Based on Diversity and Advocacy for Vulnerable and Gender Groups.

Government administration prioritizes enhancing harmony among religious communities by upholding cultural diversity and religious tolerance and protecting vulnerable communities, gender equality, and social harmony.

- d. Mission 4: Ensure Public Satisfaction with Government Services that are Lawful, Professional, and Accountable.

Development is prioritized on implementing bureaucratic reform and the quality of professional, accountable, and public-satisfaction-oriented public services.

Additionally, as part of shaping the vision and mission of Malang City, the RPJMD also includes the plan for Malang City. This plan consists of six (6) concepts developed from understanding the city's character and potential. It is intended to achieve future development through the design of the city's development vision. The following are the concepts:

- a. Malang City Heritage (Historical et al. of Struggle)
- b. Malang 4.0 (Information Technology Literacy in All Fields)
- c. Malang Creative (Center of Creative Economy)
- d. Malang Halal (Center of Halal Tourism)
- e. Malang Services (Role Model of Collaborative Governance)
- f. Malang Nyaman (Friendly and Sustainable Urban Planning)

To enhance Malang City's innovation system, strengthening the innovation system is a strategic step that must be taken. This strategy is closely related to the strategy for achieving Development **Mission Number 2**, which aims to **realize a Productive and Competitive City based on the Creative Economy, Sustainability, and Integration**. The Regional Innovation

System in Malang City will be significantly influenced by the dynamics of interaction with the outside world, both domestically and internationally. The strengthening of Malang City's Regional Innovation System was implemented in 2019 through the establishment of the Coordination Team, Working Groups, and SIDA Strengthening Secretariat, along with the formulation of the SIDA Strengthening Roadmap.

This focus is based on data from potential sectors in Malang City, which are synonymous with the creative economy. Due to the government's commitment over the past year, the creative economy has seen significant growth. In other words, the creative economy sector must set the direction for development through digital transformation and creating platforms to support it. Since the majority of the population is millennials, the strengthening of the creative economy will continue. The Malang Creative Center (MCC) has been established as a hub to facilitate creative economy actors. Currently, the MCC encompasses 17 creative economy subsectors, including architecture, film, photography, fine arts, crafts, culinary arts, product design, applications, gaming, radio, television, fashion, performing arts, interior design, advertising, publishing, and visual communication design (DKV).

1. Gap Analysis of Current Conditions and Expected Achievements

Fundamentally, implementing the SIDA roadmap in Malang City in 2022 has made significant progress in executing all innovation programs. From this, the percentage of SIDA roadmap indicators that have been achieved is higher than that that have not been achieved. A detailed explanation will be provided in the following sub-discussion.

The condition of the Regional Innovation System (SIDA) in Malang City, which is expected to be achieved, generally describes the anticipated state of SIDA in Malang City by the end of the period, namely in 2025. These achievements are expected to be prominent supporters of Malang City's development vision. The content outlines the SIDA target plan to be achieved by 2025. The grouping of the current condition analysis with the expected achievements will be discussed for each cluster or pillar of the SIDA roadmap indicators. The following table presents the analysis of the current conditions faced by each Regional Apparatus Organization (OPD) and the expected conditions related to the SIDA roadmap.

Table 1. Tabulation Analysis of the SIDA Roadmap Conditions in Malang City

Pillar	OPD	Current Condition	Expected Condition
Innovation Ecosystem	Bappeda	There needs to be a greater understanding that the SIDA roadmap is a planning document, leading to inadequate support from many regional devices.	We are developing a regional innovation system planning framework.
		Coordinating with Penta helix personnel who are not directly involved in innovation hinders the transfer of information and understanding of innovation planning.	We are achieving Pentahelix coordination (Local Government, Private Sector, Community, Media, and Entrepreneurs).
	Diskoperindag	Several programs have been implemented, but there still needs to be more budget support from the city government.	Establishing intellectual property centers
	Diskominfo	The "One Data" program in Malang City has been implemented.	Integrating Malang City's One Data with Business Innovation Data.

