

Strategic Information Needs (SIN) based on Demographic and the Regional Competitiveness Index In Supporting Public Library Services to Achieve SDGs (Comparative Study in Seven Provinces with the Highest RCI/IDSD Scores in Indonesia)

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ABSTRACT

Purpose Research. The uneven distribution of demographic characteristics and regional competitiveness across Indonesian provinces creates structurally differentiated information needs that existing public library services have yet to address systematically. Although the Regional Competitiveness Index (RCI/IDSD) developed by BRIN provides a comprehensive twelve-pillar framework for assessing regional development performance, no prior study has integrated this instrument with demographic analysis to map strategic information needs comparatively across high-performing provinces, leaving a critical gap in both theoretical and policy literature on information services within decentralized governance contexts. **Research Method.** This study employed a qualitative descriptive design combining document analysis and comparative analysis. Secondary data is drawn from demographic data of each province from the Central Statistics Agency, IDSD data from BRIN in 2025, and supporting peer-reviewed literature. Data collection was followed by content analysis, the construction of a structured comparative matrix, typological clustering, and interpretive synthesis. **Analysis Data.** Data were analyzed in three sequential stages: content analysis, comparative and typological analysis, and strategic synthesis, validated through source triangulation and standardized conceptual categories. **Results.** Four distinctive typologies emerged: Metropolitan Formal, Tourism-Cultural, Urban Buffer, and Agrarian-Inclusive, each corresponding directly to measurable SDG attainment gaps across SDGs 1, 2, 3, 4, 8, 9, 10, 11, and 17. At the same time, SDG 6, 7, 13, 14, and 15 remained unreachable due to IDSD's inherent environmental blind spots. **Conclusion.** Strategic information needs are systemically differentiated, requiring asymmetric library interventions. Future research should develop a library-readiness index that integrates all 12 IDSD pillars and incorporates environmental indices to achieve holistic coverage of the SDGs.

Keywords: Information Needs; Regional Competitiveness Index; Demographic Analysis; Public Library; Sustainable Development Goals

A. INTRODUCTION

Regional development in Indonesia in the era of decentralization demands planning that is data-driven, responsive to community needs, and focused on improving regional competitiveness. In this context, demographic characteristics and regional competitiveness are two fundamental pillars that determine the direction and effectiveness of development policies (Bappenas, 2022; BRIN, 2023). Demographics reflect the actual conditions of the population as both the subject and object of development, while regional competitiveness measures a region's ability to create sustainable economic growth and improve community welfare (World Economic Forum, 2019; Ministry of Administrative and Bureaucratic Reform, 2024).

The Regional Competitiveness Index/RCI (*Indeks Daya Saing Daerah/IDSD*), developed by the National Research Agency of the Republic of Indonesia, is a strategic instrument for assessing regional development performance based on twelve main pillars, including institutions, infrastructure, adoption of information and communication technology (ICT), macroeconomic stability, health, skills, product markets, labor markets, financial systems, market size, business dynamism, and innovation capabilities (Ontowirjo et al., 2025). The provinces with the highest IDSD scores, namely DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java, show relatively advanced development achievements but still face structural challenges in the form of inter-regional inequality, gaps in human resource quality, and variations in access to public services (Ontowirjo et al., 2025).

Differences in geographic, socioeconomic, and cultural contexts across provinces create diversity in the patterns of public information needs. Public information needs are strongly influenced by demographic characteristics, such as population age structure, education level, health conditions, employment, and population mobility. This is reinforced by research findings showing that demographic factors influence needs, for example, in terms of health, access, and information search and use behavior in various age groups, from adolescents to the elderly (Siamian et al., 2023; Hanif & Warraich, 2023; Zhou et al., 2024; Nyinondi et al., 2025). Furthermore, information needs are also closely related to the pillars of the regional competitiveness index that determine the accessibility, quality, and relevance of information to people's lives. These needs are also related to regional competitiveness through the use of ICT that improves access, human resource quality, and innovation, as reflected in the pillars of the Global Competitiveness Index and strengthening competitiveness at the organizational level (Stiglitz et al., 2023; Wowiling et al., 2025; Arminkia et al., 2025).

There exists literature addressing regional competitiveness information systems (Rutkauskas et al., 2010); the transformation of a region's economic competitiveness from information to the knowledge economy (Trauth et al., 2009); the strategic function of universities in fostering regional development and

enhancing global competitiveness via information society infrastructure (Muresan et al., 2010); and Kogut & Brożek (2018) investigated the correlation between human capital and regional competitiveness. However, literature examining the need for demographic-based strategic information and regional competitiveness index to support public library services to achieve the SDGs and comprehensive studies integrating both perspectives in a comparative context between provinces is still very limited. Empirically, educational institutions and human capital have been proven to be the main determinants of a region's economic competitiveness in the knowledge-based economy era. The dependence of regional competitiveness on the synergy of education, research, and innovation demands a structured information system capable of bridging the gap between demographic data and strategic decision-making. Therefore, the integration of both perspectives is crucial for mapping the real capacity between provinces in creating strong economic added value based on intellectual excellence.

