

# The Strategic Role and Implementation of the Sustainable Development Goals through Public Libraries: A Multi-Case Study in Seven Provinces with the Highest Regional Competiveness Index (RCI/IDSD) Scores in Indonesia

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## Abstract

Public libraries have become important organizations in fostering and stimulating inclusive and sustainable development in contemporary knowledge societies. This research adopted an integrated mixed-methods approach by examining the role of public libraries in Indonesia in supporting the implementation of the Sustainable Development Goals (SDGs). The qualitative research showed that libraries were inclusive knowledge organizations that connect the global development and the local community through policy alignment, digital transformation, and multistakeholder cooperation. Libraries fostered development of literacies and encourage social inclusion, ensure cultural preservation and boost community empowerment, although some issues remain, like inadequate resources, technological inequality and uneven institutional capacity. The measurement model yielded strong and valid constructs for the key dimensions of the initiative, namely administration, staff, training, resources, infrastructure, partnerships, and SDG outcomes (People, Planet, Prosperity and Peace), shown by standardized estimates which were all significant. The findings established that successful implementation of SDGs by libraries hinges upon the quality of governance, collaborative networks, and adaptive delivery of services. The research revealed that public libraries become strategic actors in the field of inclusive and sustainable development, especially at the local level. Stronger institutional and digital capacities, along with better-integrated planning, are needed to optimize the contribution of libraries to the SDG, it was pointed out.

*Keywords:* collaborative governance, indonesia, mixed-methods, public libraries, sustainable development goals (SDGs)

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## 1. Introduction

According to the Sustainable Development Goals (SDGs) that are maintained by the 2030 Agenda, an inclusive and holistic development method is maintained with the premise of no one left behind. Indonesia has a need to localize SDGs at the subnational level because local actors in this level are very instrumental in ensuring the realization of the Goals (Nurhayati et al., 2024). A major issue in this process is the connection between national policies and the diverse social, economic, and cultural contexts that comprise an extremely heterogeneous archipelagic nation (over 17,000 islands, 38 provinces, 1340 ethnicities, and 718 local languages). Fair access to information and knowledge is getting more and more significant as the world is becoming increasingly complex. Strategic potentials of the library in the regional development system have not yet been fully exploited by the public libraries. The historical status of libraries as store houses in books is changing slowly following the international trends. The UNESCO, the International Federation of Library Associations and Institutions (IFLA) underline that by definition, public libraries are essential as knowledge infrastructures and drivers of change to sustainable development (IFLA & UNESCO, 2022). Public libraries are massively accessible to the community, are neutral in their institutional outlook, and knowledge receivers of community conviction. Thus, they can perform well as the location of lifelong learning (Koontz and Gubbin, 2010), digital literacy training (Ylipulli et al., 2023), entrepreneurship incubation (Haryanto et al., 2024), and cultural heritage (IFLA, 2018).

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Law No. 43 of 2007 on libraries in Indonesia has had a great impact in terms of increasing library transformation. Moreover, the application of the program of library transformation of 2018 on the social inclusion prepared by the National Library of the Republic of Indonesia has been carried out until the present day. The given program has a particular task that is to improve the community's well-being through the facilitation of library functions to the attainment of SDGs. Adoption of National Library Regulation Number 3 of 2023 on Library Transformation Based on Social Inclusion officially enhanced the National Library of the Republic of Indonesia's strategic vision of Socially Inclusive Libraries. This commitment can also be found in the National Library Strategic Plan (*Renstra*) 2025-2029, which is governed by and refers to the Coordinating Ministry for Human Development and Cultural of the Republic of Indonesia (Kemenko PMK) through Regulation Number 3 of 2025 concerning the Strategic Plan 2025-2029. It will serve as a reference point to public libraries in Indonesia, which will be developed to a great extent. *Renstra* 2025-2029 emerges as a valuable instrument for realising Indonesia Emas 2045 by transforming inclusive services. To enhance the curriculum for reading and literacy competency among the public as part of human resources development, the *Kemenko PMK* issues policies.

Even with these policies, there remains a rather large research gap. The majority of the literature available on libraries' contributions to the SDGs is normative and concerns the conceptual frames of action and prospects. In addition, such contributions are also afflicted with fragmentary studies. Authors mostly examine some specific loci or specific SDG dimension/goal (Patil, 2025; Bidwe & Waghmare, 2025; Gaikwad, 2025; Unegbu et al., 2023; Olatoye, 2024; Sadare et al., 2022; Shesha & Singh, 2024; Lahyani et al., 2024; Adepoju & Akobe, 2023; Bakare & Okuonghae, 2022; Aregbesola et al., 2023). The research has not adequately managed to portray the complexity of implementation in a real situation concerning regulatory frameworks and strategic plans at both the national and subnational levels and in all kinds of libraries, including the national library, the public library, and the community reading centre. Besides, the literature has not presented a comprehensive and consistent outlook of how the public libraries work in various systems of regional governance and even in collaborative models of implementation. The seven provinces with the highest scores of the RCI/IDSD Index are generally supposed to possess more institutional capacities and policies. However, how far the capacities of the effective use of public libraries in becoming the instruments of SDG achieving, is an open empirical question.

The research problem outlined in the research gap was addressed successfully by formulating the study question, which is: How are the strategic roles and implementation mechanisms of the SDGs mediated with the public libraries in the seven provinces with the highest RCI/IDSD Index score in Indonesia? By researching high-performing provinces, the study is bound to find out best practices, collaborative models of governance, situational challenges, and facilitating factors that can be important lessons to others. The research findings are anticipated to contribute to the theory and practical value in this study. On the theoretical side, the operationalization of the study will help to add the public library governance and localization of the SDGs literature information to a stronger and more empirical interpretation of how the local public librarians may contribute to the various regional development environments. Decision makers and the stakeholders concerned may use the result in implementing or modifying more targeted policies and strategic plans. Moreover, it may also be a societal service innovation in enhancing the public library as one of the stabilizers of sustainable innovation in Indonesia.

## 2. Literature Review

The role of the public libraries has long gone beyond their original, traditional purpose as book collections. These institutions are significant as agents of social change to sustainable development in bridging information gaps and empowering communities as informants. The United Nations has presented 17 Sustainable Development Goals (SDGs) as a smooth roadmap to global development in social, economic, and environmental aspects of sustainability through the 2030 Agenda (United Nations, 2015). It is against this backdrop that the public libraries have become institutional actors with unique abilities to work towards achieving several development objectives concurrently (IFLA & UNESCO, 2022).

### 2.1. Public Libraries as Development Institutions

The role of public libraries has been radically changed, making them places of inclusion as civic spaces where people of various backgrounds engage with each other on a level playing field, in accordance with the principles of inclusivity contained in the Sustainable Development Goals (SDGs). Scholarly data identifies libraries as important locations where equity and social interaction can be developed within communities (Kosciejew, 2020; Santos, 2023). Moreover, IFLA and UNESCO (2022) note that libraries contribute to all 17 SDGs in a holistic way, and they are dynamic sources of knowledge that support education, cultural exchange, and social cohesion that are vital to

sustainable communities (Williams-Cockfield and Mehra, 2023; Patil, 2025). Human rights Libraries are considered to be the institutions that protect fundamental rights and especially the right to access information (Meneses-Tello, 2017). This point of view is additionally supported by the research that terms libraries as civic commons, where democratic practice is facilitated by fair access to information and civic discussion (Stilwell, 2018; Chávez, 2018; Steele, 2025).

## *2.2. Contribution of Public Libraries to the SDGs*

The development of the public libraries has changed the nature of the social institutions that were used to offer cultural entertainments like folk tales, to a significant tool to disseminate universal knowledge and social change by offering all people access to information and ICT without discrimination. They, as information service providers, are also known to contribute to various Sustainable Development Goals (SDGs), and this goes to show that they are multidimensional in their approach to social, economic, and environmental sectors, with specific reference to partnerships in line with SDG 17. With SDG 3 (Good health and well being) selected, public libraries assist in the promotion of health literacy and health promotion programs by partnering with local health agencies and Non-Governmental Organizations (NGOs), such as vaccination campaigns, health screening, and prevention programs (IFLA, 2018; Khan, 2018; Patil and Kulkarni, 2019). In terms of SDG 4 (Quality Education), libraries are recognized to intensify access to education, digital literacy, and lifelong learning, and, therefore, human capital is empowered (Solanke, 2025; Abu et al., 2023). Also, libraries could contribute to the social inclusion SDG 5 (Gender Equality) and SDG 10 (Reduced Inequalities) by empowering disadvantaged populations, including women and jobless citizens, and closing the digital divide by providing access to information and digital technologies (Haryanto et al., 2024; Aregbesola et al., 2023). Moreover, community welfare, environmental awareness, and encouragement of local entrepreneurship are among the ways in which the public libraries can create sustainable communities, economies, and environment (SDGs 6-15) (Abu et al., 2023; Haryanto et al., 2024). They serve well for multi-stakeholder partnerships and alliances that are more sustainable and resilient to communities (Solanke, 2025). Regarding SDG 16 (Peace, Justice, and Strong Institutions), libraries lead to the inclusion of information, transparency, and accountability to the general population and support civic education, democracy, and the preservation of cultural heritage (Ingle and Sutar, 2025; Santos, 2023; Bidwe and Waghmare, 2025). Lastly, with SDG 17 (Partnerships for the Goals) in place, there are more partnerships between the public libraries to enhance service delivery, capacity development of their institutions, and promote sustainable development policies (Solanke, 2025; Bidwe & Waghmare, 2025).

## *2.3. Implementation Models and Challenges*

The idea of a library as a community center has become one of the most active patterns of improving civic engagement and resource access, though its conceptualization raises the issue of maintaining the main library operations and services. In this paradigm, the role of the libraries is instrumental towards establishing social interaction and cultural engagement, which contributes to the development of the prosocial behavior of communities (Talaverano & Jose, 2024). Rural Education and Development (READ) and other models that focus on ensuring the library services align with the community needs (Magar, 2024), and hybrid libraries with physical resources and a digital library provide additional support to civic activity and sustainable development of urban areas (Albader and AlSubaie, 2025). A comparative study involving six countries in Europe has shown that the libraries that act as community facilities show higher than average results in engagement (Audunson et al., 2019; Breen et al., 2019). The updated UNESCO Public Library Manifesto (2022) supports this view by having a direct connection to the Sustainable Development Goals (SDGs). Nevertheless, there are huge problems with the deployment of this model, especially in the developing nations. These are poor infrastructure, low access to the internet, low digital literacy, poor involvement of various communities, and all the above are limiting the ability of libraries to effectively fulfill their social functions. Most libraries have inadequate physical infrastructure (Bhanudas, 2025), and lack or have low access to the internet, which severely constrains the use of digital resources (Afolabi, 2018). Moreover, a lack of digital literacy among the staff and the users of the library decreases the ability to utilize the information and communication technologies (ICTs) (Sable & Mhaske, 2025). It is important to address these limitations with strategic planning, consistent infrastructure development, and special consideration on how to make libraries what they can become to best fulfill their role as an inclusive community space of engagement and development (Jumba & Dauda, 2025).

## *2.4. The Indonesian Context and Research Gap*

In the Indonesian setting, the study on the role of libraries in achieving the Sustainable Development Goals (SDGs) is mostly prescriptive and conceptual and lacks empirical dimensions. Current literature is also typically disjointed as it does not provide a wholesome understanding of SDGs but concentrates on individual cases or focuses on specific, individual dimensions of SDGs (Mahdi et al., 2020; Juniadi and Heriyanto, 2021; Suprianingrum and Heriyanto, 2021; Mustar, 2023; Irawati et al., 2025). In addition to that, the challenges of practical implementation, especially with respect to policy framework and strategic orientation set by national and subnational governments and library institutions, including the National Library, local libraries, and community reading centers, are not addressed in the literature. Top-down implementation processes are also not given much consideration. Therefore, the current literature has not offered an integrated and comprehensive perspective of how the operation of the public libraries is conducted in various governance situations, including the collaboration processes that form the base of SDG localization processes.

### 3. Methods

#### 3.1. Research Design

This research utilizes a mixed methods approach using a convergent parallel design to examine the role of public libraries in the achievement of the Sustainable Development Goals (SDGs). The first component involves the qualitative method of multiple case studies to examine the dynamics of policy implementation, collaboration, and the enabling and constraining factors in different regional contexts. In this study, the regional case selection was done intentionally, selecting the top seven provinces in the Regional Competitiveness Index (RCI)/*Indeks Daya Saing Daerah (IDSD)* 2025 published by the National Research and Innovation Agency (BRIN) (2026), as the Special Capital Region of Jakarta, Bali, Special Region of Yogyakarta, Banten, West Java, East Java, and Central Java.

#### 3.2. Data Collection and Analysis

##### 3.2.1. Qualitative Phase

To achieve qualitative data, a specified number of interviews were conducted, and a certain amount of paperwork was reviewed to guarantee the qualitative data verification. The key informants were purposely chosen to represent various groups of stakeholders, such as policy makers at the district level (2 informants) and village/urban village level (2 informants), and community leaders, included into formal and informal individuals (10 informants). Other informants were a representative member who happened to be the Deputy I of Library Materials Development and Information Services at the National Library of the Republic of Indonesia and a head of the Social Inclusion-Based Transformation (*Transformasi Perpustakaan Berbasis Inklusi Sosial/TPBIS*) program. In addition, there were 21 heads or representatives of accredited public libraries, serving as TPBIS partners, at provincial, regency/municipality, and village levels, including the community reading park. The sample was supplemented by the representatives of government offices (3 informants), one influencer and supervisor of village libraries and the community reading parks on the regency level, and one representative of the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration. A total of 49 interviewees were interviewed. Documents were analyzed: the documents that establish the policy; the development of a region; reports that establish the performance of the programs; reports that were performed and official media sources documents, and documents issued by the media. Data analysis was conducted using the NVivo 12 Plus, depending on the interactive model of Miles, Huberman, and Saldaña, which involves the condensed data, the displayed data, and the data that is drawn and verified to be used to give a conclusion. Two steps of coding of data were done. The coding in the first cycle was descriptive and used in vivo coding. The pattern coding was used to code the second cycle, and its development was based on creating themes used in the analysis. Later, a cross-case analysis was employed in order to obtain and differentiate patterns, similar attributes, differing attributes, and variations in contextual attributes from one province to another. The findings of the qualitative analysis were employed subsequently so as to structure and fabricate the framework that justified the variables and indicators and the conceptual outlines towards the aims of the quantitative analysis.