	Disnaker	The online single-window licensing system has been implemented, but indicators still need to be achieved.	Functioning online licensing system, particularly for the development of the creative economy.
	Dinas PUPR	The master plan has changed to the “Heritage” program.	We are establishing RPK in Malang City as an improvement over existing parks/green open spaces.
	Disporapar	Due to pandemic constraints, youth involvement in creative communities has yet to be achieved	We are establishing creative communities primarily composed of youth to foster innovation and creativity.
Industry Cluster	Diskoperindag	The creative economy in Malang City is already good, evidenced by the annual increase in the number of creative economy actors.	The creative economy continues to grow and improve annually, leveraging the digital economy.
	Dinas PUPR dan Disporapar	Significant development in the heritage area compared to previous years.	We are developing heritage tourism and halal tourism destinations.
	Bappeda	Innovation learning activities for the creative economy community have been carried out.	Research, studies, and development related to the creative economy are increasing each year.
Innovation Network	Disnaker dan Dinas PUPR	Implementation of Malang Creative Center development.	Maximizing the utilization of Malang Creative Center and issuing permits for all economic, tourism, and socio-cultural activities
	Disporapar	Pentahelix collaboration has been established, but indicators in the planning document have changed.	Collaboration between K/L, universities, IPTEKIN institutions, and business actors to support creative economy marketing.

Technopreneur	Diskoperindang dan Disporapar	The limited budget leads to limited training participants, limited facilitators from Diskoperindag, limited capabilities of the trained personnel, and not all UMs being able to participate in exhibitions due to pre-curation.	Increasing business actors and UMKM capacity and facilitating micro-enterprises participating in marketing/exhibitions of superior products.
	Disnaker	Implementation of talent scouting programs for job seekers.	We are further developing and sustaining the talent scouting program.
Thematic	Diskominfo	The Smart City development program has been well implemented.	We are developing applications and supporting infrastructure for Smart Cities through qualified, IT-based human resources.
		Significant increase in the number of IT-based applications.	They are increasing the number of IT-based applications according to the needs of the community and their optimal use.
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	Disnaker dan Dinas PUPR	Implementation of Malang Creative Center development.	Maximizing the utilization of Malang Creative Center and issuing permits for all economic, tourism, and socio-cultural activities
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		Significant increase in the number of IT-based applications.	They are increasing the number of IT-based applications according to the needs of the community and their optimal use.

Source: Final Report on SIDA Monitoring and Evaluation by Malang City Government (2022), processed by the researcher (2023)

2. Formulating Policy Strategies for Strengthening the Regional Innovation System (SIDa)

The SIDA Strengthening Roadmap for Malang City aims to achieve the 6 Future Agendas of Malang. This strategy aims to translate the programs or activities within the RPJMD and the Strategic Plan of OPD by prioritizing the creation of the 6 Future Agendas of Malang into 5 (five) SIDA Pillars, namely:

a. Pillar 1: Strengthening the Regional Innovation Ecosystem

The innovation ecosystem is the collaborative management of various organizations by combining individual capabilities within their environment to address market problems (Abner et al., 2017). The regional innovation ecosystem pillar aims to create a conducive climate for innovation by providing regulations and infrastructure related to innovation. The strategy for strengthening the regional innovation ecosystem functions to enhance the capability and performance of creativity, innovation diffusion, and learning in Malang City systematically in a macro context as an integral part of regional development.

The approach can be through the innovation policy framework as a strategic foundation for strengthening the regional innovation system. Formulating medium-term goals and targets through phased operational implementation can also support achieving goals and targets for strengthening the regional innovation system. Sari and Retnaningsih (2020) mention that formulating goals and targets for regional innovation strengthening can form an innovation ecosystem and create an innovation policy framework (Sari et al., 2020).

Strengthening the regional innovation ecosystem pillar in Malang City involves several aspects, including the following:

- 1) We are developing a general framework conducive to innovation and business to enhance the attractiveness of investment and licensing.

- 2) We are strengthening the SIDA coordination team institutions and the scientific and technological support capacity from research and development bodies to meet strategic regional and industrial scientific and technological needs through collaboration with universities.
- 3) I am fostering and developing innovation collaboration and increasing the diffusion of innovation results from research and development.
- 4) We are promoting a culture of innovation within the City Government, education, and the broader community.
- 5) We are strengthening cooperation between regions and between regions and the central government.

The development focus on the innovation ecosystem pillar includes improving the integrated business/investment licensing system, empowering integrated creative communities, achieving Penta helix coordination, and building creative industry centers. The leading sectors of this pillar are the Communication and Information Office, the Office of Manpower and Investment One-Stop Integrated Service, the Regional Planning and Development Agency, and the Office of Cooperatives, Industry, and Trade.

b. Pillar 2: Industrial Cluster Development

Malang City is often referred to as an industrial city. Its industrial growth pattern is unique because small and micro industries support most of its economy. Only a few large manufacturing companies in Malang City are primarily labor-intensive industries. According to data from the Malang City Central Bureau of Statistics (BPS), there are currently 2,884 active industrial units, most of which are dominated by creative economies from various sectors.

