DISTRICT DIGITAL READINESS INDEX (DDRI)

2023 Year in Review

ICT Agency of Sri Lanka
Department of Census and Statistics

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Department of Census & Statics

District Digital Readiness Index

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The District Digital Readiness Index (DDRI) is a comprehensive assessment tool designed to evaluate and measure the digital preparedness of various districts across the country. In an increasingly interconnected world driven by digital technologies, understanding the varying degrees of digital readiness across regions is essential for informed policymaking, resource allocation, and strategic development. The DDRI examines a range of factors, such as technology infrastructure, access to capacity, business environment, and the presence of innovative ecosystems, to provide insights into the strengths and weaknesses of different regions in embracing the digital age. This high-level introduction sets the stage for a deeper exploration of how regions within a nation are positioned to harness the opportunities and address the challenges presented by the digital era.

Acronyms

DDRI	District Digital Readiness Index
CRI	Cluster Readiness Index
DDTCS	District Digital Transformation Committees
DE	Digital Economy
IT	Information Technology
ICT	Information and Communication Technology
ICTA	Information and Communication Technology Agency of Sri Lanka
DCS	Department of Census and Statistics
TRC	Telecommunication Regulatory Commission
UNCTAD	United Nations Conference on Trade and Development
BER	Business Environment Readiness
DAR	Digital Adoption Readiness
TIR	Technology Infrastructure Readiness
CGR	Capacity Growth Readiness
SER	Socio Economic Readiness

Table of content

Executive Summary

The District Digital Readiness Index (DDRI) serves as a vital tool for assessing and understanding the digital landscape within our nation's diverse regions. In an era where digital technologies are reshaping economies, societies, and daily life, the DDRI empowers policymakers, businesses, and communities with insights into the digital readiness of various districts.

This comprehensive index takes into account nineteen multifaceted set of criteria, ranging from infrastructure, capacity, connectivity to digital literacy and innovation ecosystems. By doing so, it paints a nuanced picture of how well-equipped different districts are to thrive in the digital age.

Following is the summary of DDRI assessment.

Regional Disparities: The DDRI reveals significant disparities in digital readiness among districts. While some areas have embraced digital transformation, others lag behind, potentially exacerbating existing inequalities.

Policy Implications: The DDRI highlights the need for tailored policies and interventions. Policymakers can draw insights from high-performing regions to inform strategies for improving digital readiness in lagging areas.

Future Challenges: As the digital landscape continues to evolve, ongoing investment in digital infrastructure, education, and innovation will be essential. Districts must adapt and innovate to remain competitive in a rapidly changing global digital economy.

District-based Action Plans: Comprehensive action plans that leverage the findings of the District Digital Readiness Index to drive digital transformation and enhance the district's overall readiness for the digital age is been formulated.

Implementation Approach: District Digital Transformation Committees (DDTCs) has been established in each district to effectively implement the action plans derived from the District Digital Readiness Index and drive meaningful digital transformation in the region. This approach will help ensure that the district remains competitive, resilient, and well-prepared for the digital challenges of the future.

DDRI underscores the importance of understanding and addressing regional differences in digital readiness. It provides a roadmap for policymakers, businesses, and communities to identify strengths, bridge gaps, and ensure that no district is left behind in the digital transformation journey. By leveraging the insights gained from the DDRI, we can craft a more inclusive and prosperous digital future for all our regions.

1. Digital Economy landscape of Sri Lanka

The digital economy refers to an economic system that is primarily based on digital technologies, digital assets, and digital platforms. It encompasses a wide range of economic activities that rely on digital information and communication technologies (ICT) to create, distribute, and consume goods and services. The digital economy is characterized by the rapid adoption of digital technologies and the transformation of traditional industries and business models. The foundation of the Digital Economy is connectivity, enabled by seamless interconnection of people, organizations, as well as machines.

The digital economy globally as well as in Sri Lanka has a profound impact on various aspects of society, including the way people work, communicate, shop, and access information. It has brought new possibilities and opportunities reshaping businesses, industries, jobs and lifestyles. The current Digital Transformation Landscape of Sri Lanka is fertile for opportunities that can create systemic transformation, consolidating and improving existing efforts undertaken by all sectors. The United Nations Conference on Trade and Development (UNCTAD) report on Digital Economy (2021) indicates that the county's Digital Economy is gradually emerging with an estimated contribution of 4.37% of the GDP, emphasizing its significance to the country's economy.

The Digital Industry of Sri Lanka, one of the fastest growing sectors, employs more than 150,000 knowledge workers and earned more than USD 1.2 billion export revenue as at the end of 2021. Fully fledged economies in America, Europe, UK and Asia Pacific as well as emerging economies in Africa, East Asia and South Asia already reaps benefits of this Industry opening up an exponential growth opportunity globally, imperative to Digital transformation. A fast-growing tech start-up ecosystem also exists in Sri Lanka and a number of organizations have initiated involvement towards supporting start-ups.