##### 3.2.2. Quantitative Phase

The aim of this second stage is to measure the results, besides justifying and generalizing the information that has been gathered during the first qualitative phase. The population to be used in the undertaking of this analysis was librarians working with the public libraries, librarians working in the libraries which are currently accredited, and also the librarians who work in the libraries which are currently aspects of the Social Inclusion-Based Library Transformation Program based in the Republic of Indonesia. The sampling of the 7 provinces in this research was purposive sampling and in an attempt to ensure that the research remained contextually unchanged, purposive

sampling was carried out on the identical 7 provinces that were carried out during the qualitative research. In this study, no evaluation of success bias was carried out on the sample because the sampling of the 7 provinces with the highest IDSD scores was deliberately carried out as the best role model and not to generalize success to all provinces in Indonesia (38 provinces), where this role model can be replicated in the provinces with the RCI/IDSD rank below it to the lowest, without ignoring adjustments to conditions and situations at the local level. Out of these 405 responses were found to be valid to use in the present analysis. Their measures of capacity are in terms of administration, people, training, resources, and infrastructure, and on services and accessibility, the measures include: accessibility and inclusion, environment, community involvement, partnerships, and their contributions to the SDGs (Sustainable Development Goals) in terms of people, planet, prosperity, and peace. At higher levels, SDGs are constructed in terms of general (Administration and Management) and partnership. To determine the power of relations among the variables, factors identified, and the most significant ones to the SDGs of Public Libraries, the data were modeled in Structural Equation Modeling (SEM), and standardized estimates were obtained.

### 3.2.3. *Integration of Qualitative and Quantitative Data*

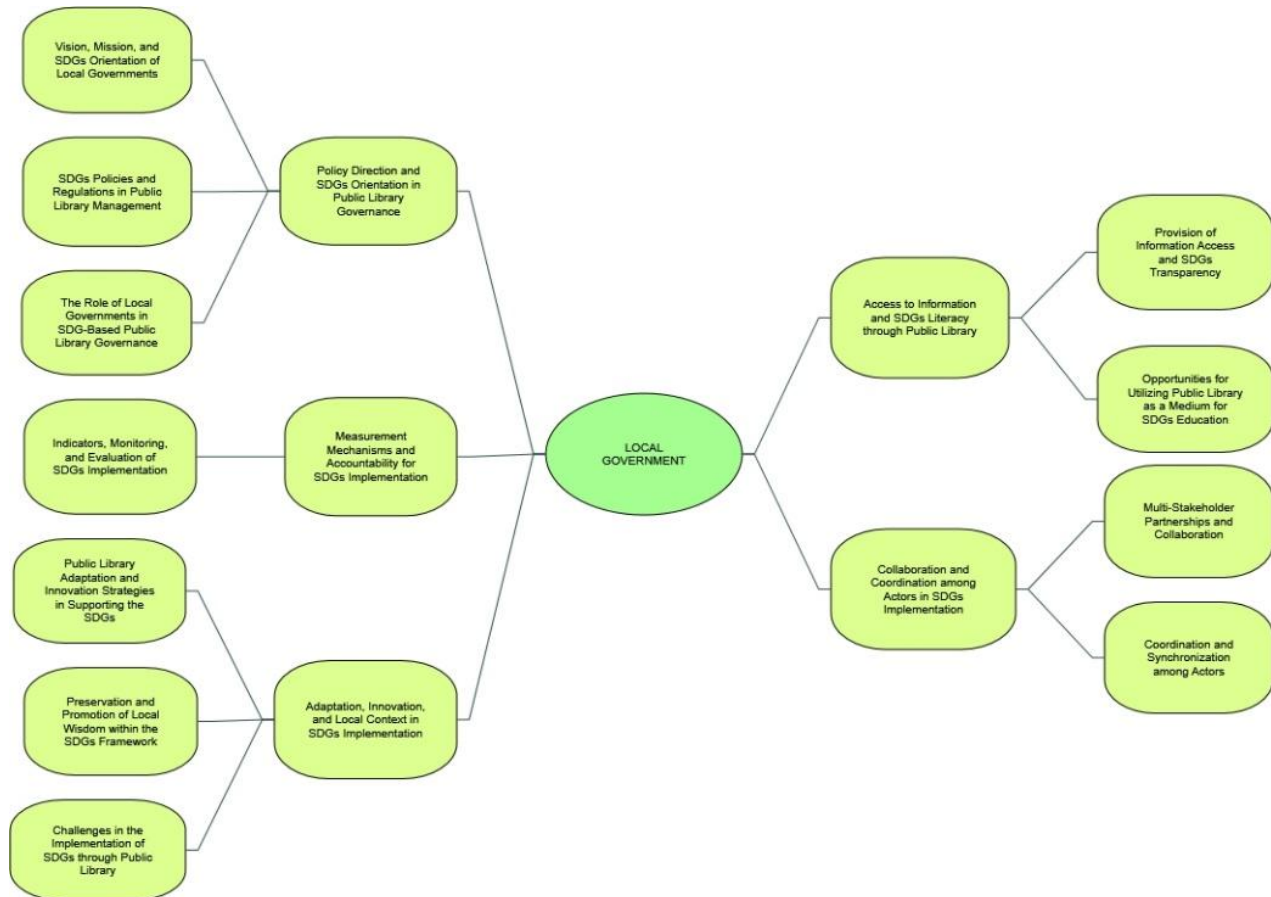
Qualitative and quantitative data were consolidated using four techniques that are: building, connecting, merging, and explaining. The quantitative data collection tool and framework were created in the process of qualitative data collection. During the connecting phase, there was maintenance of information in the same context and analytic units in both methods. In combining the qualitative and quantitative information, the patterns of the combination were explained and supported. During the phase of explaining, qualitative data provided a better explanation of the existing major quantitative findings in terms of being more materialized and tied to their context. Through the process, one can concur that the study does a good job of integrating the qualitative and quantitative methods to qualify as a mixed methods study.

## 4. Results and Discussion

The Sustainable Development Goals (SDGs) demanded that the regional libraries develop a systematic framework of policy that had to be institutionally committed and should have involved their stakeholders in coordination efforts with the view of implementing this structure. Local governments were very instrumental in incorporating SDG principles in the governance of libraries by, among other things, directing their policy, support through regulations, and making libraries instruments of sustainable development and not storage of information. The findings also revealed that the implementation process was effective when there was a sound measurement, monitoring, and evaluation mechanism to improve accountability and service responsiveness. The researcher discovered that programs in libraries needed not only modification but also innovation to achieve the success of applying local knowledge and cultural values in their activities. The regional libraries served as strategic points through which individuals were able to get access to information as they read about the Sustainable Development Goals (SDGs). Libraries then played the role of mediators who offered holistic resources and digital services as well as lifelong learning to change global development agendas into knowledge that was packaged and made available to the local communities. The results determined that there was a success in implementing SDGs using libraries since there were various stakeholders collaborating. The collaborations between the governments, schools, civil societies and individual people augmented the institutional capability, as well as facilitating the exchange of resources and enhancing library projects that transformed the libraries into key players in ensuring inclusion development through community-based strategies, see fig 1.

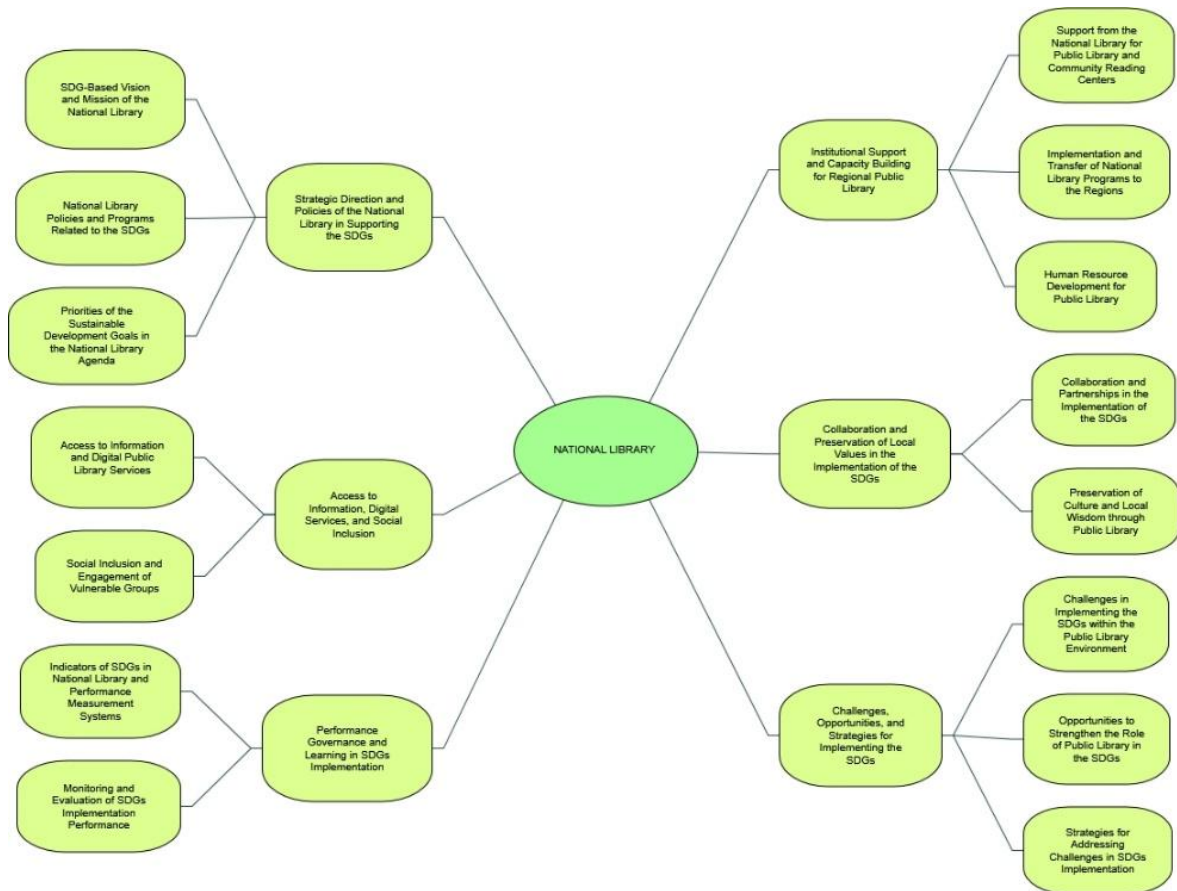
National Library of Indonesia emerged as an important organization that managed to address both the Sustainable Development Goals (SDG) implementation and governance by its national library programmes that were comparable to the SDG goals worldwide by the United Nations. The case study revealed that the institution served as a knowledge base whilst it operated as a policy organization implementing the concept sustainable development to libraries activities through its planning initiatives and policies and through its teaching activities. The findings also indicated how the National Library has helped to increase equitable access to information and enhance digital library services due to digital transformation programs, development of infrastructure, and inclusive delivery of services. The initiatives also assisted individuals of various backgrounds to gain access to information that served to close information gaps as well as empower the communities in the local setting. The National Library positioning itself as a critical institution that provided capacity building services to the local libraries using the technical support and training programs. The support enabled the national government to execute its policies at the local area. The research findings indicated that it is necessary that organizations collaborate with various stakeholders to enhance their SDG implementation processes even as they encounter challenges that emanate out of their institutional constraints and

technological gaps and regional capacity disparities. The National Library was a fundamental organization that converted international commitments of Sustainable Development Goals into tangible knowledge based initiatives, see fig 2.

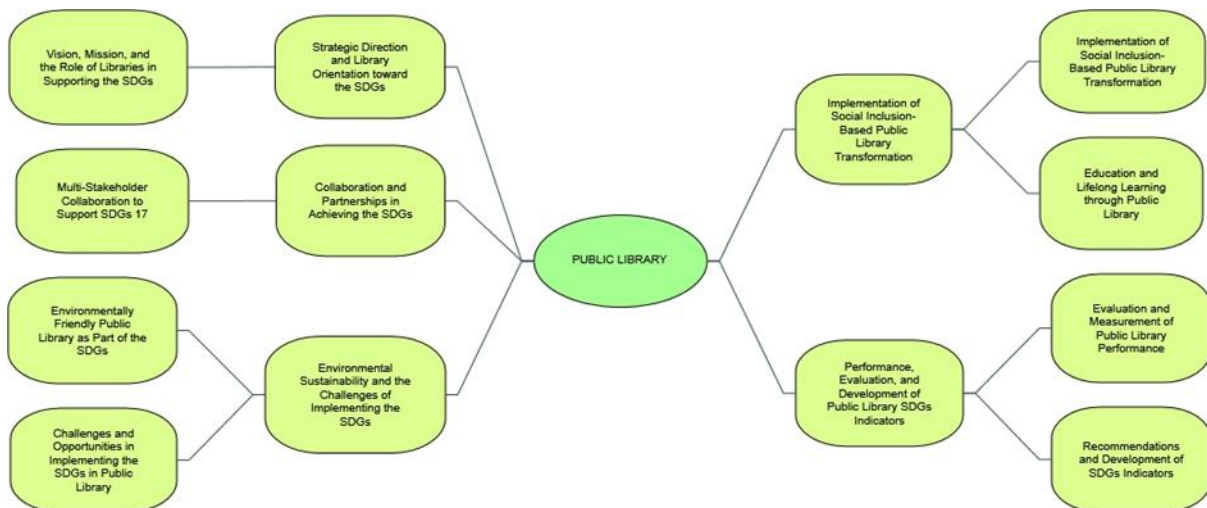


**Fig 1.** Local Governance and Implementation of Sustainable Development Goals (SDGs) through Public Libraries

Public libraries established themselves as a critical organization that assisted individuals in having access to the critical knowledge resources that would be required to attain the Sustainable Development Goals (SDGs), and their activities linked the global development efforts to the needs of the local communities. The library system has set its organizational structure by the virtue of common goals that allowed continuous access to information resources and access to education opportunities and social services programs and environmental education programs to continue operating in their operational centres as governed by the people. The findings also revealed that collaboration and multi-stakeholder partnership was a major dimension of this role. The networks developed by the public libraries incorporated government, educational institutions and non-profits as well as local community groups. Such networks allowed public libraries to increase their abilities in Sustainable Development Goals (SDGs) support that incorporated sharing of knowledge and collaborating on the implementation of Sustainable Development Goal 17. The environmental sustainability in the case of the public libraries was through their green building programs and their environment education and community education programs. The study demonstrated that organizations were confronted with various challenges that incorporated lack of adequate financing and the levels of institutional maturity and their necessity to remain in the rapidly evolving digital and social landscape. The transition to social inclusion library services created new practices of libraries that turned into community education learning epididrums that offered educational programs and training in digital literacy and social engagement. The program evaluation and monitoring systems development created mechanisms which allowed organizations to boost their accountability and program efficiency. The findings of the research proved that public libraries were an essential part of the Implementation of Sustainable Development Goals with their multiple activities, see fig 3.