Strategic efforts are being made to enhance various industrial clusters in Malang City, particularly in the creative economy industry. This strategy aims to systematically improve the capabilities and performance of creativity and innovation, diffusion, and learning in the region within the context of mezzo-level potential industrial clusters as an integral part of regional development.

The development of the industrial cluster pillar can be achieved through several means, including:

- 1) Developing policies and infrastructure for industrial clusters.
- 2) Enhancing the value chain of industrial clusters.
- 3) Developing environmentally friendly and standardized industrial cluster products.

Enhancing the highly competitive regional commodity clusters can increase the value of innovation, and the number of new technologies adopted by the community can be increased (Sari et al., 2020). The development focus on the industrial pillar is directed toward developing science and technology-based products, increasing the capacity of business actors, expanding market access, and utilizing e-commerce or ICT-based marketing. The leading sectors of the industrial pillar are the Youth, Sports, and Tourism Office and the Office of Cooperatives, Industry, and Trade.

c. Pillar 3: Innovation Network Development

This strategy aims to systematically enhance the capabilities and performance of the region's creativity, innovation, diffusion, and learning by strengthening partnerships/collaboration, dynamic interactions, knowledge/innovation flows, and knowledge management as an integral part of regional development.

- 1) We are strengthening and developing science and technology (Iptek) and research and development (litbang) institutions in specific areas/Techno Parks.
- 2) I am fostering and developing innovation cooperation and networks.
- 3) We are promoting the integration of innovation networks.

To increase the competitiveness and capabilities of the community in the industrial sector, the Malang City Government has provided facilities such as the construction of the "Malang Creative Center" (MCC) as a facility for the general public to showcase their work. Due to limited funds, the government has made efforts to facilitate community needs in the industrial sector while still paying attention to priority programs. As expressed by a representative of the Malang City Research and Development Agency:

"We have built the MCC (Malang Creative Center) building as a facility for the community. We always strive to meet the community's needs but must prioritize certain areas due to limited funds. Incidentally, in 2022, the creative industries in Malang City are in the fashion, food, and game sectors" (Source 2).

The development focus on the innovation network pillar is directed toward developing the MCC masterplan feasibility study concept, building and organizing the area, forming the MCC management institution, establishing penta helix cooperation, providing innovation learning to creative economy communities, and organizing regional/national digital-based science and technology forums. The leading sectors of this pillar are the Public Works and Housing Office (PUPR-Perkim), the Youth, Sports, and Tourism Office, and the Office of Cooperatives, Industry, and Trade.

d. Pillar 4: Technopreneur Development

This strategy aims to enhance the capabilities and performance of creativity, innovation, diffusion, and learning in the region systematically within the meso-micro context of developing institutional innovation centers for micro, small, and medium enterprises (MSMEs) and innovative MSMEs within the framework of the regional innovation system as an integral part of regional development. The development of the technopreneur pillar can be pursued through several initiatives:

- 1) We are strengthening the institutional framework of innovation centers for developing MSMEs and new technopreneurs.
- 2) We are fostering interaction between science and technology (Iptekin) producers, MSMEs, and technopreneurs.
- 3) We are developing existing potential businesses as well as new innovative businesses.

The technopreneur pillar's development focuses on building regional business incubators, organizing digital-based entrepreneur talent scouting, creating new technology-based entrepreneurs (PPBT) through training activities, improving product standards, and increasing access to national/international promotion. The leading sectors of this pillar are the Youth, Sports, and Tourism Office and the Office of Cooperatives, Industry, and Trade.