The Digital Economy Strategy of ICTA looks to utilize existing programs and all relevant partners in the ecosystem to develop and implement an integrated Digital transformation in Sri Lanka. This approach has paved the way for a thriving and effective Digital Economy, with higher operational efficiency, lower costs and better services and outcomes for its people. The strategy takes a holistic approach with the inclusion of all the stakeholders in the economy, including the citizens of all socio-cultural and economic backgrounds to actively participate and benefit from the Digital Economy.

Regional disparity is the key challenge to achieve inclusive digital development in Sri Lanka. UNCTAD also identifies that there is a significant regional digital cleave among the countries globally as well as within the countries, in terms of connectivity and internet usage which are prerequisite to the development of Digital Economy. Further, it is highlighted that for the counties to participate in and to benefit from the Digital Economy, accessibility to ICT is vital. ICTA deduces that this digital inconsistency caused by regional disparities in diverse dimensions cannot merely be addressed with ICT infrastructure policies, and instead requires policies for inclusive regional development with focused attention on addressing the regional inequalities.

2. Inclusive Regional Development Drive

Inclusive regional development drive of which is being adopted in collaboration with multiple entities such as Ministry of is a commitment to building resilient, sustainable, and equitable communities across the country. The vision for inclusive regional development is rooted in the belief that every individual, regardless of their background or circumstances, should have the opportunity to thrive and contribute to the progress of their region. In this endeavor, aim to create a future where no one is left behind, where the benefits of development are shared by all, and where diversity and inclusivity are celebrated as sources of strength.

A robust Digital Economy requires all the stakeholders to productively participate and benefit from the digital technologies. A major challenge to achieve this in Sri Lanka is the digital apportion among different geographic regions within the country. ICTA introduces the inclusive regional development initiative aiming to bridging this obstacle and pursuing digital transformation to make Sri Lanka a digitally inclusive country.

The regional development approach offers salient insights for economic development policy and practices that are conducive for regional inclusiveness in the Digital Economy. The variations among regions are diverse and significant with different regions operating with a number of disparate dimensions. These result in each region having independent economic development needs, capabilities and opportunities. It further enables us to look at the regions based on their specific requirements and facilitate them within the framework of digital inclusivity.

Lighting Digital District Development Drive

Startups Ecosystems	Digital Education	ICT Workforce & Technology Diffusion	Increase Government Efficiency & Citizen Empowerment
• Startups • Freelancers • TECH- related SMEs • E-Commerce Startups • Spiralation Registration • YCS Registration	• Digital Education Policy • Infrastructure Schools facilities • A/L Students - IT stream • Content (e- Thaksalawa) • Vocational Training Centers • Government Universities • Private Sector Universities • Demand & Supply • Awareness	• IT Companies • Digital Literacy & Adoption • ICT Workforce (Demand & Supply) • Skills & Knowledge • Infrastructure • Unemployment • Innovations & research • Tech Dissemination • Productivity	• Government Officers Capacity Building • Digitally Capable Government • Government sector IT Literacy • Gov Under utilize workforce • Digital Literacy • Digital adoption & Inclusion
Tech Industry Development			
• AIMs Program • LEAPs • e-Swabimani • Regional Tech Summit • Tech Trade Insights			

Table 1

Inclusive regional development initiative has been introduced with the following key areas.

Startup Ecosystem Development:
Continually nurturing the startup ecosystem targeting inclusive regional development, stimulate economic growth, create jobs, and foster innovation. It can have a significant impact on the economic and social growth of a region.

Technology Industry Development:
Developing the tech industry for inclusive regional development involves creating an environment that fosters innovation, economic growth, and equal access to opportunities.

Education and Skills Development:
Investing in education and skill development to empower citizens with the tools and knowledge they need to participate fully in the regional economy.

Technology Diffusion: Technology diffusion is a critical process for achieving inclusive regional digital development. It involves the spread and adoption of digital technologies across various sectors and communities within a region, ensuring that the benefits of technology are accessible to all.

Citizen Empowerment:
Citizen empowerment is a crucial aspect of inclusive regional digital development. It involves giving residents the tools, knowledge, and agency to actively participate in the digital transformation of their communities.

Transparency and accountability in our pursuit of inclusive regional development. Therefore, DDTCs have been tasked to track the progress of the regional development initiatives with clearly stablished indicators. ICTA will regularly assess the impact of our initiatives and adjust our strategies as needed to ensure that we stay on course toward a more inclusive future.