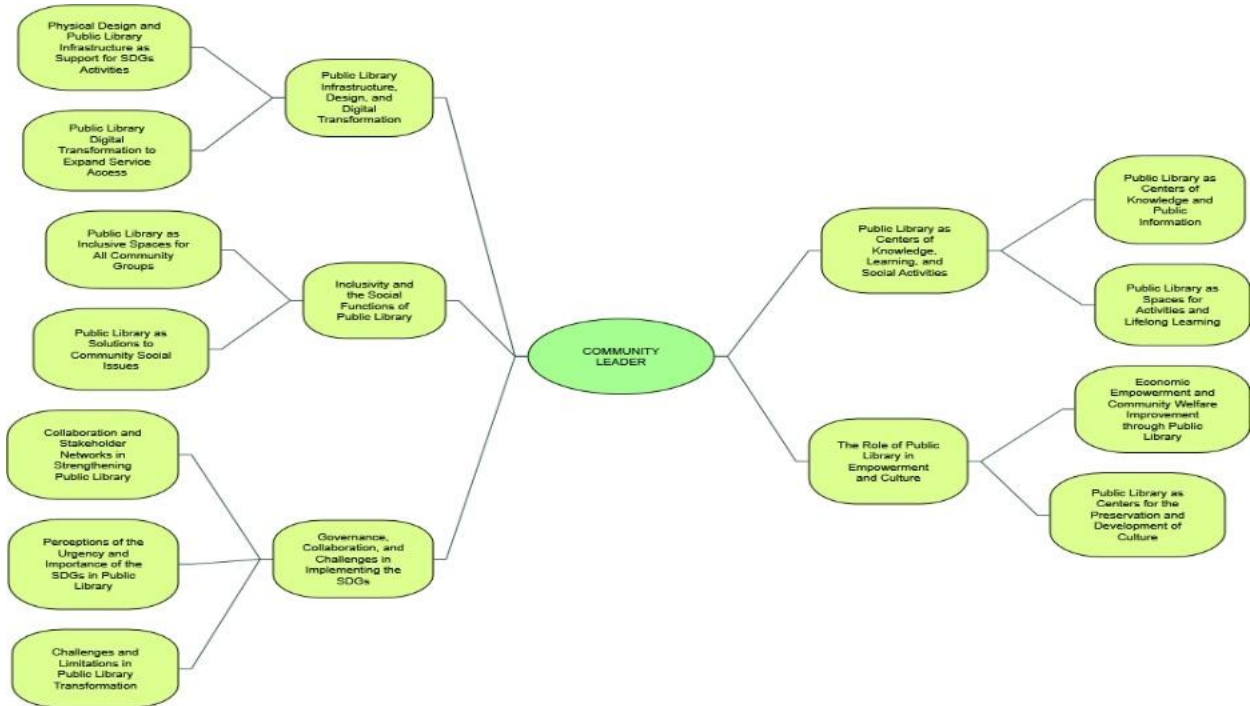
**Fig 2.** The Role of the National Library in the Governance and Implementation of the Sustainable Development Goals (SDGs)



**Fig 3.** The Strategic Role of Public Libraries in the Implementation of the Sustainable Development Goals (SDGs)

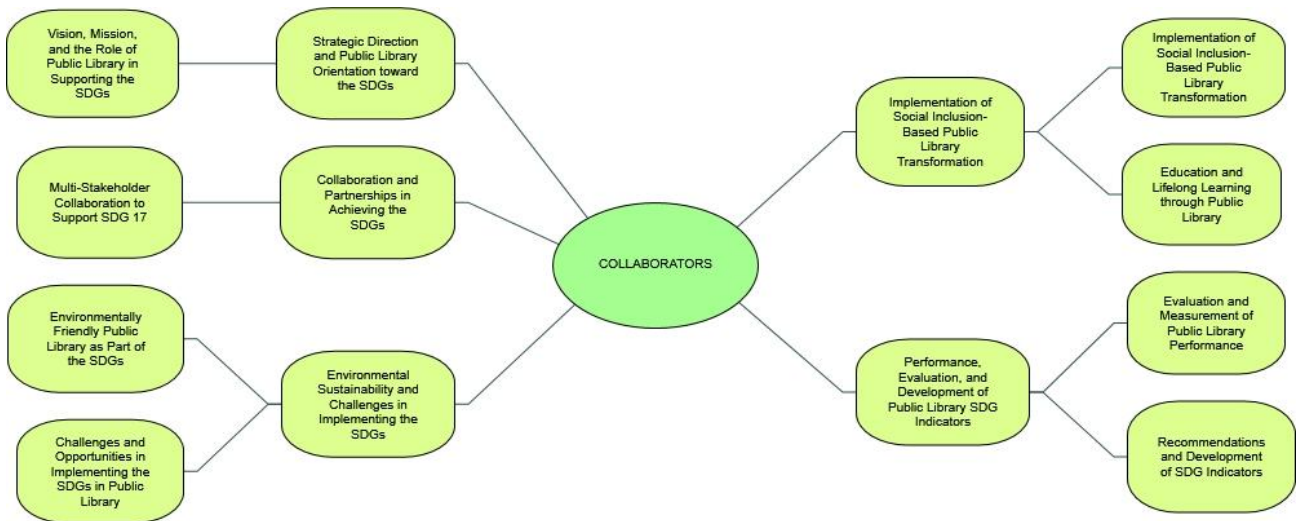
Public libraries now operate as community-based institutions that support Sustainable Development Goals through their information resources. Libraries operate as essential learning centers because their educational goals and operational methods match the Sustainable Development Goals. The results further showed that this transformation was driven by the development of infrastructure and digitalization. The library system developed better access through its enhanced physical facilities and online services, which helped the entire community to participate while providing digital access and equal information availability. Libraries function as inclusive social spaces because they

create learning environments accessible to all people which enables continuous education and community building. Libraries provided knowledge materials and training programs and business development assistance while protecting local traditions and community knowledge through their economic empowerment and cultural development functions. The research showed various problems which included resource shortages and technology limitations and different institutional capabilities and the need for better project management between stakeholders. The SDG initiatives faced implementation problems because these constraints limited their operational capacity and long-term viability. The research showed that public libraries achieve sustainable development through their digital transformation efforts which promote social inclusion and protect cultural heritage while they work together to manage their resources, see fig 4.



**Fig 4.** The Transformation of the Role of Public Libraries in Supporting the Sustainable Development Goals (SDGs)

Libraries were a strategic collaborator in enforcing the Sustainable Development Goals (SDGs) at the local level by linking global development and local needs. By ensuring open access to information, educational resources, and community-based programmers, libraries contributed to knowledge generation and dissemination, civic participation and social inclusion, thus enabling the local translation of SDG priorities. The results also showed that libraries provide equitable access to information through physical and digital infrastructures, and are the gateway for digital literacy, lifelong learning, and public awareness of the Sustainable Development Agenda. Libraries that bring people together for social cohesion also promote community empowerment through training programs, learning and development workshops, and other community functions. Similarly, they advocate the preservation of local knowledge. The contribution of library experts was also seen as the effectiveness of multi-stakeholder collaboration. Through partnerships with local governments, educational institutions, civil society, and community organizations, libraries were able to boost education and economic empowerment and foster community development. The report also pointed out several challenges, including institutional capacity, funding, technological, and low public awareness of the strategic role of libraries, among others. Strong policy support, increased investment, and more integrated collaborative networks were needed to meet these challenges. The results indicate libraries contribute to advancing the UN SDGs at the local level through providing better access to knowledge, increasing social inclusion, and supporting community-based sustainable development, see fig 5.



**Fig 5.** The Role of Public Libraries in Supporting the Sustainable Development Goals (SDGs) at the Local Level

*4.1. Comparative Analysis of the Role of Public Libraries and Local Government Policies in Supporting the Sustainable Development Goals (SDGs) in Five Provinces in Indonesia*

Table 1 (see appendix) shows that the public library has a strategic role in supporting SDGs in 7 provinces in Indonesia. It enhances literacy, broadens access to information and encourages lifelong learning among people. In the Capital City Special Region of Jakarta, Bali, and Special Region of Yogyakarta, the functions of the library business are not only an information center. But also play a role in cultural preservation, digital literacy, and community engagement. The provincial local government policies are part of regional development, especially in areas. It was also discovered that local governments contributed through their regulatory, planning, facilitative, and coordinative roles. The policies adopted by the provinces vary too, where Special Capital Region of Jakarta emphasizes Digitalization, Bali emphasizes Cultural Preservation, DI Yogyakarta Legal framework for greater impact on inclusive services and collaboration. Similarly, Banten, West Java, East Java, and Central Java created a variety of programs to encourage digital literacy, social inclusion, and community empowerment through innovative library programs.

Programs of SDG from other Provinces have given emphasis on literacy development, digital transformation and social inclusion. Library services in both places and online broaden access to information and also enhance community capacity. The analysis as a whole showed strong correlations between public library programming and the SDGs, especially SDGs 4, 10, 11, 16 and 17. Libraries were identified as inclusive public spaces that provide access to knowledge, contribute to strengthening the literacy culture and enable civic participation. The impact of libraries’ response to the pandemic was further enhanced through multi-stakeholder collaboration involving governments, educational institutions, communities, and other partners establishing them as key intermediaries between policy and community needs for sustainable development at the regional level.

*4.2. The Role of Ministries in Policy Planning, Program Implementation, and Library Collaboration to Support the SDGs*

Based on the analysis of ministerial roles and national policy coordination (Table 2) (see appendix), the implementation of SDGs through libraries in Indonesia was very much facilitated by the existence of cross-sectoral policies and national strategic planning. The results indicate that several ministries contributed by integrating literacy development, knowledge access, and community empowerment into national programs with the National Library Strategic Plan (2025–2029) serving as a critical policy reference linking library development and national agendas. In fiscal terms, the findings show that Ministry of Finance support library development on performance-based budgeting and intergovernmental transfers which make the regional government was able to expand the service and implement the social inclusion-based program. National planning institutions at the strategic level have reportedly mainstreamed the SDGs into development frameworks to integrate library programs with broader targets related to education, innovation, and social inclusion. Moreover, sectoral ministries played complementary roles. Rural development initiatives have supported village libraries and community-based literacy programmers while governance policies have

strengthened the integration of library development into regional planning systems. Through collaboration with public libraries, higher education institutions contributed in knowledge dissemination, training and community services. The findings stressed the need for coordination frameworks that integrate strategies on literacy, culture and human development. Libraries were touted as places for lifelong learning, cultural preservation and access to knowledge for all, through initiatives like digitalization and creation of thematic collections. The study concludes that strong inter ministerial coordination, alignment of policies and multi stakeholder involvement are essential to maximizing the contribution of libraries in realizing SDGs, advancing education, social inclusion, cultural sustainability and partnerships.

#### 4.3. Measurement Model Quantitative Results

The results of the measurement model (Table 3, Table 4, Table 5, Table 6, Table 7) (see appendix) indicated that all constructs demonstrated strong and acceptable standardized estimates, confirming the validity of the indicators used in the study.

##### *Convergent Validity and Construct Reliability*

Within the Administration construct, standardized loadings ranged from 0.783 to 0.934, with a Composite Reliability (CR) of 0.977 and an Average Variance Extracted (AVE) of 0.860, confirming strong internal consistency and convergent validity. Reporting on the implementation of service programs and monitoring and evaluation of service program implementation emerged as the most prominent indicators, suggesting that accountability and performance monitoring constitute central dimensions of SDG-oriented administrative practices, while adequate budget and funding, although acceptable, contributed relatively less compared to other administrative components.

**Table 4.** Convergent Validity and Construct Reliability Factors Influencing Public Library Success in Achieving SDGs

Latent Variable	Indicators	Std. Loading (Range)	CR	AVE
Administration	AM1–AM7	0.783 – 0.934	0.977	0.860
Access Inclusion	AI1–AI4	0.908 – 0.941	0.980	0.923
Environment	EV1–EV2	0.903 – 0.928	0.952	0.908
Resource	RS1–RS4	0.875 – 0.948	0.976	0.911
Staff	ST1–ST3	0.885 – 0.960	0.975	0.929
Infrastructure	IF1–IF6	0.859 – 0.949	0.983	0.906
Community Engagement	CE1–CE2	0.795 – 0.911	0.908	0.833
Partnership	PR1–PR3	0.910 – 0.965	0.979	0.940
Training	TR1–TR3	0.902 – 0.930	0.969	0.914

The Staff construct demonstrated high internal consistency, with standardized loadings ranging from 0.885 to 0.960, a CR of 0.975, and an AVE of 0.929. These findings indicate that librarians' understanding of the SDGs, their awareness of institutional roles, and their welfare and motivation are all critical in supporting SDG implementation. Similarly, the Training construct showed strong measurement properties, with loadings ranging from 0.902 to 0.930, a CR of 0.969, and an AVE of 0.914, with stakeholder training yielding the highest estimate and highlighting the importance of engaging external actors alongside internal capacity-building efforts.