A comparative methodology is crucial for identifying patterns of similarities and differences in information requirements, policy implementation shortcomings, and best practices that can be adapted across regions, as demonstrated by numerous studies comparing international actors, nations, and individuals. Research shows that even though they face similar problems like the digital divide and health information needs, the ways they deal with them, their abilities, and the speed at which they adopt new technologies are all different because of institutional, socioeconomic, and human factors. Cross-national and organizational studies identify policy enablers and barriers, while research at the individual and community levels uncovers variations in access, digital literacy, and technology usage behaviors. This collectively underscores the importance of a comparative methodology combined with contextual analysis in developing more effective policies (Din et al., 2019; Schleiff et al., 2020; Wang et al., 2022; Yerkes et al., 2024; Niemann et al., 2024). Therefore, this study aims to map information needs based on demographic characteristics and IDSD pillars in seven provinces with the highest competitiveness index scores in Indonesia, comparatively, in order to identify patterns, gaps, and strategic needs that can support the strengthening of public information systems and public library services within the framework of inclusive and sustainable regional development.

This research provides theoretical benefits by enriching the literature on demographically based information needs and regional competitiveness indices in the context of decentralization through an in-depth comparative analysis. The resulting conceptual framework can be used for comparative analysis of information needs in other regions with different characteristics.

Practically, this research is useful for local governments in formulating responsive and inclusive public information policies in accordance with the demographic characteristics and competitiveness priorities of each region. For public library and information center managers, these findings support the design of services that adapt to demographic characteristics and regional development needs. For national

policymakers, this comparative analysis facilitates the identification of replicable best practices and gaps requiring specific interventions.

B. METHODS

(1) Research Design

This study uses a descriptive qualitative design with a document analysis and comparative analysis approach (Miles, Huberman, & Saldaña, 2014). This approach was chosen because it allows researchers to identify, analyze, and compare information needs based on demographics and *IDSD/RCI* (*Indeks Daya Saing Daerah/Regional Competitiveness Index*) pillars in seven provinces in a deep and contextual manner.

(2) Research Object

The research object is the seven provinces with the highest *IDSD* scores in Indonesia in 2025, namely (1) DKI Jakarta with a score of 4.16; (2) Bali with a score of 4.03; (3) DI Yogyakarta with a score of 4.00; (4) Banten with a score of 3.95; (5) West Java with a score of 3.93; (6) East Java with a score of 3.91; (7) Central Java with a score of 3.87. Each province is considered as one unit of analysis (case).

(3) Data Sources This research uses secondary data sourced from demographic data documents of each province for the year 2025 and *IDSD* data for the year 2025 from BRIN, as well as supporting literature in the form of scientific publications.

(4) Data Analysis Techniques

Data analysis is conducted through four main interrelated stages, referring to the data analysis techniques according to Miles, Huberman, & Saldaña (2014). First, content analysis to identify and categorize information based on demographic variables and *IDSD* pillars refers to **Data Collection, Data Reduction, or Data Condensation**. Second, comparative analysis and typological analysis refer to **Data Display**. Comparative analysis is used to compare characteristics between provinces using a comparative matrix, while typological analysis groups provinces based on similar characteristics. Fourth, synthesis and interpretation to develop a comprehensive framework for strategic information needs refer to **Conclusion Drawing and Verification**.

(5) Validity and Reliability

The validity of the research is ensured through data source triangulation from various independent institutions, while reliability is achieved through the consistency of analysis categories based on a standardized conceptual framework.

C. RESULT AND DISCUSSION

This chapter delineates the results and discussion that methodically articulate the research findings concerning the seven provinces in Indonesia with the highest *Regional Competitiveness Index (RCI/IDSD)* scores. The researchers initially analyzed demographic variables, including education, health, and population indices, to comprehend the socio-economic backdrop of each region. Subsequently, the strategic information requirements derived from demographics were comparatively assessed, followed by a comprehensive evaluation of the

strengths and weaknesses of public information services and public libraries in facilitating the twelve pillars of the Regional Competitiveness Index (RCI). Utilizing the discerned patterns of information needs and the typological analysis outcomes for each province, encompassing the categories **Digital Metropolitan, Tourism-Culture, Supporting Industry, and Inclusive Agrarian**, as a foundation to develop recommendations for enhancing public information systems and optimizing public library services. The concluding section presented strategic recommendations aimed at enhancing data infrastructure, institutional capacity, and digital literacy, alongside sectoral support tailored to each provincial typology, to expedite the attainment of the Sustainable Development Goals (SDGs) via inclusive and sustainable information services.

I. Comparative Analysis of Demographic Characteristics of Seven Provinces

Researchers provide a comparative analysis through structured tables to facilitate readers' understanding of the demographic differences and similarities among provinces in a more organized and lucid manner. The tables below bring together information from many sources and make it easy to spot trends. This makes it easy for readers to see how each province ranks on different demographic factors. Each table has the result of the analysis that goes with it, which explains the main findings and what they mean for the needs of information.

Table I. Comparison of Population, Growth, and Population Density

Provinces (Provincial Ranking Based on 2025 RCI/IDSD Scores)	Population (2025, million people)	Annual Growth Rate (% 2020-2025)	Population Density (people/km ²)	Urbanization Rate (%)	Dominant Characteristics
DKI Jakarta (1)	10.678,0	0,23	16.155	100,0	Metropolitan area with very high population density and full urbanization as the center of the economy and government.
Bali (2)	4.461,3	0,95	798	74,3	Tourist area with relatively high urbanization and moderate population growth.
DI Yogyakarta (3)	3.781,5	0,70	1.193	78,0	Education and cultural area with high population density and relatively high urbanization.
Banten (4)	12.537,4	1,32	1.341	73,7	Buffer zone of the capital city with high population growth and increasing urbanization.
West Java (5)	50.759,0	1,20	1.370	83,1	The province with the largest population and a high urbanization rate is an industrial and residential area.
East Java (6)	42.089,3	0,79	876	58,6	A province with a large population but moderate urbanization due to many agrarian areas.
Central Java (7)	38.233,9	0,74	1.113	54,3	Province with agrarian characteristics and relatively lower urbanization compared to other provinces in Java.