3. District Digital Readiness Index (DDRI)

Introducing the District Digital Readiness Index (DDRI) is a crucial step towards understanding and enhancing the digital landscape within districts of Sri Lanka. This index **aims to provide a comprehensive assessment of digital readiness, taking into account various factors that influence a district's ability to harness digital technologies to thrive in the Digital Economy**. Digital readiness refers to a district's preparedness and capacity to effectively utilize digital technologies and infrastructure to advance its socio-economic objectives. It encompasses a wide range of factors, including access to technology and digital devices, digital adoption, human capital the quality of digital infrastructure, the presence of supportive policies, and the overall digital ecosystem within the district.

While national or provincial-level indices offer valuable insights into a country's overall digital development, they often mask significant variations that exist at the sub-regional level. Different districts within a region or country may have unique challenges and opportunities related to digital readiness. Therefore, a district-level index is essential to identify disparities and tailor interventions accordingly. This index is not a static measurement but rather a tool for ongoing assessment and improvement. It enables districts to track progress over time, identify areas that require attention, and celebrate successes. The insights derived from this index have far-reaching policy implications. They inform decision-makers about where to allocate resources, design targeted interventions, and develop strategies to bridge digital divides. Additionally, the index fosters collaboration among local authorities, businesses, non-profit organizations, and communities to drive digital development.

Ultimately, DDRI is about empowering communities and districts to fully participate in the digital economy, access digital services, and improve their quality of life through technology. It acknowledges that digital inclusion is essential for equitable development and that each district's unique context must be considered in crafting effective solutions. It provides valuable insights for understanding, measuring, and enhancing a district's digital preparedness. It recognizes the importance of localized efforts in achieving broader digital inclusion and economic growth.

3.1 Importance of DDRI

The importance of the DDRI cannot be overstated. As our society and economy become increasingly intertwined with digital technologies, gauging our readiness becomes pivotal for multiple reasons:

Informed Decision-Making: The index provides policymakers, government officials, and business leaders with valuable insights into the strengths and weaknesses of our region's digital ecosystem. This informed perspective empowers stakeholders to make data-driven decisions that foster growth and inclusivity.

Benchmarking and Progress Tracking: By assessing the current digital state and periodically updating the index, we gain a benchmark to track the progress over time. This enables us to measure the impact of digital initiatives, ensuring they align with our districts' strategic goals.

Resource Allocation: With limited resources available, the index aids in identifying priority areas for investment. It guides resource allocation toward critical digital infrastructure, skills development, and innovation hubs that drive economic development.

Global Competitiveness: In a globalized world, regions that excel in digital readiness gain a competitive edge in attracting investments, talent, and businesses. The index helps position districts on the global stage as an attractive destination for innovation and growth.

Economic Prosperity: A digitally ready region is poised to stimulate economic growth, create jobs, and increase opportunities for businesses of all sizes.

Inclusive Development: Digital readiness ensures that the benefits of technology are accessible to all, reducing disparities and fostering inclusivity.

Innovation Ecosystem: By promoting digital literacy and innovation, the index paves the way for a thriving ecosystem of startups and entrepreneurs.

Efficient Governance: Improved e-governance capabilities enhance public services, increase transparency, and promote citizen engagement.

3.2 DDRI formulation approach

Formulating the District Digital Readiness Index involved a systematic approach that considers various indicators and data sources to assess the level of digital readiness within individual districts. Formulation approach is given below.