For the Resource construct, standardized loadings ranged from 0.875 to 0.948, with a CR of 0.976 and an AVE of 0.911, while the Infrastructure construct yielded loadings from 0.859 to 0.949, a CR of 0.983, and an AVE of 0.906. Both constructs exceeded the widely accepted thresholds of CR > 0.70 (Hair et al., 2019) and AVE > 0.50 (Fornell & Larcker, 1981), with adequate virtual resources and environmentally friendly building design identified as the most influential indicators, underscoring the importance of both digital capabilities and sustainable physical environments in supporting SDG-based library services.

The Access and Inclusion construct exhibited loadings from 0.908 to 0.941, a CR of 0.980, and an exceptionally high AVE of 0.923, confirming that inclusive access, digital accessibility, and responsiveness to community needs are essential and well-captured elements of effective service delivery. The Environment construct showed consistently high loadings (0.903–0.928), with a CR of 0.952 and an AVE of 0.908, reflecting the strong integration of environmentally responsible practices such as emission reduction and the promotion of pro-environmental behaviour.

In the Community Engagement construct, loadings ranged from 0.795 to 0.911, with a CR of 0.908 and an AVE of 0.833, indicating acceptable yet slightly more variable measurement compared to other constructs. Hosting public

dialogues demonstrated a stronger loading (0.911), whereas establishing branch libraries or information centers showed a comparatively lower estimate (0.795), suggesting some variability in the effectiveness of outreach strategies. The Partnership construct yielded the highest loading range in this tier (0.910–0.965), with a CR of 0.979 and an AVE of 0.940, with community collaboration emerging as the most influential indicator, emphasizing the critical role of collaborative networks in advancing SDG initiatives.

#### *Outer Loadings of Library Service Indicators*

At the higher-order construct level, the SDG dimensions of People, Planet, Prosperity, and Peace all exhibited exceptionally strong measurement properties. The People construct demonstrated loadings from 0.875 to 0.920, a CR of 0.992, and an AVE of 0.889, while the Prosperity construct showed loadings from 0.781 to 0.956, a CR of 0.990, and an AVE of 0.902, collectively indicating that the social and economic contributions of libraries are robustly captured within the model. The Planet construct yielded loadings from 0.894 to 0.936, a CR of 0.988, and an AVE of 0.912, reflecting the strong integration of environmental sustainability within library services. The Peace construct performed similarly well, with loadings from 0.875 to 0.962, a CR of 0.985, and an AVE of 0.927, underscoring the role of libraries in fostering social cohesion and inclusive governance.

**Table 5.** Outer Loading Library Service Indicators for Achieving SDGs

<b>Construct</b>	<b>Indicators</b>	<b>Std. Loading (Range)</b>	<b>CR</b>	<b>AVE</b>
Peace	PC1–PC5	0.875 – 0.962	0.985	0.927
General Indicators (Administration and Management)	AJ1–AJ7	0.847 – 0.943	0.984	0.899
People	PS1–PS15	0.875 – 0.920	0.992	0.889
Partnership	PT1–PT3	0.937 – 0.956	0.980	0.943
Planet	PL1–PL8	0.894 – 0.936	0.988	0.912
Prosperity	PE1–PE11	0.781 – 0.956	0.990	0.902

The General Indicators (Administration and Management) construct demonstrated satisfactory to high loadings ranging from 0.847 to 0.943, a CR of 0.984, and an AVE of 0.899, with collection management and service management identified as key institutional drivers. The higher-order Partnership construct exhibited the highest AVE in this group at 0.943, with loadings from 0.937 to 0.956 and a CR of 0.980, particularly highlighting community collaboration for SDG programs as the most central indicator and underscoring the importance of multi-level and cross-sectoral collaboration in strengthening SDG implementation.

#### *Discriminant Validity via HTMT Ratios*

Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio, where values below 0.90 are generally considered evidence of adequate discriminant validity (Henseler et al., 2015). As shown in Table 6, HTMT values among the first-order constructs (factors influencing public library success) ranged from 0.740 to 0.891. The lowest HTMT value was observed between Community Engagement and Access and Inclusion (0.740), suggesting these two constructs are relatively distinct from one another. The highest HTMT value was found between Training and Community Engagement (0.891), which, while approaching the 0.90 threshold, still remains within the acceptable boundary, indicating that all first-order constructs maintain sufficient discriminant validity.

As shown in Table 7, HTMT values among the second-order library service indicator constructs ranged from 0.761 to 0.898. Notably, the highest HTMT ratio was observed between People and Partnership (0.898) and between People and Planet (0.892), both approaching but not exceeding the 0.90 threshold. These findings suggest that while the SDG dimensions share conceptual overlap — which is theoretically expected given the integrated nature of the 2030 Agenda — each construct retains sufficient distinctiveness to be treated as a separate latent variable in the model. The lowest HTMT value was found between General Indicators and Peace (0.761), indicating these two constructs are clearly differentiated. Overall, the HTMT analysis supports the discriminant validity of all constructs at both the first-order and second-order levels.

The measurement model results provide strong evidence of reliability, convergent validity, and discriminant validity across all constructs. All CR values exceeded 0.90, all AVE values exceeded 0.83, and all HTMT ratios remained below 0.90, collectively confirming that the measurement instruments are both internally consistent and sufficiently distinct to proceed with structural model analysis.

**Table 6.** Heterotrait-Monotrait ratio of Factors Influencing Public Library Success in Achieving SDGs

	Access inclusion	Administration	Community engagement	Environment	Infrastructure	Partnership	Resource	Staff	Training
Access inclusion									
Administration	0.862								
Community engagement	0.740	0.824							
Environment	0.829	0.877	0.804						
Infrastructure	0.792	0.803	0.835	0.835					
Partnership	0.814	0.859	0.836	0.836	0.817				
Resource	0.839	0.866	0.809	0.838	0.803	0.833			
Staff	0.785	0.843	0.858	0.826	0.845	0.852	0.862		
Training	0.768	0.817	0.891	0.830	0.870	0.842	0.807	0.858	

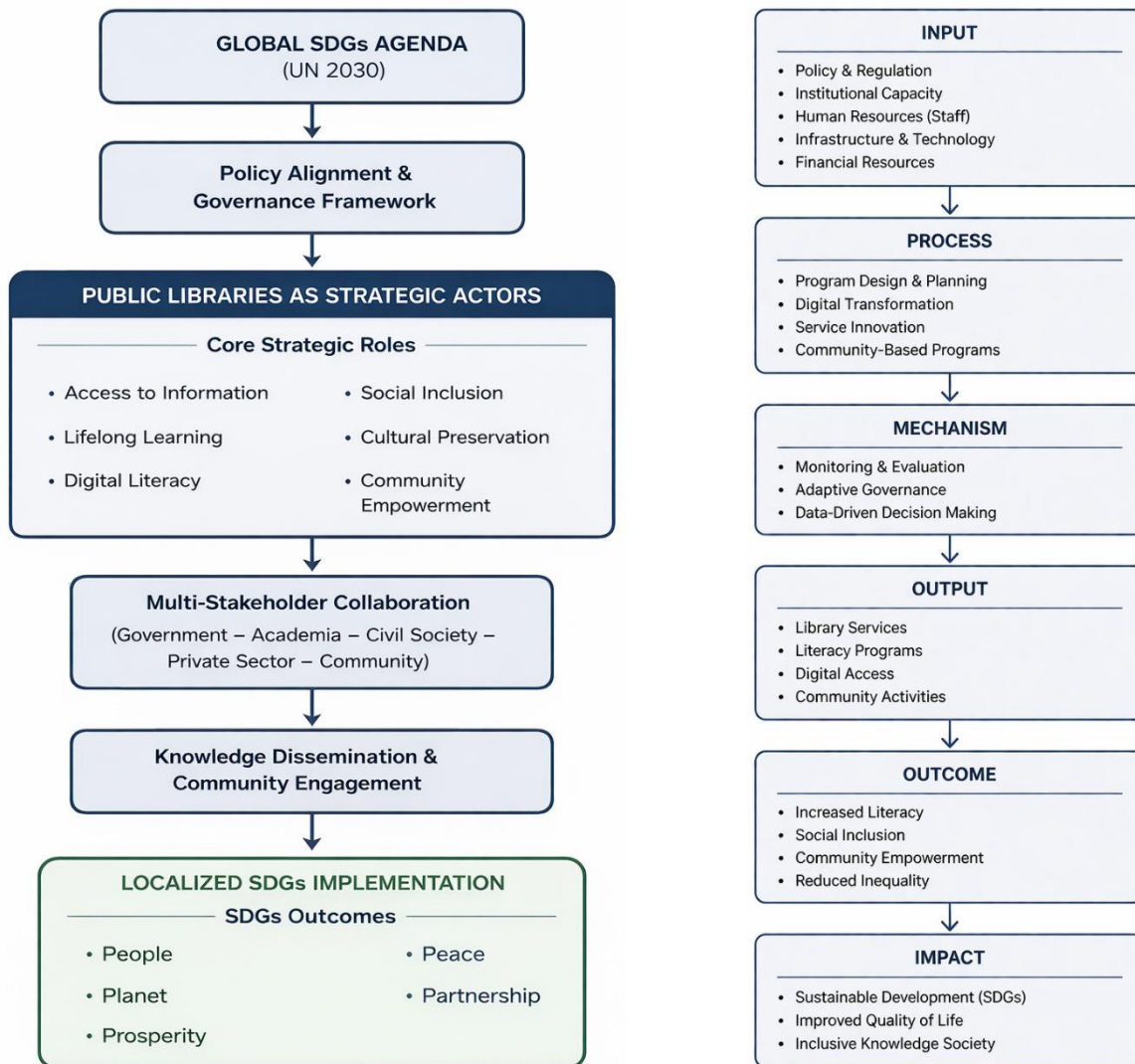
**Table 7.** Heterotrait-Monotrait ratio of Library Service Indicators for Achieving SDGs

	General indicators	Partnership	Peace	People	Planet	Prosperity
General indicators (Administration and Management)						
Partnership	0.790					
Peace	0.761	0.825				
People	0.825	0.898	0.873			
Planet	0.775	0.870	0.839	0.892		
Prosperity	0.786	0.830	0.799	0.851	0.811	

4.4. Mixed Methods Integration Results

The combination of qualitative research and quantitative research produced results that effectively demonstrated how libraries help achieve Sustainable Development Goals (SDGs) through their library services. The library governance system, which operates under Sustainable Development Goals (SDGs), requires multiple interconnected dimensions, which include policy frameworks, institutional capacity, access to information and digital transformation, and stakeholder collaboration. The qualitative research results showed that libraries need to establish governance systems while obtaining institutional support and maintaining stakeholder partnerships to achieve effective Sustainable Development Goals (SDG) implementation. The quantitative results provided empirical validation for these insights through their demonstration of high standardized estimates along vital construct elements, which included administration and staff, training and resources and infrastructure. The Administration construct showed high monitoring evaluation and reporting elements, which verified that accountability systems functioned as essential components of proper governance. The Staff and Training constructs showed strong estimates, which proved that human resource capacity served as a fundamental element for implementation success because librarians needed to understand SDGs and stakeholder involvement. The integration demonstrated that access and inclusion, together with digital transformation, served as essential components of the research. The qualitative research results showed that libraries functioned as accessible spaces that widened knowledge distribution while enabling users to learn about Sustainable Development Goals (SDG) through their physical and online offerings. The Resources, Infrastructure, and Access and Inclusion constructs achieved high estimates, which demonstrated the relationship between digital resource access and infrastructure adequacy and inclusion.

The two datasets showed that environmental sustainability and social functions had vital importance for their results. The Environment construct showed strong quantitative results, which matched the qualitative evidence about environmentally responsible practices and community-based initiatives. The library functioned as a community engagement center which provided social spaces for everyone, this was proved through their measured community engagement and SDG-related People and Prosperity activities which showed their strongest result. The research showed that libraries helped people from different social backgrounds to achieve social inclusion and economic empowerment while they also supported community development.



**Fig 6.** Strategic Role Flow Model of Public Libraries in SDGs (left), Implementation Flow Model of SDGs through Public Libraries (right)

The research found that partnerships and collaboration work as essential components for both qualitative and quantitative analysis. The assessment determined that multi-stakeholder collaboration functions as a primary element which enhances institutional capacity and maintains program operations. The quantitative results confirmed this observation because the Partnerships construct and higher-order partnership indicators showed one of the highest standardized estimates in community collaboration assessment. The research proved that collaborative networks carried both theoretical value and practical importance for libraries which used them to implement sustainable development goals.

The integration process showed how national and local governance systems operate at a foundational level. The study results showed that National Library and inter-ministerial coordination functions as a main strategic element which drives policy development while permitting local implementation to proceed. The three elements received quantitative validation through strong estimates which measured the general policy indicators and planning indicators and institutional management indicators. The study identified three cross-province differences which included digitalization differences and cultural preservation differences and regulatory framework differences and these differences matched with particular indicators which showed how different regions implemented their programs. However, the integration also highlighted persistent challenges. Qualitative findings pointed to limitations in resources, technological disparities, and uneven institutional capacity, which were partially reflected in comparatively lower quantitative estimates in indicators such as budget adequacy and branch library development. These findings

indicated that while the overall model demonstrated strong validity, disparities in capacity and resource distribution remained important constraints.

#### *4.5. Governance and Implementation of Sustainable Development Goals (SDGs) through Regional Libraries*

The contemporary governance and execution of the Sustainable Development Goals (SDGs) by means of regional libraries needs adjustive governance, creativity, and the sensitivity to local circumstances. Similar to the adoption of low-cost service innovations, market-based programmes, and co-working spaces, public libraries have become vibrant learning centres within the community that promotes literacy, education, and economic empowerment of the community. This shift corresponds with the idea of libraries as social infrastructure and knowledge commons, which enable the community to build its capacity and develop in an inclusive way. Nevertheless, there are still major structural and institutional issues such as an inadequate regulatory framework, funding, infrastructure, and incompetence in the SDG-related human resources. Poor cross-sectoral alignment and accelerated technological advancement contribute to these limitations in order to form the most advantageous developmental responsibility of libraries. Governance-wise, this is indicative of deficiencies in collaborative governance and institutional capacity, where effective governance is required based on coordination, collective understanding, and continued engagement of the stakeholders (Ansell and Gash, 2008). Local governments are also policy leaders because they can ensure library development aligns with regional priorities, especially SDG 4 (quality education) and SDG 8 (decent work and economic growth), which is in line with the principle of multi-level governance that puts vertical and horizontal policy alignment in priority (Hooghe & Marks, 2003). Additionally, the cooperation of many stakeholders improves resource mobilization and sustainability. Participatory approaches, community feedback, and data-driven decision making are also necessary as adaptive governance mechanisms in order to ensure relevance to the context, which is a virtue of flexibility and ongoing learning (Folke et al., 2005). E-learning tools and online services have provided digital transformation that leads to equitable access to information, both SDG 4 and SDG 9, but digital inequities in information access are manifested by inequities in infrastructure and users capacity. Besides, effective monitoring and evaluation systems, such as including SDG indicators into the scope of library performance systems and incorporating them into policymaking, strengthen the use of evidence-based policymaking, accountability, and ensuring institutional legitimacy. All in all, successful implementation of SDGs by using regional libraries requires political determination, policy stability, and institutionalization. The efforts of integrating libraries within the regional development plans with the help of constant investments and long-term vision make libraries more resilient in terms of their inclusion of knowledge and facilitating socio-economic inclusion of communities and sustainable economic growth.