Source: Demographic Conditions of the Provinces of DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java (Adapted from BPS Provinces in Figures, 2025)

Based on the demographic data of the seven provinces with the highest RCI/IDSD scores, distinct strategic information needs emerge that align with their respective characteristics: DKI Jakarta (10.68 million people; density 16,155 people/km²; urbanization 100%) requires a real-time information system for mobility management, density, and digital public services; Banten (12.54 million; highest growth 1.32%) and West Java (50.76 million; urbanization 83.1%) as the capital's buffer need a dashboard for integrating migration data, infrastructure, and housing;



Bali (4.46 million; urbanization 74.3%) and DI Yogyakarta (3.78 million; urbanization 78%) demand tourism, culture, education, and open research data portals; while East Java (42.09 million; urbanization 58.6%) and Central Java (38.23 million; urbanization 54.3%) with an agrarian base require precision agriculture platforms, rural digital inclusion, and mobile information literacy services. From this, four typologies emerge, namely: metropolitan, urban buffer, tourism-culture, agrarian-rural, which form the basis for recommendations: the development of an integrated provincial SDGs portal, capacity building for librarians in managing specific demographic data, the expansion of digital and mobile library services, and multistakeholder partnerships to support the twelve pillars of RCI/IDSD comparably (Solanke, 2025; Pathak, 2025; Lovas, 2024; Duddu, 2018; Hussain & Abdullah, 2025).

Table 2. Comparison of Population Age Structure and Dependency Ratio

Provinces (Provincial Ranking Based on 2025 RCI/IDSD Scores)	Children 0-14 years (%)	Productive 15-64 years (%)	Elderly ≥65 years (%)	Dependency Ratio (per 100 productive population)	Transition Stage
DKI Jakarta (1)	20,4	72,1	7,5	38,7	Advanced demographic bonus (dominance of productive age)
Bali (2)	21,0	70,5	8,5	41,9	Toward an aging population
DI Yogyakarta (3)	19,2	69,3	11,5	44,3	Aging population
Banten (4)	24,7	70,2	5,1	42,4	Demographic bonus
West Java (5)	25,1	69,7	5,2	43,5	Demographic bonus
East Java (6)	22,0	69,4	8,6	44,1	Toward an aging population
Central Java (7)	21,8	68,5	9,7	46,0	Toward an aging population

Source: Demographic Conditions of the Provinces of DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java (Adapted from BPS in figures, 2025)

The demographic data of the seven provinces with the highest RCI/IDSD scores (2025), two main groups emerge: the "demographic bonus" provinces, include DKI Jakarta (15-64 years 72.1%; ≥65 years 7.5%; dependency ratio 38.7), Banten (70.2%; 5.1%; 42.4), and West Java (69.7%; 5.2%; 43.5) and the "aging population" provinces, include Bali (70.5%; 8.5%; 41.9), DI Yogyakarta (69.3%; 11.5%; 44.3), East Java (69.4%; 8.6%; 44.1), and Central Java (68.5%; 9.7%; 46.0). The demographic bonus group requires public information systems and library services that support the SDG Pillars of **Superior Human Resources** and **Inclusive Economy** through access to employment data, entrepreneurship training, e-learning, and innovation portals (Pillars 4, 8, 9) (IFLA, 2018; IFLA & UNESCO, 2022). Conversely, the aging provinces need to focus on the Pillars of **Health** and **Social Protection** with elderly health reference services, e-health corners in libraries, and information on the prevention and management of chronic diseases (Pillars 3, 1) (IFLA, 2018; IFLA & UNESCO, 2022). Based on the patterns of needs, a typology can be created: (1) productive metropolitan, (2) productive urban buffer, (3) aging tourism-culture, and (4) aging agrarian. Recommendation: develop a hybrid library that provides (a) a cross-pillar RCI/IDSD public dashboard, (b) digital channels for youth (job portal, online courses), and (c) mobile service posts for the elderly (health information, basic digital literacy), and enhance multistakeholder partnerships in data management and service program implementation according to the demographic characteristics of each province



(Furbani & Furbani, 2025; Salaila et al., 2015; Titahena et al., 2023; Ayu, 2023; Solanke, 2025).

Table 3. Comparison of Human Resource Quality: Education and Health

Provinces (Provincial Ranking Based on 2025 RCI/IDSD Scores)	Average Years of Schooling (years)	Literacy Rate 15+ (%)	Pure College Participation (%)	Life Expectancy (years)	Stunting Prevalence (%)	Human Capital Achievement
DKI Jakarta (1)	11,31	99,55	38,62	74,09	14,8	Human resource achievements are very good because they have a very high average length of schooling and literacy rate, as well as large university participation, with a relatively low stunting rate.
Bali (2)	10,93	97,80	32,74	74,12	8,0	Excellent human resource achievements are supported by high levels of education, high life expectancy, and the lowest prevalence of stunting.
DI Yogyakarta (3)	11,25	99,35	40,01	75,02	15,0	Human resource achievements are very good because they have the highest college participation and life expectancy, with almost perfect literacy levels.
Banten (4)	9,35	97,45	25,74	70,71	20,0	Human resource achievements are good, but still need improvement because the average length of schooling is lower, and stunting is still quite high.
West Java (5)	9,12	97,13	24,95	72,21	21,7	Human resource achievements are quite good with high literacy rates, but are still hampered by relatively high levels of stunting.
East Java (6)	9,57	96,82	26,14	71,74	19,2	Human resource development is good with relatively high education indicators, but the prevalence of stunting still needs to be suppressed.
Central Java (7)	9,40	96,94	25,03	72,39	20,8	Human resource development is good because education indicators are quite good, but still show figures that face quite serious stunting problems.