The Malang City Government also organizes an innovation and technology (inotek) competition for creative economy actors to trigger community innovation and inter-regional government cooperation. This effort has resulted in an annual increase in the growth of the creative economy. In 2022, the growth of the creative economy increased by 4.21% from 2021, which was 3.47%. In 2023, the creative economy is projected to grow by more than 6%, given the increasing enthusiasm of the community each year. As stated by Source 3, a representative from the Malang City Development Planning Agency (Bappeda):

"In 2023, the growth of the creative economy is projected to be around 6%, considering the significant growth rate of 4.21% this year. In 2021, it was only 3.47%. This increase aligns with the inotek competition, which motivates the community to continue innovating and creating" (Source 3).

e. Pillar 5: Thematic Policy Development

The thematic policy development pillar aims to improve and enhance the infrastructure supporting the implementation of the Regional Innovation System (SIDa), such as the Electronic-Based Government System (SPBE), information and communication technology (ICT) literacy in society and the business world, Smart City implementation, and digital transformation. This strategy enhances and improves thematic and contextual system-strengthening elements integral to regional development. The development of the thematic policy development pillar can be pursued through several initiatives:

- 1) Developing a General Thematic Framework for the Region.
- 2) We are developing applications and infrastructure supporting Smart City.
- 3) We are aligning with global developments.

The development focus of the thematic pillar is directed toward developing human resources in communication and information, increasing the number of ICT-based applications, organizing thematic IT innovation appreciation events, and developing smart cities. The leading sector of the thematic pillar is the Office of Communication and Informatics.

3. Success Rate of Programs and Challenges Encountered

The Government of Malang City has undertaken various efforts to strengthen the Regional Innovation System (SIDa) strategy. However, the results achieved have yet to be entirely successful. Based on data from the Final SIDa Monitoring and Evaluation Report of the Government of Malang City in 2022, the following realization percentages were obtained:

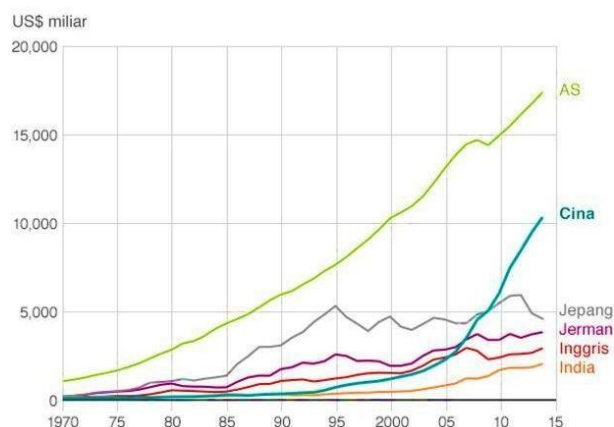


Figure 1. Achievement of SIDa Roadmap Indicators in 2022

Source: Final SIDa Monitoring and Evaluation Report of Malang City Government, 2022 (2023)

Based on the data above, the implementation of SIDa in Malang City in 2022 included 17 action plans divided into five pillars: innovation ecosystem, industry, innovation, network, technopreneur, and thematic pillars. Each action plan has several indicators, and implementing one action may involve more than one regional apparatus. The Malang City SIDa Roadmap divides these 17 Action Plans into 56 indicators.

When mapped to the calculation of the indicators that have been implemented, 46 indicators have been implemented, and ten indicators have not been implemented out of a total of 56 indicators. The percentage of achieved indicators is 82.14%, the sum of the implemented indicators and whether the targets were met. The percentage of indicators that have yet to be implemented is 17.86%. In other words, in 2022, 46 indicators were implemented.

Despite the performance achievements, various obstacles have hindered the success of SIDa in Malang City. The main issue encountered by the Malang City Government, especially Bappeda, was frequent changes to the targets of the same program.

(Taufiqurokhman et al., 2008) stated that regulations or programs implemented must be dynamic, following the needs of the target to be achieved. However, this caused problems in the success rate of SIDa in Malang City. Changes in programs must accompany changes in targets, whereas currently, if there is a change in targets but the program does not change, in other words, the program runs as before. This creates a gap due to a lack of continuity between the target and the implemented program.

Another issue concerns identifying assessment criteria, considered routine work by government officials. Innovation is often seen as an added burden because many think that innovating will increase the workload in addition to regular tasks. Some even believe that innovating must have a significant impact on change. However, even minor improvements, if deemed better than before, also qualify as innovation. This has led to small innovations needing to be better monitored. As stated by Source 1 from the Bappeda Malang City representative:

"Innovation is considered unusual... because if we innovate, the mindset is that people's workload will increase so that less innovative stay in their comfort zones doing the same work"

as usual. There is no improvisation there. Worse, sometimes even small things we consider innovations are not recognized as such because the impact might not be visible... so sometimes it is not acknowledged" (Source 1).