#### *4.6. The Role of the National Library in the Governance and Implementation of the Sustainable Development Goals (SDGs)*

According to the SDG governance, the role of the National Library of the Republic of Indonesia is central because it helps to connect the national policy commitments to the subnational ones through three strategic pillars: digital transformation, social inclusion, and institutional capacity building. The National Library increases fair access to information, especially through online platforms like iPusnas, Indonesia OneSearch (IOS), e-Resources, and Bintang Pusnas, and encourages digital literacy and sustainable digital transformation. This is in line with the international framework put forward by IFLA (2015) and Aabø and Audunson (2012). The National Library uses the Social Inclusion-Based Library Transformation Program (TPBIS) to operationalize social inclusion through the application of marginalized groups such as persons with disabilities, women, and vulnerable groups, making libraries their public spaces and social development engines. This strategy also promotes various SDGs such as poverty elimination, quality education, gender equality, and inequalities reductions. This is in line with the research result by Mahdi et al. (2020). What distinguishes this study from the research conducted by Mahdi et al. (2020) is that this study emphasizes the strategic model from the administration and management side to implementation, both qualitatively and quantitatively, with the results integrated. Mahdi et al.'s (2020) study was limited to qualitative implementation.

Regarding the area of capacity building and regional governance, the National Library facilitates the process of strengthening the professional and social roles of librarians by providing technical guidance (as well as mentoring, i.e., SIM-TPBIS); the establishment and development of human resources. The implementation of SDG is also supported by penta-helix cooperation among government, academia, the private sector, communities, media, and international organizations in addition to cultural preservation by means of digitizing manuscripts of the Nusantara. Although there is the challenge of digital infrastructure gaps, inequality in human resource strength, and lack of

support by the local government, more opportunities brought by digitalization and the development of AI help to foster further innovation. Another performance measure that applies to SDG aligned performance measures and monitoring and evaluation frameworks is the use of SDG aligned indicators and comprehensive monitoring and evaluation, as well as to facilitate evidence-based policymaking and institutional responsibility. At the macro scale, the National Library provides policy consistency associated with national and regional development via vertical integration of governance and aligning literacy, digital inclusion, and community empowerment under SDGs. This model of integrative governance places libraries as strategic knowledge bases and critical players in governance in the promotion of inclusive and sustainable development in Indonesia.

#### *4.7. The Strategic Role of Public Libraries in the Implementation of the Sustainable Development Goals (SDGs)*

It brings the public libraries into the list of participants in SDG governance by offering strategic performance evaluation systems that can be transparent and accountable. Outcome-based indicators (Community Literacy Development Index and Public Satisfaction Surveys) are used to make institutions more accountable and aligned to global standards. This is in line with the international framework put forward by Aabø & Audunson (2012) and Pateman & Williment (2016). This is a manifestation of the values of new public governance, which lay stress on transparency, accountability, and performance-based management. The Social Inclusion-Based Library Transformation model supports the process of turning libraries into inclusive and empowering spaces of the community. Equal access services, skills training, and disability-friendly facilities have seen the libraries being transformed into active contributors of contextual learning and social change in regard to the public sphere theory as libraries serve as spaces of democracy where people exchange knowledge. This is in line with the international framework put forward by Jochumsen et al. (2012) and Vårheim (2014). The multi-stakeholder collaboration has also become one of the major mechanisms in the fortification of SDG implementation. The model of penta-helix with the involvement of government, private sector, academia, communities, and media improves the level of program effectiveness, mobilization of resources and sustainability and defines libraries as strategic points in larger development networks. This is in line with the international framework put forward by Kranich (2005) and IFLA (2015). This is aligned with the theory of collaborative governance that insists on cross-sectoral cooperation in solving difficult issues. It adds multidimensionally to SDGs because, in supporting poverty eradication (SDG 1), good education (SDG 4), inequalities 10) and economic growth (SDG 8), digital literacy, skills development, and access to economic information are supported in public libraries. They endorse sustainable cities (SDG 11), institutional transparency (SDG 16), and partnerships (SDG 17), as well, indicating the capability approach, in which access to knowledge will boost human development. The concept of environmental governance is also combined with the concept of the Green Library, such as digitalization, energy-intensive infrastructure, waste management (3R), and sustainability education, even though it is still facing difficulties in terms of funding and infrastructure. This is in line with the international framework put forward by Antonelli (2008) regarding green libraries. Nevertheless, there are still structural issues such as the aspect of digital illiteracy, inadequate funding, and institutional capacity inequity. The solutions of these include an increased policy integration, sustained human resource development, and lasting impact assessment, whereas digital innovation and collaboration make important opportunities. By and large, with the guiding hands of laws like the Law no. 43/2007 and international standards of IFLA, the role of the public libraries has been clustered to serve as impartial and robust knowledge base towards sustainable growth in Indonesia.

#### *4.8. The Transformation of the Role of Public Libraries in Supporting the Sustainable Development Goals (SDGs)*

The results of this study demonstrate that public libraries have evolved into adaptive and inclusive agents for SDG implementation. This transformation is reflected in community-responsive infrastructure—such as flexible spaces, training facilities, and mobile services—positioning the library as a local development hub. This evolution aligns with the four-space model proposed by Jochumsen et al. (2012), which encompasses learning, inspiration, meeting, and performative interaction spaces. These evolutions are consistent with the model of four spaces which provides libraries with the functions of learning, inspiration, meeting, and performative interaction. In the system of collaborative governance, libraries play an important role in mediating government, non-governmental, corporate, and community organizations, which increases access to programs and makes them more relevant (Vårheim, 2014). They also help in enhancing local economies on entrepreneurship training, digital marketing literacy and access to information by MSMEs and agribusiness sectors, which accurately comprises capability approach, which recognizes access to knowledge as the factor that enhances welfare improvement (Aabo and Audunson, 2012). In addition, libraries serve as a culture-saving establishment and shared body of knowledge application, ultimately preserving local knowledge in addition to delivering practical information to the industry (agriculture, fisheries, micro-

enterprises) (Kranich, 2005; Pateman & Williment, 2013). Libraries can play their role as inclusive spaces by offering social interaction and knowledge sharing due to their character as inclusive public spaces, which provide a safe and welcoming environment to the different communities through inclusive services, such as disability-friendly facilities and flexible access, among other elements (IFLA, 2018). This shift also places public libraries in a more problem solving role in the community, allowing dialogue, consultation and sharing of knowledge with the community that allows them to engage more effectively with local challenges and make the community resilient. Nevertheless, there are ongoing issues, such as digital divide, poor physical access, and presence of low service use. Such limitations highlight why digital transformation is necessary constantly, with online services, digitalization of collection, and increased digital literacy being the ways to increase the influence of libraries in contributing to SDG realization. Altogether, public libraries have transformed into diverse, customary, and community-driven organizations that incorporate infrastructure creativity, cooperative authority, cultural conservation, and computerization to develop sustainably.

#### *4.9. The Role of Public Libraries in Supporting the Sustainable Development Goals (SDGs) at the Local Level*

This research results suggest that local-level libraries hold a strategic role in advancing the SDGs by enhancing universal access to literacy and knowledge. In this context, libraries drive diverse forms of literacy—including digital, financial, health, environmental, and entrepreneurial literacies—thereby positioning literacy as an embedded social practice within the community's day-to-day life (Pateman and Williment, 2013). This multifaceted approach directly amplifies the library's capacity to act as an engine for sustainable development. This goes in keeping with the idea of information literacy as a source of empowerment and sustainable development. The role is also reinforced by the developments of digital transformation, where the accessibility of digital libraries, free internet, and connection with the Village Information Systems (*Sistem Informasi Desa/SID*) enhances the reach of the services and makes libraries local centers of knowledge and data, which is in line with the principles of digital inclusion. In terms of governance, SDG-based performance indicators are an opportunity as well as a challenge to develop. This gap in terms of depriving library contributions of systematic and responsive measurements due to lack of contextual indicators and integrated reporting systems highlights the topicality of results-based management (RBM) and data-driven evaluation. Moreover, the minimal regulatory frameworks restrict the strategic placement of libraries, which creates the necessity of enhancing the integration of policies in the regional planning tools like RPJMD and institutional strategies. Libraries are also the keepers of local knowledge and cultural heritage in documenting manuscripts, local history and cultural values and therefore enhancing community identity and sustaining cultural development. These functionalities are operationalized in terms of literacy programs and training programs, opportunities of budgetary allocation, integration of SDGs in village-level activities, including thematic reading areas and services of mobile libraries. Additionally, the research findings indicate that public libraries promote social transformation through SDG advocacy, education, and inclusive economic empowerment. This function strongly aligns with social capital theory, which emphasizes the generation of trust, institutional networks, and community engagement within public spaces (Vårheim, 2014). By leveraging this social capital, libraries successfully bridge marginalized populations with sustainable development opportunities (IFLA, 2018). Nevertheless, there are still structural barriers in the way of effective implementation of SDG in the forms of administrative burdens, low ICT infrastructure, urban-rural inequalities, poor inter-institutional coordination, and low prioritization in development agendas. The solution to these problems will lie in the adaptive form of governance, such as hybrid service model, life-long capacity building of librarians, and enhanced cross sector cooperation that will guarantee the sustainability and resilience of libraries as transformative institutions.

#### *4.10. Planning Systems, Indicators, and SDG Implementation*

Planning and results of indicators reveal different levels of maturity by region. The indicators most usually employed are the Index of Community Literacy Development (IPLM) and the Reading Interest Index. However, these indicators are still generic indicators and do not quantify the contribution of public libraries to each goal of the SDGs. The most developed M&E (monitoring and evaluation) systems are in provinces that have integrated multilayer monitoring from input to outcome, such as DKI Jakarta and West Java. On the other hand, Banten and DI Yogyakarta still need improvement on the coverage of services and the integration of SDG issues in each library program. This study found that the indicators in the IPLM and the Reading Interest Index were too general to capture the specific contributions of public libraries to individual SDGs, and paved the way for developing SDG-based public library performance indicators. This was not addressed in previous studies (Kusnandar et al., 2025; Elvitasari & Arfa, 2025; Mahdi et al., 2020; Aregbesola et al., 2023; Omona, 2020), which only addressed the role of libraries in providing services to

support the SDGs without addressing the adequacy of the indicators or the validity of the measurements in the context of public libraries' alignment with the SDGs.

#### *4.11. Integrated Collaboration between Government and Libraries in Supporting the SDGs*

The evaluation reveals that collaborative cooperation between government and public libraries can be considered as a whole-of-government and a whole-of-society approach to assist in the implementation of Sustainable Development Goals (SDGs) in Indonesia. On the national level, the SDGs have been institutionalized into national development planning through policy frameworks coordinated by the Coordinating Ministry for Human Development and Cultural Affairs, alongside national planning institutions, the National Library Strategic Plan (2025-2029), which has also placed libraries in prominent positions to promote human development, especially in relation to SDG 4, 8, 10, and 16. This situation exhibits policy coherence as it shows cross-sectoral coherence, which contributes to the effectiveness of development. Local governments at the regional level play regulatory, facilitative, and integrative functions through alignment of library policies with SDG priorities; the provision of funding and infrastructure, as well as connecting library services with education and local economic development and cultural programs. As such, libraries play the role of mediating the national policies into context-based initiatives, in keeping with the multi-level governance theory that stipulates that coordination among the governance levels must be taken (Hooghe & Marks, 2003). Moreover, libraries can be considered as strategic nodes in local development ecosystems due to their ability to combine literacy programs with economically empowering communities, cultural preservation, and delivery of the service to the citizenry. This position reinforces the synergy of policies and facilitates the SDG localization, enhances the evidence-based governance, transparency, and civic engagement especially in SDG 16 (United Nations, 2015; IFLA, 2015). This observation is compatible with the theory of knowledge governance, which emphasises the role of information institutions in informing the process of decision-making and citizen accountability (Fazekas & Burns, 2012). In addition, the collaborative model also indicates that sustainable development can be better implemented when the presence of knowledge institutions in governance procedures. The presence of an institutional capacity, sharing resources, and sustainability, in relation to enduring programs, through the multi-stakeholder approach that includes government, communities and other types of sectors, contributes to the collaborative governance theory (Ansell and Gash, 2008). In general, the integrated collaboration approach necessitates capacity building, policy innovation and inter-institutional learning to maximize the input of libraries to inclusive and resilient development. Political commitment and institutional support are essential to be sustained over time to make sure that public libraries are still effective as strategic partners in the implementation of the SDGs in Indonesia.