Source: Demographic Conditions of the Provinces of DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java (Adapted from BPS Provinces in Figures, 2025)

A comparative analysis of human resource quality achievements in seven provinces with the highest IDSD scores reveals four typologies of strategic information needs: (1) *Formal Metropolitan* (DKI Jakarta: average years of schooling 11.31 years; literacy 99.6%; higher education participation 38.6%; life expectancy 74.1 years; stunting 14.8%) requires advanced library collections on higher education policies, population health research, and stunting prevention modules; (2) *Tourism-Culture* (Bali: 10.93 years/97.8%/32.7%/74.1 years/8.0% dan DI Yogyakarta: 11.25 years/99.4%/40.0%/75.0 years/15.0%) needs a repository of best practices in tourism health, e-learning cultural literacy, and micro-nutrition training platforms for vulnerable groups; (3) *Supporting Industry* (Banten: 9.35 years/97.5%/25.7%/70.7 years/20.0% dan West Java: 9.12 years/97.1%/25.0%/72.2 years/21.7%) must be facilitated with vocational high school teaching materials, functional literacy improvement modules, and worker nutrition education materials; and (4) *Inclusive Agrarian* (East Java: 9.57 years/96.8%/26.1%/71.7 years/19.2% dan Central Java: 9.40 years/96.9%/25.0%/72.4 years/20.8%) requires mobile library services containing mother-child health guides, basic sustainable agriculture literacy, and school participation improvement modules. Based on these four typologies, the development of a cross-pillar SDGs public information system is recommended in the form of an integrated digital platform that provides demographic-economic specific content packages, capacity building for librarians in sectoral content development, and the expansion of digital and mobile library services with health, nutrition, and skills literacy modules to address the comparative needs of

provinces (Mushtaq & Arshad, 2022; Fleary et al., 2022; Solanke, 2025; Chaitra D & Maranna O, 2023; Pathak, 2025; Ehrenberg, 2024; Titahena et al., 2023; IFLA, 2018; Ekere et al., 2019).

Table 4. Comparison of Employment and Economic Conditions

Provinces (Provincial Ranking Based on 2025 RCI/IDSD Scores)	Labor Force Participation Rate (%)	Open Unemployment Rate (%)	Informal Workers (%)	GRDP per Capita (million Rp/year)	Gini Index	Economic Characteristics
DKI Jakarta (1)	67,5	6,5	36,9	367.687	0,41	The economy is highly developed, with the highest per capita GRDP. The economic structure is dominated by the service and formal sectors, but income inequality is relatively high, and the unemployment rate remains quite high.
Bali (2)	73,1	2,7	58,2	72.658	0,38	A tourism-based economy with a high level of work participation and very low unemployment, but the proportion of informal workers is still quite large, so that the economic structure is relatively vulnerable to the tourism sector.
DI Yogyakarta (3)	74,5	3,9	57,0	55.039	0,44	The labor participation rate is high with relatively low unemployment, but the economy is still dominated by the informal sector and the level of income inequality is quite high.
Banten (4)	65,7	7,5	45,3	74.673	0,39	Industrial areas with a relatively high per capita GRDP, but facing a relatively high open unemployment rate and lower labor force participation compared to other provinces.
West Java (5)	67,9	7,4	49,7	59.865	0,41	A large industrial and manufacturing base with relatively high employment participation, but still facing relatively high unemployment rates and significant income inequality.
East Java (6)	70,4	4,2	57,6	80.856	0,37	The economic structure is quite strong with high GRDP per capita and a relatively low unemployment rate, although the proportion of informal workers is still quite large.
Central Java (7)	69,3	5,2	60,1	50.824	0,36	The economic structure is dominated by the informal sector with the highest level of informal workers, although the level of income inequality is relatively lower than other provinces.

Source: Demographic Conditions of the Provinces of DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java (Provinces in Figures, 2025 and Official Employment Statistics News (*Berita Resmi Statistik/BRS*))

A comparative analysis of the seven provinces with the highest RCI/IDSD scores shows four typologies of strategic information needs that are aligned with the employment and economic conditions of each region: (1) “Formal Metropolitan” (DKI Jakarta) with the highest GRDP per capita (Rp 367.7 million), moderate work participation (67.5%), relatively low informal workers (36.9%) but high inequality (Gini index 0.41) and unemployment of 6.5% requires a public dashboard for monitoring the formal labor market, income gap analysis and digital economic literacy programs (Pillars 8, 10, 4) (IFLA, 2018; IFLA & UNESCO, 2022); (2) “Informal Tourism” (Bali, DI Yogyakarta) with very high participation (>73%), low unemployment (<4%), informal workers for DI Yogyakarta 57% and Bali > 58% medium GRDP per capita (Rp 55–73 million) requires an integrated tourism and MSME research portal, social protection modules for freelancers and cultural e-learning services (Pillars 8, 11, 12) (IFLA, 2018; IFLA & UNESCO, 2022); (3) “Buffer Industry” (Banten, West Java) with work participation of 66–68%, high unemployment (7.4–7.5%), GRDP per capita of IDR 60–75 million and Gini index of 0.40–0.41 requires a manufacturing investment monitoring system, a vocational