From the community participation side, there are several obstacles, as stated by Source 3 from the Bappeda Malang City representative:

"Document-wise, we are ideal, but the innovations are not visible to the public. Usually, the public is less enthusiastic about positive news and more so about negative news, making it go viral quickly. So, what do we do? We keep providing the necessary information to the public. Most innovations come from the non-government side, and there are always limitations for the government in facilitating these innovations" (Source 3).

From these statements, there are several reasons for the obstacles in community participation. First, regarding publicity, positive news is overshadowed by negative news. Despite this, the government continues providing information about these innovations, even if some community members are less interested. The government maintains that the SIDA document preparation is done ideally, even though it still needs more public support. Second, most innovations come from the non-government side, so the government acts as a facilitator in responding to these innovations. However, there are limitations in the government's capacity and resources to filter potential innovations for prioritization in the central development while still considering other innovations.

DISCUSSION

The results and discussions on the Regional Innovation System (SIDa) Study in accelerating regional development in Malang City show that SIDA plays an important role in increasing collaboration between actors, facilitating innovation, and supporting sustainable development policies. Research by (Maninggar et al., 2023) suggests that the SIDA implementation measurement model can be used to assess regional innovative capacity by identifying innovation elements in innovative programs. It is important to understand how SIDA can be optimized in Malang City, especially in the context of collaboration between the government, the private sector, and educational institutions.

Furthermore, a study by (Nur et al., n.d.) shows that the quality of life in economic agglomeration areas, including Malang City, is influenced by various factors that can be optimized through innovation. This study identifies supporting and inhibiting factors that can be considered for the Malang City government in formulating more effective innovation policies. Thus, SIDA not only serves as a tool to create new innovations, but also as a platform to update and develop existing innovations, as expressed by (Wardani et al., 2023).

In the context of education and human resource development, research by (Hutama, 2022) shows that research activities in higher education can be the main driver for regional innovation. In Malang City, collaboration between universities and local governments in research and development can improve the quality of the innovations produced, which in turn will contribute to accelerating regional development. This is in line with the findings (Rini et al., 2021), which show that innovation programs that focus on tourism development can improve the local economy and create new jobs.

However, challenges still exist in the implementation of SIDA in Malang City. Research by (Siregar, 2023) indicates that good regional financial performance has a great influence on human development. Therefore, it is important for the Malang City government to ensure that fiscal policies and regional financial management support existing innovation initiatives. In addition, research by (Lukman, 2021) emphasizes the need for better strategies in collaboration between the public and private sectors to encourage more effective public service innovation.

Overall, a study of SIDA in Malang City shows that a holistic and collaborative approach between various actors, as well as strong policy support, is essential to achieve the acceleration of sustainable regional development. Further research is needed to explore more deeply about the collaboration mechanism and its impact on innovation and regional development in Malang City.

4. Conclusion

To strengthen the SIDA roadmap, the Malang City Government has implemented various innovation mapping programs during the ongoing period. The SIDA roadmap accelerates the vision, mission, and strategic goals of the Mayor as the Head of the Region. Additionally, SIDA is conducted to accelerate the realization of the Smart City program, jointly organized by the Ministry of Communication and Information Technology, the Ministry of Home Affairs, the Ministry of Public Works and Housing, Bappenas, and the Presidential Staff Office. The strengthening of the Regional Innovation System (SIDa) represents an innovative regional development approach, carried out in a focused, holistic, and systematic manner, aiming to build an innovative region. The SIDA Strengthening Roadmap for Malang City 2021-2025 was prepared by referring to the RPJMD 2018-2023.

SIDA is focused on the second mission of the Mayor and Deputy Mayor of Malang, namely "Realizing a Productive and Competitive City Based on a Creative, Sustainable, and Integrated Economy." It is then divided into pillars to facilitate the focus of development. There are five (5) pillars in the SIDA roadmap in Malang City: 1) strengthening the regional ecosystem, 2) developing industrial clusters, 3) developing innovation networks, 4) developing technopreneurs, and 5) developing thematic policies. From 2021-2022, 17 action plans and 56 indicators were fully implemented, although not all targets were met.

SUGGESTION

Recommendations for the future include enhancing the SIDA strengthening coordination team to integrate action plans and their realization. Additionally, the budget for development, especially in the creative economy industrial cluster, should be increased considering the community's high enthusiasm and potential for development. Furthermore, the development of applications and infrastructure to support the Smart City program based on ICT should be immediately realized so that information technology literacy can effectively and maximally support community and government activities.

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