#### *4.12. Seven provinces covering aspects of planning/strategic plans, written policies, and the implementation of SDGs in public libraries.*

The results show that the comparative analysis of planning structures and SDG implementation in seven provinces could prove that there is a high level of strategic alignment between the regional development and the public library programs. Irrespective of the differences in local adaptation, the libraries remain the major tools in localizing the SDGs in the form of literacy development, service digitalization, development of human resources, cultural conservation, and empowerment of the local economies. It is a measure of policy integration and localization in which the global development agenda is formulated into institutional practices based on the situation (United Nations, 2015). Moreover, the formal introduction of policy into planning tools, i.e. RPJPD, RPJMD, RTRW and institutional strategic plans, proves to be a key factor that defines the effectiveness of the implementation. Those provinces that have a better set of regulations, such as Jakarta and the Special Region of Yogyakarta (e.g., Regional Regulation No. 11/2022) are more organized in their collaboration and their model of program implementation. In these settings, public libraries function not merely as program implementers but emerge as strategic governance actors. This transition aligns with institutional theory, which posits that formal structural frameworks profoundly dictate organizational efficacy (Scott, 2014). Furthermore, libraries act as dynamic policy translators by adapting macro-level SDG models into context-specific local projects. While urban libraries lean toward digital inclusion and informational transparency, their agrarian counterparts prioritize literacy initiatives tailored to local agricultural demands and rural entrepreneurship. This structural flexibility embodies adaptive governance theory, which emphasizes an organization's capacity to dynamically recalibrate in response to shifting socio-economic and environmental realities (Folke et al., 2005), thereby advancing SDGs 4, 8, 10, 11, and 16. From a managerial perspective, mapping library performance metrics against SDG targets strengthens results-based institutional accountability. Public libraries serve as vital intermediaries, bridging the gap between state-level policy planning and grassroots implementation through mobile units, social inclusion frameworks, and targeted literacy campaigns. This positioning conforms to knowledge

governance theory, which underscores the utility of information institutions in facilitating policy translation and community engagement (Fazekas and Burns, 2012). Ultimately, these findings suggest that the national library ecosystem can be optimized through inter-regional knowledge transfer and best-practice sharing. Sustained regulatory endorsement, equitable resource allocation, and continuous capacity building remain imperative to substantially bolstering the role of public libraries as catalysts for inclusive and sustainable human development, a mechanism central to collaborative governance theory (Ansell and Gash, 2008).

#### 4.13. *Integrated Role of Six Ministries in Planning, Policy, and SDG Implementation in Public Libraries*

The results reveal that a coherent governance framework that involves collaborative work between the Coordinating Ministry of Human Development and Cultural Affairs (Kemenko PMK); the Ministry of Finance; the Ministry of National Development Planning (Bappenas); Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kemendesa PDRT); Ministry of Home Affairs (Kemendagri); as well as Ministry of Higher Education, Science, and Technology (Kemendiknas), assists in strengthening the strategic role of the public libraries in implementing the Sustainable Development Goals (SDGs). This becomes the mirror of the whole-of-government approach, which focuses on the integration of cross-sectoral policies that would bring about sustainable development at the upper level (United Nations, 2018). The *Kemenko PMK* also offers normative guidance, by the positioning of the National Library Strategic Plan (2025-2029) as a main tool for human capital development through literacy and non-formal education, as the principle of knowledge-based development is designed. At the strategic level, *Bappenas* (2020) integrates SDG indicators at the national and regional planning levels, which guarantees the consistency of development objectives of the macro-level with implementation in sectors. This is in line with the policy integration theory, whereby the agendas of sustainability are emphasized to be put into form within formal planning systems (Candel and Biesbroek, 2016). More efforts, including the Social Inclusion-Based Library Transformation (TPBIS) continues to express how the national policies can be transferred to local interventions to further provide inclusive access to library services. Fiscally, the Ministry of Finance enables the realization with the performance based budgeting and sees the library development as an investment into human capital and social inclusion. This is an indicator of results-based management principles, according to which the development outcomes are pegged on the public expenditure (OECD, 2021). Fiscal transfers and budget allocations help the regional governments to implement SDG-based library programs to enhance vertical policy alignment. *Kemendesa PDRT* concentrates its assistance on village libraries as a literacy center at the village level with community empowerment programs and digital villages in villages, which are in line with SDGs 4, 8, 10 and 11. *Kemendagri* strengthens regional governance through e-planning and e-budgeting systems, integrating library programs into regional development agendas, contributing to SDGs 4, 11, and 16. *Kemendiknas* employs university libraries as centers of knowledge for research and the dissemination of knowledge to the public through community service initiatives, in support of SDGs 4, 9, and 17.

In addition, strong vertical and horizontal policy coherence emerges from the synergy among these ministries. At the vertical level, the National Library Strategic Plan directs regional planning to align with national priorities. This cross-sectoral collaboration fosters convergence among educational, cultural, and economic empowerment programs, thereby positioning libraries at the critical intersection of these distinct policy domains. Consequently, libraries function as governance mediators that transform macro-level policies into community-based actions, a mechanism that exemplifies the collaborative governance framework described by Ansell and Gash (2008). In general indicator (administration and management), the results indicate that combined ministerial cooperation can contribute to high levels of institutional legitimacy, policy consistency, budget allocations for the National Library, fiscal transfers to regional governments for library services, and the Social Inclusion-Based Library Transformation (TPBIS) program, even under national fiscal constraints, and the sustainability of a program in SDG implementation by means of the public libraries, can be solved by collaborating and coordinating at the multi-level. It promotes the thesis that successful sustainable development governance of the multi-tiered coordination, the support of the fiscal policies, and the alignment of the institutions are prerequisites. Consequently, the public libraries are also coming to be placed as strategic knowledge facilities by providing to SDGs 4, 8 and 10.

#### 4.14. *Integrated Role of Seven Provinces in Promoting Access to SDG Information and Local Wisdom through Public Libraries*

The results show that the comparative analysis of planning structures and SDG implementation in seven provinces could prove that there is a high level of strategic alignment between the regional development and the public library

programs. Irrespective of the differences in local adaptation, the libraries remain the major tools in localizing the SDGs in the form of literacy development, service digitalization, development of human resources, cultural conservation, and empowerment of the local economies. It is a measure of policy integration and localization in which global development agenda is formulated into institutional practices based on the situation (United Nations, 2015). Moreover, the formal introduction of policy into planning tools, i.e. RPJPD, RPJMD, RTRW and institutional strategic plans, proves to be a key factor that defines the effectiveness of the implementation. Those provinces that have a better set of regulations such as Jakarta and Special Region of Yogyakarta (e.g., Regional Regulation No. 11/2022) are more organized in their collaboration and their model of program implementation. In such situations, libraries become as program implementers, but they also become actors of strategic governance, in accordance with the institutional theory, which states that formal rules and structures can influence the effectiveness of the organization. This is in line with the international framework put forward by Scott (2014). Further, libraries act as dynamic translators of policies by interpreting the national SDGs models into the locally defined projects. The urban areas are more inclined toward digital inclusion and information transparency, whereas the agrarian areas focus on literacy activities that are associated with the agricultural sphere and the entrepreneurship at the local level. This flexibility fits in the links of adaptive governance theory, which emphasizes the ability of organizations to dynamically respond to socio-economic and environmental situations. This is in line with the international framework put forward by Folke et al. (2005), and hence it can contribute to a variety of SDGs, and especially to SDGs 4, 8, 10, 11, and 16. Governance-wise, the use of library performance indicators against the SDG targets and the regional public service indicators enhances the management of results based and accountability of the institution. Libraries are also good intermediaries that can help in bridging policy planning and implementation at the level of the community by using libraries like mobile libraries, social inclusion programs, and literacy campaigns. This position is aligned with the theory of knowledge governance, which suggests the relevance of information institutions in enabling the translation of policies and interacting with communities. This is in line with the international framework put forward by Fazekas & Burns (2012). All in all, the results indicate that the national library ecosystem could be further enhanced with the help of inter-regional learning and exchanging the best practices. A regulatory endorsement of sustainability, proper resource distribution, and unwavering capacity building have been critical towards enhancing the functions of public libraries (as change agents) candidly in promoting inclusive and sustainable human growth in accordance with the collaborative governance theory. This is in line with the international framework put forward by Ansell & Gash (2008).

## 5. Conclusion

The findings demonstrated that public libraries had evolved into strategic institutions supporting the implementation of the Sustainable Development Goals (SDGs) through integrated governance, inclusive services, and multi-stakeholder collaboration. Both qualitative and quantitative results consistently indicated that effective implementation was shaped by strong policy alignment, institutional capacity, and adaptive service delivery. Libraries were found to function as knowledge intermediaries that translated global development agendas into locally relevant programs, particularly in literacy, digital inclusion, and community empowerment. In addition, the strong measurement model confirmed that key dimensions such as administration, partnerships, resources, and SDG-oriented outcomes (People, Planet, Prosperity, and Peace) were robust and interrelated. Overall, the study concluded that libraries had played a critical role in advancing inclusive, knowledge-based, and sustainable development at both national and local levels.

These findings implied that strengthening the role of public libraries in SDG implementation required deeper policy integration within national and regional development frameworks, supported by sustained political commitment and adequate funding. Practically, enhancing digital infrastructure, capacity building for librarians, and inclusive service innovation were essential to improve effectiveness and outreach. Theoretically, the study reinforced the relevance of collaborative governance and adaptive governance frameworks in explaining how libraries functioned as development actors. Furthermore, the strong influence of partnerships and performance-based management suggested that future policies should prioritize multi-level collaboration and evidence-based evaluation systems. Expanding cross-sectoral coordination and investing in community-centered library models would further optimize the contribution of libraries to sustainable development.

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## References

- Aabø, S. & Audunson, R. (2012) Use of Library Space and the Library as Place. *Library & Information Science Research*, 34, 138-149. <http://dx.doi.org/10.1016/j.lisr.2011.06.002>
- Abu, A. A., Isah, Y. A., & Ajayi, S. A. (2023). Revitalisation of Public Libraries in the Attainment of Sustainable Development Goals in Nigeria (83–96). UJ Press. <https://doi.org/10.36615/9781776460533-006>
- Adepoju, F., & Akobe, O. D. (2023). Role of Nigerian Public Libraries in Reaching Rural Communities with Sustainable Development Goals (SDGs). Access: An International Journal of Nepal Library Association, 2(01), 26–40. <https://doi.org/10.3126/access.v2i01.58887>
- Afolabi, O. A. (2018). Myths and Challenges of Building an Effective Digital Library in Developing Nations: An African Perspective (pp. 51–79). IGI Global. <https://doi.org/10.4018/978-1-5225-3093-0.CH004>
- Albader, H., & AlSubaie, A. (2025). Libraries in the Smart City Ecosystem: Driving Sustainable Development Goals Through Digital and Community-Centric Approaches. 299–319. <https://doi.org/10.1108/978-1-83708-042-720251020>
- Ansell, C., & Gash, A. (2008). Collaborative Governance in theory and Practice. *Journal of Public Administration Research and Theory*, 18, 543-571. <https://doi.org/10.1093/jopart/mum032>
- Antonelli, M. (2008). The Green Library Movement: An Overview and Beyond. *Electronic Green Journal*, 1(27). <https://doi.org/10.5070/G312710757>
- Aregbesola, A., Owolabi, S., & Adebisi, T. (2023). Going to the Cities: The Strategic Roles of Public Libraries in Promoting Sustainable Development Goals. *Public Library Quarterly*. <https://doi.org/10.1080/01616846.2023.2253692>

- Audunson, R., Aabø, S., Blomgren, R., Hobohm, H.-C., Jochumsen, H., Khosrowjerdi, M., Mumenthaler, R., Schuldt, K., Rasmussen, C. H., Rydbeck, K., Tóth, M., & Vårheim, A. (2019). Public libraries as public sphere institutions: A comparative study of perceptions of the public library's role in six European countries. *Journal of Documentation*, 75(6), 1396–1415. <https://doi.org/10.1108/JD-02-2019-0015>.
- Bakare, O. D., & Okuonghae, N. (2022). Information Managers as Change Agents in achieving Sustainable Development in the 21st Century. 1(2), 58–66. <https://doi.org/10.56556/jescae.v1i2.97>
- Bappenas. (2020). *Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020–2024*.
- Bhanudas, P.R. (2025). Library-Led Development: Strategic Framework for Inclusive Knowledge Access in India's Journey Towards 2047. IIP: International Multidisciplinary Research Journal, 2(III). <https://doi.org/10.5281/zenodo.17384942>
- Bidwe, H.S. & Waghmare, C.E. (2025). Libraries as Tools for Sustainable Development Goals (SDGs) in Digital Age. IIP: International Multidisciplinary Research Journal, 2(III). <https://doi.org/10.5281/zenodo.17384554>
- Candel, J. J. L., & Biesbroek, R. (2016). Toward a processual understanding of policy integration. *Policy Sciences*, 49(3), 211–231. <https://doi.org/10.1007/s11077-016-9248-y>
- Chávez, A.R. (2018). Información y participación ciudadana en el contexto del gobierno abierto: las potencialidades de la biblioteca pública. *Biblios*, 24(68), 34–47. <https://doi.org/10.5195/BIBLIOS.2017.350>
- Elvitasari, R.F. & Arfa, M. (2025). Peran Perpustakaan dalam Penerapan Sustainable Development Goals (SDGs) pada Perpustakaan Provinsi Jawa Tengah. ANUVA Volume 9 (4): 627-638.
- Fazekas, M. and T. Burns (2012), “Exploring the Complex Interaction Between Governance and Knowledge in Education”, OECD Education Working Papers, No. 67, OECD Publishing, Paris, <https://doi.org/10.1787/5k9flcx21340-en>.
- Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources*, 30, 441–473. <https://doi.org/10.1146/annurev.energy.30.050504.144511>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Gaikwad, S.P. (2025). Role of Libraries in Sustainable Development. IIP: International Multidisciplinary Research Journal, 2(III). <https://doi.org/10.5281/zenodo.17384733>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Haryanto, H., Laugu, N., & Zulaikha, S. (2024). Public Libraries as Incubators for Social Inclusion and Entrepreneurship for Achieving Sustainable Development Goals (SDGs): A Progressive Transformation. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 10(2), 760-770. Doi: <https://doi.org/10.33394/jk.v10i2.11648>
- Henseler, J., Ringle, C.M. & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. of the Acad. Mark. Sci.* 43, 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hooghe, L., & Marks, G. (2003). Unraveling the central state, but how? *American Political Science Review*, 97(2), 233–243. DOI:10.1017/S0003055403000649
- IFLA. (2015). *Access and Opportunity for All: How Libraries Contribute to the United Nations 2030 Agenda*.
- IFLA. (2018). Libraries and the Sustainable Development Goals: a storytelling manual. <https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/libraries-development/documents/sdg-storytelling-manual.pdf>
- Ingle, P.S. & Sutar, M.S. (2025). Role of libraries in Achieving sustainable Development Goals (SDG's): An Overview. IIP: International Multidisciplinary Research Journal, 2(III). <https://doi.org/10.5281/zenodo.17384644>