platform based on industrial sector data and information on local job opportunities (Pillars 9, 4, 8) (IFLA, 2018; IFLA & UNESCO, 2022); and (4) “Agrarian-Inclusive” (East Java, Central Java) with high informal workers (57.6% for East Java) and the highest informal employment for Central Java (60.1%), the lowest GRDP per capita (Rp 50 million for Central Java) and GRDP per capita for East Java (Rp 81 million) and the lowest Gini index (0.36–0.37) require agritech portals, rural financial inclusion services and mobile digital literacy programs (Pillars 2, 1, 5) (IFLA, 2018; IFLA & UNESCO, 2022). From this typology, it is recommended to develop an integrated cross-pillar public information platform for RCI/IDSD, increase the capacity of librarians in sectoral data management, digital and mobile library services customized according to the demographic-economic characteristics of each province, and multi-stakeholder partnerships to ensure inclusive and sustainable access (Mushtaq & Arshad, 2022; Fleary et al., 2022; Solanke, 2025; Chaitra D & Maranna O, 2023; Pathak, 2025; Ehrenberg, 2024; Titahena et al., 2023; IFLA, 2018; Ekere et al., 2019; Bouaamri, 2023).

2. Comparative Table of Achievements of the Twelve Pillars of RCI/IDSD

The researchers display a comparative analysis of achievements across the twelve pillars of the RCI/IDSD in tabular format to provide readers with insight into the dynamics of competition between provinces. Each pillar directly influences the type and amount of information needed by local governments, public libraries, and the general public. The following is an overview of the RCI/IDSD Measurement Framework for 2025.

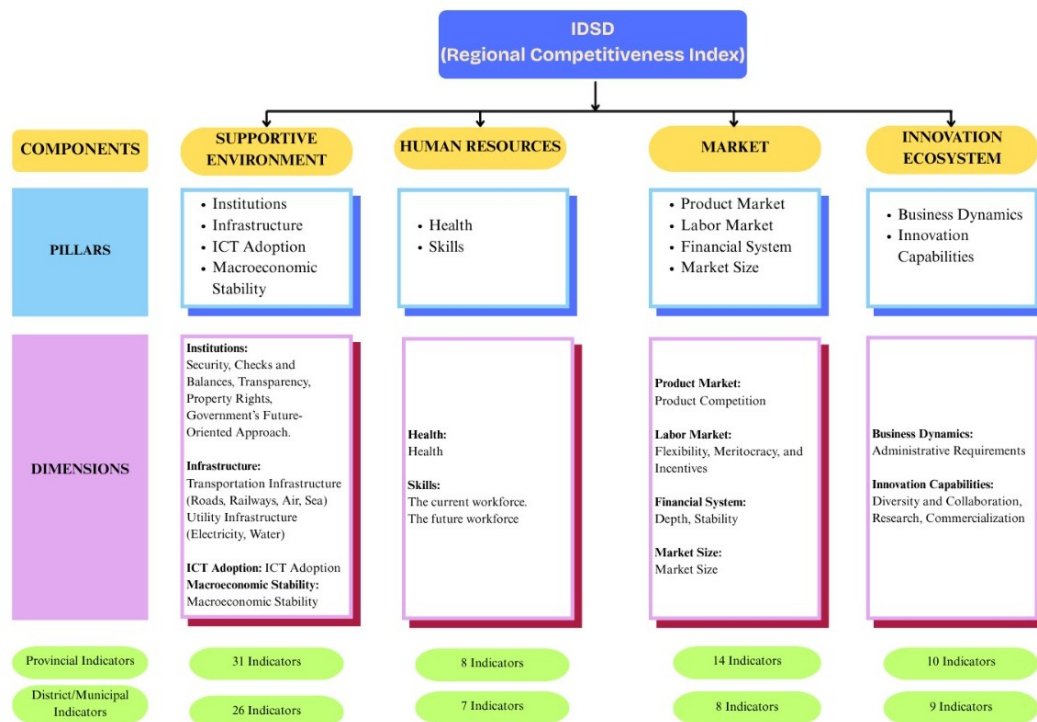


Figure 1. RCI/IDSD 2025 Measurement Framework (BRIN, 2025)
Table 5. Comparison of Achievements of Supporting Environment Components

Provinces (Provincial Ranking Based on RCI/IDSD Score)	Total RCI/IDSD Score	Institutional Pillars (Score)	Infrastructure Pillar (Score)	ICT Adoption Pillars (Score)	Pillars of Macroeconomic Stability (Score)	Main Power	Main Weaknesses
DKI Jakarta (1)	4,16	4,08	4,74	5,00	4,62	Adoption of ICT and Infrastructure is very high.	Institutions are relatively lower compared to other pillars.
Bali (2)	4,03	4,73	3,71	4,90	4,16	Strong ICT Institutions and Adoption.	Relatively lower infrastructure.
DI Yogyakarta (3)	4,00	4,84	3,65	4,64	4,16	Institutions and ICT Adoption are very good.	Infrastructure is still lower.
Banten (4)	3,95	4,68	3,76	4,48	4,55	Macroeconomic stability and strong institutions.	Relatively lower infrastructure.
West Java (5)	3,93	4,32	4,48	4,36	4,34	Good infrastructure and economic stability.	Relatively lower institutions.
East Java (6)	3,91	4,77	4,68	4,23	4,26	Institutions and infrastructure are very strong.	ICT adoption is relatively lower.
Central Java (7)	3,87	4,77	4,54	4,02	4,30	High institutions and infrastructure.	ICT adoption is relatively lower.

Source: Adapted from the BRIN Report 'Regional Competitiveness Index/RCI/IDSD 2025' (Ontowirjo et al., 2025)

The data in Table 5 shows the pattern of strengths and weaknesses of the supporting environment in the seven provinces with the highest IDSD scores, which guide the determination of strategic information needs and provincial typology: (1) DKI Jakarta (RCI/IDSD score 4.16) excels in Infrastructure (4.74) and ICT Adoption (5.00) but is lacking in Institutions (4.08), thus requiring strengthening of data governance and institutional policies so that the already technologically strong digital library platforms and public information systems can be driven by a solid regulatory framework; (2) Bali (4.03) and DI Yogyakarta (4.00) have very good Institutions (4.73–4.84) and ICT Adoption (4.64–4.90) but relatively lower Infrastructure (3.65–3.71), requiring investment in physical library infrastructure and broadband networks to support digital cultural and tourism services; (3) Banten (3.95) shows high macroeconomic stability (4.55) and strong Institutions (4.68) but weak Infrastructure (3.76), so it is necessary to integrate regional economic data through a cross-pillar portal that can be accessed even though local infrastructure is limited; (4) West Java (3.93), East Java (3.91) and Central Java (3.87) are equally superior in Institutions (4.32–4.77) and Infrastructure (4.48–4.68) but ICT Adoption is lower (4.02–4.36), so the priority is a digital literacy program for librarians and the public to maximize the use of public information platforms and digital/mobile library services. From this pattern, four provincial typologies were formulated, include: Digital Metropolitan, Culture-ICT Hybrid, Stable Economy, and Strong Infrastructure-Institutions, which became the basis for recommendations: development of an integrated platform across SDG pillars (Solanke, 2025; IFLA & UNESCO, 2022), strengthening institutional capacity in public data management (Auwah et al., 2024), expansion of physical and digital infrastructure (infrastructure hybridization) in weak areas (Salaila et al.,

2015), and ICT adoption training for librarians and users to ensure library services support the 12 pillars of RCI/IDSD in an inclusive and sustainable manner (Lestari & Purwaningtyas, 2023; Paik, 2023; Bouaamri, 2023).

Table 6. Comparison of Human Resource Component Achievements

Provinces (Provincial Ranking Based on 2025 RCI/ IDSD Score)	Health (Score)	Skills (Score)	Health Priority Focus	Skill Priority Focus
DKI Jakarta (1)	4,07	3,57	Health outcomes are relatively good, indicating adequate quality of health services and access, so that the policy focus is more on maintaining the quality of health services.	Skill scores are still at an intermediate level, so it is necessary to improve the quality of education and workforce training.
Bali (2)	4,02	4,05	Health conditions are considered good, so they are not a top priority, but still require efforts to maintain the quality of public health services.	Human resource skills are already in the high category, so the policy focus is more on maintaining and adapting skills to industry needs.
DI Yogyakarta (3)	4,19	4,03	Has the highest health score compared to other provinces, thus indicating a very good quality of public health.	The level of human resource skills is also high, thus reflecting good quality of education and training.
Banten (4)	3,84	3,30	The health score is relatively lower compared to several other provinces, so it is necessary to improve access and quality of health services.	Skill scores are low, making them a top priority in improving quality in areas such as education, job training, and workforce competency.
West Java (5)	4,09	3,17	Health outcomes are relatively good and stable compared to other provinces.	Has the lowest skills score, indicating the need for significant improvement in the quality of workforce skills.
East Java (6)	3,95	3,79	The health score is at a medium level, so there is still a need to improve the quality of public health services.	Human resource skills are at a fairly good level, but still need strengthening through increased training and vocational education.
Central Java (7)	4,16	3,63	Health conditions are relatively good with a fairly high score compared to other provinces.	Skill scores are at an intermediate level, requiring gradual improvement to increase the competitiveness of the workforce.

Source: Adapted from the BRIN Report 'Regional Competitiveness Index/RCI/IDSD 2025' (Ontowirjo et al., 2025)

A comparative analysis of the human resource achievements of the seven provinces with the highest RCI/IDSD scores confirms four typologies of information needs based on the pillars of *Health* (SDG 3) and *Education and Skills* (SDG 4), include: (1) **Formal Metropolitan** (DKI Jakarta: Health 4.07; Skills 3.57) requires a library as an e-health literacy center and advanced training portal to strengthen workforce competencies; (2) **Tourism-Culture** (Bali 4.02/4.05 and DI Yogyakarta 4.19/4.03) requires a digital repository of tourism health protocols, wellness information for the elderly, and skill adjustment modules in the service sector; (3) **Supporting Industries** (Banten 3.84/3.30 and West Java 4.09/3.17) must be facilitated with occupational health collections, manufacturing vocational teaching materials, as well as an internship and competency certification opportunity dashboard; and (4) **Inclusive Agrarian** (East Java 3.95/3.79 and Central Java 4.16/3.63) requires mobile library services containing rural community health guides, sustainable agricultural literacy, and agribusiness entrepreneurship training. Recommendations for strengthening public information systems and public library services include: integration of e-health corners and telemedicine references (Solanke, 2025; Paik, 2023; Ekere et al., 2019); development of multilingual e-learning modules for informal workers in provinces with a tourism-cultural typology (Ekwueme et al., 2023; Gupta, 2014); establishment of a digital

“Vocational Hub” (Talaverano & José, 2024; Chaitra D & Maranna O, 2023); as well as mobile library services (Titahena et al., 2023) with health themes (Ekere et al., 2019) and agritech (Sivalingam & Gamage, 2023), supported by cross-pillar RCI/IDSD partnerships and librarian training in SDGs content management (Basurto et al., 2022).