- Irawati, S.N., Nugroho, P.A., Fitriyanti, N. (2025). Sinergi Akademisi dan Perpustakaan untuk Berkontribusi pada Keilmuan Manajemen Lingkungan. *Buletin Perpustakaan Universitas Islam Indonesia*, 8(1), 53-77
- Jochumsen, H., Rasmussen, C. H., & Skot-Hansen, D. (2012). The four spaces – a new model for the public library. *New Library World*, 113(11/12), 586–597. DOI:10.1108/03074801211282948
- Jumba, E. M., & Dauda, J. (2025). Innovative library services for societal re-orientation: A catalyst for positive change. *Library and Information Perspectives and Research*, 7(3). <https://doi.org/10.47524/lipr.v7i3.90>
- Juniadi, M. & Heriyanto. (2021). Strategi Perpustakaan Umum dalam Mendukung Program Sustainable Development Goals. *ANUVA Volume 5 (4)*: 569-578.
- Khan, R. (2018). Health literacy and library services. *Health Information Journal*, 11(2), 23-35.
- Koontz, C. and Gubbin, B. (2010). IFLA Publications 147 IFLA Public Library Service Guidelines 2nd, completely revised edition. The Hague, The Netherlands: IFLA publications.
- Kosciejew, M. (2020). Public libraries and the UN 2030 Agenda for Sustainable Development. *IFLA Journal*, 46(4), 328–346. <https://doi.org/10.1177/0340035219898708>
- Kranich, N. (2005). Civic Partnerships: The Role of Libraries in Promoting Civic Engagement (, Illus.). In *Resource Sharing & Information Networks* (Vol. 18, Issue 1-2, pp. 89–103). Haworth Press. <https://doi.org/10.7282/T3FF3V6S>
- Kusnandar, Samson CMS, & Rukmana, E.N. (2025). Menjaga memori, merawat budaya, menuju SDGs: peran transformasional perpustakaan di era modern. *Jurnal Kajian Budaya dan Humaniora*, 7(1), 42-47.
- Lahyani, K., Diab, G., & Moukhliiss, G. (2024). Role of Academic Libraries in the Achievement of Sustainable Development Goals Case Study: The Mohamed Sekkat University Library. *Procedia Computer Science*, 236, 566–573. <https://doi.org/10.1016/j.procs.2024.05.067>
- Magar, P. R. (2024). READ Methodology: Community Library and Resource Center a Transformative Instrument in Socio-Economic Development. *Journal of Multidisciplinary Research Advancements (JOMRA)*, 2(1), 1–7. <https://doi.org/10.3126/jomra.v2i1.66629>
- Mahdi, R., Hasanah, M., & Asari, A. (2020). Social Inclusion-Based Library Transformation: a National Library of Indonesia's Role to Support Sustainable Development Goals (SDGs). *Library Philosophy and Practice (e-journal)*, 6028. University of Nebraska–Lincoln. <https://digitalcommons.unl.edu/libphilprac/6028>
- Meneses-Tello, F. (2017). Información y bibliotecas en torno a los derechos humanos. *Revista Brasileira de Biblioteconomia e Documentação*, v. 13, n. 2, jul./dez. 2017, 42–84. <https://rbbd.febab.org.br/rbbd/article/download/471/642>
- Mustar, M. (2023). Peran pustakawan dalam sustainable development goals (SDGs). *WIPA*, Vol. 27, Ed. Juli, pp. 1-13.
- National Library Regulation of the Republic of Indonesia Number 3 of 2023 concerning Library Transformation Based on Social Inclusion
- OECD. (2021). *Managing for sustainable development results*. OECD Publishing.
- Olatoye, O. I. O. (2024). The Pertinence of Library and Information Science in Promoting Sustainable Development. *Mousaion*. <https://doi.org/10.25159/2663-659x/13768>
- Omona, W. (2020). The roles of library and information services in achieving Sustainable Development Goals (SDGs) in Uganda. *Library Philosophy and Practice (e-journal)*. 4018. <https://digitalcommons.unl.edu/libphilprac/4018>
- Pateman, J., & Williment, K. (2016). *Developing Community-Led Public Libraries*. Ashgate.
- Patil, S., & Kulkarni, M. (2019). Library-based health awareness programs. *Health Literacy Review*, 6(2), 18-31.
- Patil, S.S. (2025). Knowledge Hubs for a Sustainable Future: The Role of Libraries in Achieving SDGs. *IIP: International Multidisciplinary Research Journal*, 2(III). <https://doi.org/10.5281/zenodo.17384768>
- Peraturan Daerah (Perda) Kota Yogyakarta Nomor 11 Tahun 2022 tentang Perpustakaan

- Peraturan Menteri Koordinator Bidang Pembangunan Manusia dan Kebudayaan Republik Indonesia Nomor 3 Tahun 2025 tentang Rencana Strategis Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan Tahun 2025-2029
- Perpustakaan Nasional Republik Indonesia (Perpusnas). (2025). *Rencana Strategis Perpustakaan Nasional 2025–2029*.
- Sable, O. B. & Mhaske, S.M. (2025). The Transformative Role of Libraries for Inclusive Development in India's Journey to Viksit Bharat @2047. IIP : International Multidisciplinary Research Journal, 2(III). <https://doi.org/10.5281/zenodo.17384829>
- Sadare, O.O., Moothi, K., & Daramola, M.O. (2022). The Role of the Library in Actualising United Nation Sustainable Development Goals in South Africa (pp. 161–179). UJ Press eBooks. <https://doi.org/10.36615/9781776402304-09>
- Santos, I. C. (2023). Nas bibliotecas não há bandeiras: os 17 ODS e o papel das bibliotecas na formação de cidadãos do mundo (pp. 237–248). Faculdade de Letras da Universidade do Porto. <https://doi.org/10.21747/978-989-9082-88-5/oveal7>
- Scott, W. R. (2014). *Institutions and Organizations: Ideas, Interests, and Identities* (4th ed.). Thousand Oaks, CA: Sage Publishing.
- Shesha, A., & Singh, R. (2024). The Role of Indian Academic Libraries in Advancing and Achieving Sustainable Development Goals. 10(1), 29–35. <https://doi.org/10.48165/lt.2024.10.5>
- Solanke, D. S. (2025). The Role of Libraries in Achieving Sustainable Development Goals (SDGs). IIP: International Multidisciplinary Research Journal, 2(III). <https://doi.org/10.5281/zenodo.17384839>
- Steele, J.E. (2025). Libraries and Freedom of Information, Editor(s): David Baker, Lucy Ellis, *Encyclopedia of Libraries, Librarianship, and Information Science* (First Edition), Volume 4, 2025, Pages 343-352. Academic Press, Elsevier Inc. DOI: <https://doi.org/10.1016/B978-0-323-95689-5.00085-7>
- Stilwell, C. (2018). Information as currency, democracy, and public libraries. *Library Management*, Vol. 39 No. 5 pp. 295–306. Doi: <https://doi.org/10.1108/LM-08-2017-0078>
- Suprianingrum, E. & Heriyanto. (2021). Peran perpustakaan perguruan tinggi dalam mendukung implementasi Sustainable Development Goals 4. *BACA: Jurnal Dokumentasi dan Informasi*, Vol. 42, No. 1. DOI: 10.14203/j.baca.v42i1.732
- Talaverano, S. & José, E. (2024). Las bibliotecas comunitarias: asociacionismo, práctica social y territorial. El caso de la Biblioteca comunitaria de Camp de Túria. 383–388. <https://doi.org/10.56451/10334/9357>
- Undang-Undang Nomor 43 Tahun 2007 tentang Perpustakaan
- Unegbu, M. C., Immaculata, O., & Emuchay, B. N. (2023). Information Literacy and Sustainable Development Goals Implementation: The Role of Libraries and Librarians. *INTERNATIONAL JOURNAL OF SOCIAL SCIENCE AND EDUCATION RESEARCH STUDIES*, 03(01). <https://doi.org/10.55677/ijssers/v03i1y2023-13>
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. <https://sdgs.un.org/2030agenda>
- Vårheim, A. (2014). Trust in libraries and trust in most people: Social capital creation in the public library. *The Library Quarterly*, 84(3), 258–277.
- Williams-Cockfield, K. C. & Mehra, B. (2023). How Public Libraries Build Sustainable Communities in the 21st Century. *Advances in Librarianship*, 305–320. <https://doi.org/10.1108/s0065-283020230000053034>
- Ylipulli, J., Pouke, M., Ehrenberg, N., & Keinonen, T. (2023). Public libraries as a partner in digital innovation project: Designing a virtual reality experience to support digital literacy. *Future Generation Computer Systems*, 149, 594–605. <https://doi.org/10.1016/j.future.2023.08.001>

**Appendix**

**Table 1.** Comparative Analysis of the Role of Public Libraries and Local Government Policies in Supporting the Sustainable Development Goals (SDGs) in Five Provinces in Indonesia

Province (RCI/IDSD Ranking)	The Role of Public Libraries	Role of Local Government / Policy	Planning Framework and Formal Policy Documents	Implementation / SDGs Programs in Public Libraries	Alignment with the SDGs (Sustainable Development Goals)	Implementation and Collaboration Notes
Special Capital Region of Jakarta (1)	Strengthening literacy and non-formal education; a center for access to development information and the SDGs; preservation of culture and identity; inclusive services for vulnerable groups and persons with disabilities.	Integration of libraries within the education ecosystem, information transparency, and the development of culture and sustainable cities through programs implemented by the Regional Library and Archives Office (Dispusip).	The RPJPD and RTRW serve as the basis for integrating SDG principles into public library programs. The focus is on service digitalization and inclusive access.	Strengthening e-library services and revitalizing community reading centers (TBM). Enhancing the capacity of librarians and the community. Organizing literacy activities and public education programs. Library-based empowerment and social innovation programs.	SDG 4 – Quality Education SDG 10 – Reduced Inequalities SDG 16 – Peace, Justice and Strong Institutions SDG 17 – Partnerships for the Goals	The Strategic Plan (Renstra) emphasizes pentahelix partnerships (community, academia, private sector, and media). Supports SDGs 11, 16, and 17.
Bali (2)	Strengthening community literacy, providing access to information and knowledge, preserving Balinese manuscripts and culture, and delivering library-based lifelong learning services.	The regional government develops archival and library service programs, enhances collections, supports library development, and improves library visitation and the quality of regional library services.	The Bali RPJMD serves as the basis for policies on library development through programs to improve archival and library services, develop collections, and strengthen regional library development.	Strengthening regional library services, increasing public visitation, developing library collections, and fostering and supervising libraries to enhance community literacy.	SDG 4 – Quality Education; SDG 10 – Reduced Inequalities; SDG 11 – Sustainable Cities and Communities; SDG 16 – Peace, Justice and Strong Institutions.	The Strategic Plan (Renstra) emphasizes strengthening library services, enhancing community literacy, and collaboration with educational institutions, cultural communities, and other stakeholders.
Special Region of Yogyakarta (3)	Information and learning center; increased utilization of collections; digital literacy and community engagement; support for development indicators and SDGs dissemination.	The Library and Archives Strategic Plan operationalizes information, archival, and technology services; SDG indicators are monitored through regional TPB/SDGs documents.	Regional Regulation No. 11/2022 on Libraries serves as the legal basis for inclusive library services. The Strategic Plan is aligned with the RPJMD and national policies.	TPBIS (Social Inclusion-Based Library Transformation) program at the urban village level. Collaboration with universities (UGM, etc.). Strengthening social literacy and reading culture.	SDG 4 – Literacy SDG 10 – Inclusion and Access to Services SDG 17 – Partnerships in Education	Aligned with the RPJMD on cultural heritage preservation. There is a need to strengthen service outreach and integrate SDG issues into every program.

Province (RCI/IDSD Ranking)	The Role of Public Libraries	Role of Local Government / Policy	Planning Framework and Formal Policy Documents	Implementation / SDGs Programs in Public Libraries	Alignment with the SDGs (Sustainable Development Goals)	Implementation and Collaboration Notes
Banten (4)	An instrument for human development: literacy and lifelong learning; transparent access to public information; a space for literacy partnerships and collaboration.	Regulatory, planning, facilitative, and coordinative roles; integration of libraries into the RPD/Strategic Plan along with support for human resources, infrastructure, and networks.	The 2023–2026 RPD incorporates the evaluation of SDG achievements as a basis for policy formulation. The Dispusip Strategic Plan positions libraries within the sustainable development ecosystem.	Social inclusion and digital literacy services. Provision of collections related to SDG issues. Digitization of archives and strengthening access to public information.	SDG 4 – Quality Education SDG 9 – Technology and Digitalization SDG 16 – Institutions and Transparency	Libraries play a role as a bridge between policy and society so that the SDGs are understood and supported by the public.
West Java (5)	Strengthening community literacy, providing access to information, developing digital library services (CANDIL), KOLECER, and activities to promote a reading culture.	Integration of literacy and library development within programs promoting reading culture, collection development, and the preservation of regional archives and manuscripts through the Regional Library and Archives Service (Dispusipda)..	The West Java Provincial RPJMD and the Dispusipda Work Plan (Renja) serve as the basis for integrating literacy strengthening, education, and human resource development through library services, with a focus on literacy service innovation and regional development collaboration.	Strengthening community literacy through programs promoting reading culture, KOLECER (Smart Literacy Boxes), the CANDIL digital library, literacy festivals, and the selection of provincial reading ambassadors.	SDG 4 – Quality Education; SDG 8 – Decent Work and Economic Growth; SDG 11 – Sustainable Cities and Communities; SDG 16 – Peace, Justice and Strong Institutions.	Literacy programs are implemented through collaboration among regional governments, literacy communities, and the public to support SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities), and SDG 17 (Partnerships for the Goals).
East Java (6)	Libraries serve as centers for literacy, information, and lifelong learning for the community to improve the quality of education, knowledge, and literacy culture.	The East Java Provincial Government, through the Library and Archives Service, implements programs for library development, collection development, utilization of digital collections, and preservation of national collections and ancient manuscripts to enhance community literacy.	The East Java Provincial RPJMD 2019–2024 emphasizes improving the quality of human resources through strengthening education, literacy, and social inclusion. Regional development policies also encourage the development of public information services and digital transformation in government services, including strengthening the role of regional libraries as centers of literacy, knowledge, and community empowerment...	Programs to strengthen community literacy through social inclusion–based library transformation, including the development of digital library services (such as e-library/iJatim), enhancement of collections and access to information, reading and digital literacy activities, community skill training based on libraries, and collaboration with schools, communities, and local governments to improve reading culture and community capacity.	SDG 4 – Quality Education; SDG 10 – Reduced Inequalities; SDG 16 – Peace, Justice and Strong Institutions; SDG 17 – Partnerships for the Goals.	The regional government encourages collaboration with schools, literacy communities, universities, and the media to expand public access to information and literacy.
= Central Java (7)	Improving community literacy and reading interest through the management and development of libraries and the provision of public access to information. The objective is to increase the Community Literacy Development Index and improve the quality of public information services.	The provincial government, through the Archives and Library Service, implements programs for library development, capacity building for library human resources, expansion of literacy service access, development of information technology–based libraries, and strengthening coordination among regional literacy stakeholders.	The Central Java Provincial RPJMD 2025–2029 emphasizes improving the quality of human resources, strengthening education, and developing a literacy culture as part of the regional development strategy, as well as integrating literacy and information services through libraries.	Development of the digital library (iJateng), transformation of libraries based on social inclusion, improvement of community literacy services, and strengthening the capacity of human resources and library networks.	SDG 4 – Quality Education; SDG 8 – Decent Work and Economic Growth; SDG 10 – Reduced Inequalities; SDG 11 – Sustainable Cities and Communities; SDG 16 – Peace, Justice and Strong Institutions; SDG 17 – Partnerships for the Goals..	The Strategic Plan of the Central Java Archives and Library Service emphasizes collaboration with regional governments, educational institutions, literacy communities, and the private sector to strengthen the literacy ecosystem and social inclusion. It supports SDGs 4, 10, 11, 16, and 17.