Table 7. Comparison of Market Component Achievements

Provinces (Provincial Ranking Based on 2025 IDSD Score)	Product Market Pillar (Score)	Workforce Pillar (Score)	Financial System Pillars (Score)	Market Size Pillar (Score)	Main Power	Main Weaknesses
DKI Jakarta (1)	2,64	4,58	4,32	5,00	Market size and workforce are very strong.	The product market is relatively low.
Bali (2)	3,30	3,92	3,62	4,40	Market size and workforce are good.	Lower product market.
DI Yogyakarta (3)	3,03	4,45	2,83	4,29	Very high labor force.	The financial system is very low.
Banten (4)	2,14	4,06	3,78	4,95	Market size and workforce are strong.	Low product market.
West Java (5)	1,85	3,46	3,47	5,00	The market size is huge.	The product market is very low.
East Java (6)	2,24	2,70	2,59	5,00	The market size is very large.	Labor, financial system, and low-product markets.
Central Java (7)	2,07	2,94	2,36	5,00	Large market size is high.	The product market and financial system are relatively low.

Source: Adapted from the BRIN Report 'Regional Competitiveness Index/RCI/IDSD 2025' (Ontowirjo et al., 2025)

A comparative analysis of market components in the seven provinces with the highest RCI/IDSD scores reveals four typologies of strategic information needs, include: (1) **Digital Metropolitan** (DKI Jakarta) which has a very strong Market Size (5.00) and Labor Pillar (4.58) but a low Product Market (2.64) requires an e-commerce data portal and consumer demand analysis to support service MSMEs and creative industries; (2) **Tourism-Culture** (Bali and DI Yogyakarta) with a high Market Size (4.29–4.40) and Labor (3.92–4.45) but a relatively weak Product Market (3.03–3.30) and Financial System (2.83–3.62) requires a digital repository of local products, a microfinance inclusion module and tourist market segment research; (3) **Buffer Industry** (Banten and West Java) which has strong Market Size (4.95–5.00) and good Labor (3.46–4.06) but very low Product Market score (1.85–2.14) requires export-manufacturing opportunity map, raw material availability dashboard, and product certification information; and (4) **Inclusive Agriculture** (East Java and Central Java) which excels in Market Size (5.00) but has low scores in Labor (2.70–2.94), Financial System (2.36–2.59) and Product Market (2.07–2.24) so it requires integrated agribusiness portal, digital agricultural marketing literacy, and access to agricultural financing data. Recommendations: develop a cross-pillar integrated public market platform for RCI/IDSD (Solanke, 2025), strengthen digital library collections (Pan et al., 2021; Ginting et al., 2023) with regional trade and financial data, and provide digital literacy services (Ylipulli et al., 2023) and e-commerce for MSMEs, tourism actors, industry, and farmers to support the achievement of SDGs (Chaitra D & Maranna O, 2023).

Table 8. Comparison of the Achievements of Innovation Ecosystem Components

Provinces (Provincial Ranking Based on 2025 RCI/IDSD Score)	Business Dynamics Pillars (Score)	Innovation Capability Pillar (Score)	Main Power	Main Weaknesses
DKI Jakarta (1)	2,95	4,35	Very high innovation capability.	Business dynamics are still lower.
Bali (2)	3,28	4,25	Strong innovation capabilities.	Business dynamics still need strengthening.
DI Yogyakarta (3)	3,01	4,86	High innovation capability.	Business dynamics are relatively low.
Banten (4)	3,80	4,05	Strong innovation capabilities.	Business dynamics still need strengthening.
West Java (5)	3,91	4,68	High innovation capability.	Business dynamics still need improvement.
East Java (6)	3,95	4,71	Strong innovation capabilities.	Business dynamics need to be strengthened.
Central Java (7)	3,97	4,68	Innovation capabilities are quite strong	Still need to improve the quality of business dynamics.

A comparative analysis of the innovation ecosystem pillars in the seven provinces with the highest RCI/IDSD scores reveals a pattern of strategic information needs regarding increasing business dynamics based on their respective innovation capabilities: (1) “Digital Metropolitan” (DKI Jakarta: Dynamics 2.95; Capability 4.35) requires a library platform as a startup data hub, incubation guide, and access to digital market research; (2) “Creative Tourism” (Bali 3.28/4.25 and DI Yogyakarta 3.01/4.86) requires a repository of tourism innovation best practices, a creative entrepreneurship module, and a cultural research collaboration portal; (3) “Buffer Industry” (Banten 3.80/4.05 and West Java 3.91/4.68) requests a 4.0 manufacturing portal, an industrial product development toolkit, and a supplier-buyer network dashboard; and (4) “Inclusive Agriculture” (East Java 3.95/4.71 and Central Java 3.97/4.68) requires mobile libraries as centers of agri-technology knowledge, innovative agribusiness guides, and digital farmer-startup forums. Recommendations for strengthening public information systems and library services include: building digital innovation hubs in every public library (Ylipulli et al., 2023), integrating RCI/IDSD cross-pillar R&D databases (Solanke, 2025), providing maker spaces and coworking corners for innovator communities (Günes & Canatar, 2022), and training librarians as innovation facilitators and sectoral data managers (Basurto et al., 2022) to encourage the transformation of knowledge into sustainable solutions (Chatterjee et al., 2023).