**Table 2.** The Role of Ministries in Policy Planning, Program Implementation, and Library Collaboration to Support the SDGs

Ministry	Planning / Strategic Plan (Renstra) and Formal Policy Documents	SDG-Related Implementation in Public Libraries	Main Programs / Key Instruments	Role of Libraries in Collaboration	Contribution to the SDGs
Ministry of Finance	<p>1. The National Library Strategic Plan (Renstra Perpunas) 2025–2029 is directly linked to national budget (APBN) funding requirements and the achievement of the National Medium-Term Development Plan (RPJMN) and SDG 4 (Quality Education).</p> <p>2. It serves as a technocratic document that connects the needs of the library sector with national fiscal policy.</p> <p>3. The Ministry of Finance Strategic Plan (Renstra) 2025–2029 (PMK 70/2025) emphasizes performance-based budgeting and the quality of public spending for human development.</p>	<p>1. Library programs are positioned as investments in human development spending (literacy, non-formal education, and equitable access to information).</p> <p>2. Budget allocations are determined based on their contribution to development outcomes.</p> <p>3. Implementation is reflected in:</p> <ul style="list-style-type: none"> <li>• budget allocations for the National Library (Perpunas);</li> <li>• fiscal transfers to regional governments for library services and the Social Inclusion-Based Library Transformation (TPBIS) program, even under national fiscal constraints.</li> </ul>	<p>Central government expenditure (K/L budget) for National Library programs.</p> <p>Intergovernmental fiscal transfers (DAU and Non-Physical DAK) to support public libraries.</p> <p>Fiscal affirmation for regions with low fiscal capacity.</p> <p>Example of implementation: provision of quality book assistance to village libraries.</p>	<p>Strengthening grassroots literacy services.</p> <p>Expanding access to information for disadvantaged groups and regions.</p> <p>Supporting the sustainability of regional library services.</p>	<p>SDG 4 – Literacy and access to education</p> <p>SDG 10 – Reducing inequalities in access to information</p> <p>SDG 16 – Strengthening inclusive public institutions.</p>
Ministry of National Development Planning / BAPPENAS	<p>1. The Bappenas Strategic Plan integrates the SDGs into all stages of development planning, including indicators, programs, and activities.</p> <p>2. It also contributes to the formulation of the United Nations Sustainable Development Cooperation Framework (UNSDCF), which supports education, innovation, and open data access—forming the informational foundation for SDG-related activities in libraries.</p>	<p>1. Implementation is carried out through National Library (Perpunas) policies that support the SDGs, including:</p> <ul style="list-style-type: none"> <li>• the Social Inclusion-Based Library Transformation (TPBIS) program, which positions libraries as inclusive and creative community spaces that enhance skills and access to knowledge;</li> <li>• expansion of literacy services and the digitization of collections in more than 20,000 locations (villages, health centers, correctional institutions, etc.).</li> </ul> <p>2. These initiatives support access to information, social inclusion, and the capacity development of local communities.</p>	<p>Mainstreaming the SDGs into the National Medium-Term Development Plan (RPJMN) and ministerial strategic plans (Renstra K/L).</p> <p>Community empowerment through literacy and education.</p> <p>Capacity building for national and regional stakeholders.</p> <p>Multi-stakeholder collaboration and the development of SDG Centers / Indonesia SDGs Center Network (ISCN).</p>	<p>Partners in disseminating development knowledge and SDG-related data.</p> <p>Strengthening information literacy and civic literacy.</p> <p>Providing spaces for sharing best practices and local innovations.</p>	<p>SDG 4 – Quality Education</p> <p>SDG 16 – Inclusive and Transparent Institutions</p> <p>SDG 17 – Partnerships for the Goals.</p>
Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kemendesa PDTT)	<p>1. The Strategic Plan of the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kemendesa PDTT) 2025–2029 positions rural development as a national strategy to enhance village self-reliance, reduce poverty, and strengthen the capacity of rural communities.</p> <p>2. Village development policies are directed toward community empowerment,</p>	<p>1. Village literacy programs, digital village initiatives, and community capacity-building programs can synergize with village libraries and public libraries as community literacy centers.</p> <p>2. Libraries can be utilized as community learning spaces for training, digital literacy, and access to village development information.</p> <p>3. Implementation is</p>	<p>Village community empowerment programs, development of digital villages, village digital literacy programs, and strengthening of Community Training Centers for Villages and Disadvantaged Regions.</p>	<p>Village libraries and public libraries can function as literacy centers for rural communities by providing access to village development information, digital literacy services, and knowledge-based community empowerment activities.</p>	<p>SDG 4 – Quality Education</p> <p>SDG 8 – Decent Work and Economic Growth</p> <p>SDG 10 – Reduced Inequalities</p> <p>SDG 11 – Sustainable Communities.</p>

Ministry	Planning / Strategic Plan (Renstra) and Formal Policy Documents	SDG-Related Implementation in Public Libraries	Main Programs / Key Instruments	Role of Libraries in Collaboration	Contribution to the SDGs
	strengthening rural economies, and improving community literacy through village human resource development programs. 3. Village digitalization strategies and capacity-building for rural communities are important instruments in supporting equitable access to information and knowledge in rural areas.	reflected in the integration of village community empowerment activities with literacy and information facilities provided by village libraries and public libraries.			
Ministry of Home Affairs (Kemendagri)	1. The Strategic Plan of the Ministry of Home Affairs emphasizes strengthening regional governance and synchronizing development policies between the central and local governments. 2. Policies on integrated development planning through e-planning and e-budgeting systems aim to improve the effectiveness of regional development planning. 3. Guidance and supervision of local governments are carried out to ensure the provision of quality and equitable public services across all regions of Indonesia.	1. Local governments, as managers of public libraries, receive policy guidance and facilitation from the Ministry of Home Affairs to strengthen public services. 2. The integration of regional development planning enables literacy programs and library development to be included as priorities in regional development agendas. 3. Implementation is reflected in improving the capacity of regional human resources and strengthening public information services that support the development of regional library services.	Facilitation of regional development planning, integration of e-planning and e-budgeting systems, and institutional development of local governments, including strengthening human resource capacity and public services.	Regional libraries form part of local government public services supported through policies that strengthen regional governance, enhance human resource capacity, and integrate regional development planning.	SDG 16 – Effective Institutions SDG 4 – Quality Education SDG 11 – Sustainable Cities and Communities.
Ministry of Higher Education, Science, and Technology (Kemdiktisaintek)	1. The Strategic Plan of the Ministry of Higher Education, Science, and Technology (Kemdiktisaintek) 2025–2029 emphasizes strengthening higher education, research, and community service as part of human resource development. 2. Policies to strengthen research and innovation are supported through various research funding schemes, community service programs, and the development of research institutions within universities. 3. The ministry also promotes equitable access to higher education through institutional strengthening of universities and the digital transformation of education.	1. University libraries function as knowledge resource centers that support education, research, and community service. 2. Community service programs conducted by universities often involve information literacy activities, the development of community libraries, and knowledge-based community capacity building. 3. Implementation is reflected in collaborations between universities and public libraries in literacy activities, community training, and the dissemination of research results to the public.	Research and community service funding schemes, strengthening of the Institute for Research and Community Service (LPPM), and facilitation of higher education quality improvement through Higher Education Service Institutions (LLDikti).	University libraries serve as centers of scientific information resources, supporting research, community service, and the dissemination of knowledge to the public through academic literacy programs.	SDG 4 – Quality Education SDG 9 – Innovation and Infrastructure SDG 17 – Partnerships for the Goals.
Coordinating Ministry for Human Development and Cultural Affairs (Kemenko PMK)	1. The National Library Strategic Plan (Renstra Perpusnas) 2025–2029 serves as a reference for preparing the Strategic Plans of Regional Library Agencies, Annual Work	1. Libraries function as community literacy centers (reading–writing literacy, digital literacy, financial literacy, and health literacy). 2. They serve as centers	Digitization of collections and online services (iPusnas, IOS, and e-Resources). Provision of SDG-themed collections and SDG corners.	Libraries serve as hubs connecting local and global knowledge. They function as centers for cultural documentation and the transmission of local wisdom. They also act as media for	SDG 4 – Literacy and lifelong learning SDG 11 – Preservation of local cultural heritage SDG 16 – Participation and social cohesion.

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	Plans, and the Social Inclusion-Based Library Transformation (TPBIS) program. 2. The policy framework is strengthened by the Strategic Plan of the Coordinating Ministry for Human Development and Cultural Affairs, which positions literacy, culture, and non-formal education as integral components of human capital development. 3. This framework is aligned with the national development direction of inclusive, equitable, and sustainable development.	for lifelong learning. 3. Libraries provide spaces for social inclusion for women, persons with disabilities, and vulnerable groups. 4. Cross-sector collaboration includes: • collaboration with the Education Office to strengthen school literacy (SDG 4); • collaboration with the Cooperatives and MSMEs Office to provide information-based entrepreneurship training (SDG 8); • collaboration with the Cultural Affairs Office to preserve manuscripts and local knowledge (SDG 11).	Public policy and environmental literacy programs. Digitization of ancient manuscripts, documentation of oral traditions, and cultural exhibitions.	character education based on cultural values.	

**Table 3.** Measurement Model Results: Standardized Estimates of Constructs and Indicators

Construct / Latent Variable	Indicator / Item	Standardized estimate	
Administration	Leadership with a vision for the SDGs	0.840	
	Adequate budget and funding	0.770	
	Clear policy planning related to the SDGs	0.880	
	Timeline-based development planning	0.830	
	Public communication and promotion strategies	0.910	
	Reporting on the implementation of service programs	0.920	
	Monitoring and evaluation of service program implementation	0.920	
Staff	Librarians understand the SDGs	0.880	
	Librarians are aware of the role of libraries in achieving SDGs	0.910	
	Staff welfare and motivation impact SDG support	0.910	
Training	Stakeholder training	0.930	
	Librarian training on SDG service programs	0.870	
	User training on SDG service programs	0.910	
Resources	Sufficient SDG-aligned information resources	0.860	
	Trained staff	0.910	
	Adequate physical resources (hardware, equipment)	0.910	
	Adequate virtual resources (data, software)	0.940	
Infrastructure	Environmentally friendly building design	0.940	
	Inclusive access for people with disabilities	0.930	
	Flexible multifunctional space for SDG activities	0.880	
	Adequate digital infrastructure	0.920	
	Environmental/conservation zones	0.880	
Access and Inclusion	Health consultation and relaxation zones	0.890	
	Inclusive access	0.920	
	Digital access	0.920	
	Understanding community needs	0.850	
Environment	Reach a wider audience	0.880	
	Reduce emissions	0.930	
	Promote environmentally friendly behavior	0.930	
Community Engagement	Hosting public dialogues	0.900	
	Establish branch libraries / info centers	0.770	
Partnerships	Institutional partnerships	0.900	
	Community collaboration	0.960	
	Stakeholder partnerships	0.940	
People	Access to Information, Literacy, and Learning	0.996	
	Public Health and Well-being	0.981	
	Women’s Empowerment and Social Inclusion	0.975	
	Workforce Skills, Entrepreneurship, Digital Competencies, and Sustainable Development	0.998	
Planet	Information for Environmental and Resource Management	0.987	
	Sustainable Library Operational Practices	0.989	
	Disaster Resilience and Environmental Awareness	0.987	
Prosperity	Environmentally Friendly Infrastructure and Basic Access	0.990	
	Environmental Information, Economic Empowerment, and Career Services	0.994	
	Social Spaces, Community Participation, and Cultural Preservation	0.970	
Peace	Access to information with professional support	0.949	
	Inclusive and neutral public spaces	0.962	
	Civic awareness and participation programs	0.874	
	Access to information and fundamental freedoms	0.926	
General Indicators (Administration and Management)	Cyber ethics education and policy	0.945	
	National Policy	0.846	
	National Library Strategic Plan	0.890	
	Budgeting and Monitoring	0.890	
	Professional Library Leaders and Librarians	0.913	
	Collection management	0.942	
	Service Management	0.936	
	Community and Stakeholder engagement	0.934	
	Partnership (Higher Level)	Multi-level stakeholder collaboration	0.935
		Community collaboration for SDG programs	0.955
Data integration through cross-sector collaboration		0.947	