The eight comparative analyses of strategic information needs typology based on the IDSD scores of the seven highest provinces have a strong systemic relationship with the Sustainable Development Goals (SDGs) indicator framework as stipulated in UN Resolution A/RES/70/1 (UN, 2015) and operationalized in Indonesia through Presidential Regulation Number 59 of 2017 and updated through Presidential Regulation Number 111 of 2022 concerning the Implementation of the Achievement of Sustainable Development Goals. The following is a conceptual framework model from the results of the comparative analysis of strategic information needs typology based on the RCI/IDSD scores of the seven highest provinces which can be used as a reference for Public Libraries in providing services to support the achievement of SDGs in seven provinces, namely DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java.

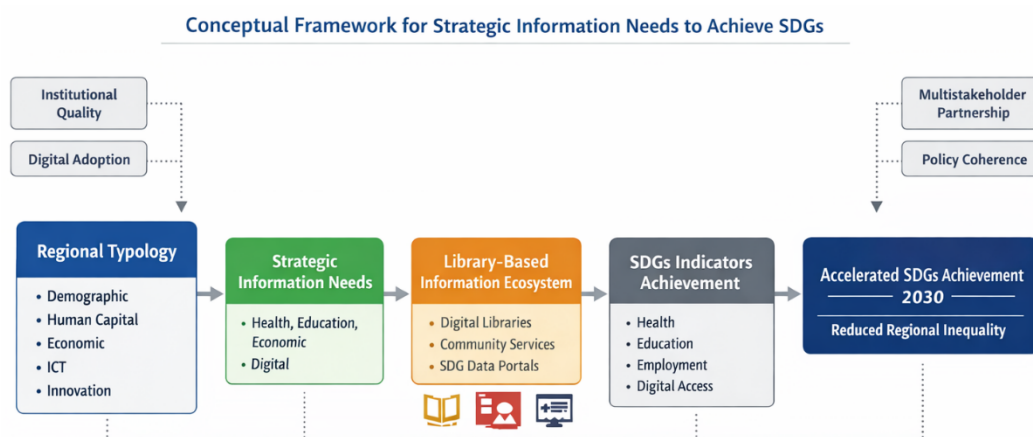


Figure 2. Conceptual framework model from the comparative analysis of the typology of Strategic Information Needs (SIN) based on RCI/IDSD scores to achieve the SDGs in seven provinces: DKI Jakarta, Bali, DI Yogyakarta, Banten, West Java, East Java, and Central Java. Source: Researchers' analysis results (2025)

E. CONCLUSION

This research proves that the need for strategic information in the seven provinces with the highest IDSD scores is systematically formed from the interaction between demographic characteristics, human resource quality, employment conditions, institutional environment, innovation ecosystem, and market dynamics unique to each region, resulting in four distinct typologies: Formal Metropolitan, Tourism-Culture, Supporting Industry, and Inclusive Agrarian. Each typology has been proven to directly correspond with the gaps in the achievement of specific and measurable SDG indicators, where SDG 1, 2, 3, 4, 8, 9, 10, 11, and 17 are explicitly covered thru the analyzed IDSD variables, while SDG 5, 12, and 16 are only touched upon implicitly, and SDG 6, 7, 13, 14, and 15 are not reached because the twelve IDSD pillars are inherently more oriented toward the socio-economic-technology dimension and have not yet integrated the environmental, energy, and climate dimensions as their main measurement variables. These findings also reveal that strength in one IDSD pillar does not automatically uplift the others—as seen in DKI Jakarta, which excels technologically but is weak institutionally, and Central Java, which has a strong institutional foundation but is hindered by low ICT adoption and financial inclusion—thus emphasizing that public information systems and public library services must be designed asymmetrically and customized according to the specific profiles of each typology, rather than using a uniform approach, so that they can function as core strategic infrastructure in the national sustainable development architecture as mandated by the principle of leaving no one behind in the 2030 Agenda (UN, 2015; IFLA, 2018; IFLA & UNESCO, 2022).

Based on these findings, further research is recommended to develop a library readiness index that explicitly integrates the twelve pillars of IDSD as an evaluation framework, so that the gap between the available information service capacity and



the unachieved SDG indicators can be identified and prioritized quantitatively based on evidence. Second, the expansion of the analytical framework by integrating environmental indices such as the Environmental Performance Index (EPI) or the Planetary Boundaries Framework into the established provincial typology is urgently needed so that the coverage of SDG 6, 7, 13, 14, and 15, which are absent in this study, can be fulfilled and the resulting library service recommendations are truly holistic, in line with the indivisible nature of the SDGs as emphasized by the United Nations (2015). Third, a trial implementation of an integrated cross-pillar public information platform thru a longitudinal study design in each provincial typology is necessary to produce a replicable model that can be adapted by provinces with similar characteristics outside Java and Bali, in order to ensure that the transformation of information for sustainable development reaches all regions of Indonesia without exception.

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