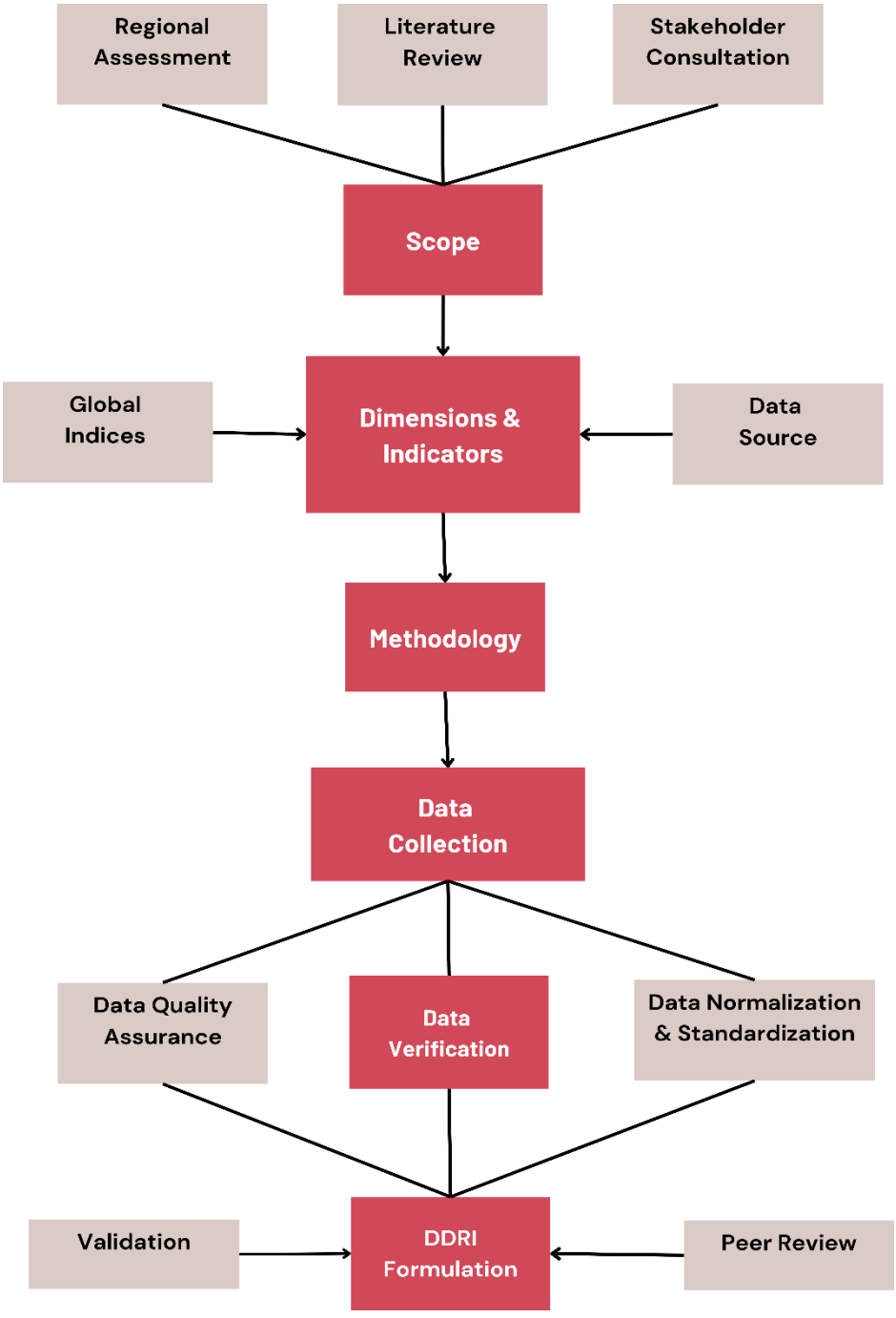


Figure 1: DDRI Formulation Approach

1. Define the Purpose and Scope:

Extensive consultation sessions conducted with the Department of Census and Statistics and ICTA to clearly define the objectives of the District Digital Readiness Index and for determining the specific goals and intended uses of the index, such as policy planning, resource allocation, or monitoring progress.

2. Stakeholder Consultation

To ensure that the index accurately reflects the district's digital landscape and addresses the needs and priorities of the local community, a diverse group of stakeholders have been consulted in multiple rounds of discussions. Stakeholders in Government Authorities, Local government, Academic and Research Institutions, Experts in data analysis, digital technology, and local economic development, Civil Society Organizations, Community Leaders, Digital Service Providers, Representatives from IT industry associations, telecom companies, internet service providers, and technology companies operating in the regions have been included in consultation sessions. Various methods such as workshops, focus group discussions meetings used as mechanisms to create interactions with different levels of stakeholders to share their expertise and insights. Feedback and input received from stakeholders have been carefully analyzed to define common themes, concerns, and suggestions for improving the DDRI. Stakeholders have validated the index and its methodology and accurate represent of the district's digital readiness before publishing.

3. Literature Review

A comprehensive literature review has been conducted for District Digital Readiness Index (DDRI). Literature review includes an examination of existing global indices such as Network Readiness Index (NRI), Cluster Readiness Index (CRI) formulated by ICTA in 2022, Digital Readiness Index (DRI) developed by CISCO other research, studies, reports, and publications related to the concept of digital readiness in the global level. Existing frameworks, models, variables and indicators used for assessing digital readiness in various contexts have been evaluated and adopted in the local context.

4. Identifying Dimensions and Indicators:

Identifying the right dimensions and indicators for a District Digital Readiness Index (DDRI) is crucial for accurately assessing the digital readiness of districts. A pool of dimensions and indicators commonly used in digital readiness assessments have been listed after careful examining of the literature. Significance, relevance and data availability have been taken in to consideration when selecting variables for the DDRI. These dimensions and indicators selected for DDRI have covered a wide range of aspects that collectively represent the digital landscape.

5. Methodology for DDRI Formulation:

Review literature on methodologies for collecting and analyzing data for digital readiness assessments has been conducted. Extensive consultation with the department of Census and Statistics has been conducted on selecting a suitable methodology for DDRI.

6. Data Collection:

Collecting data for a District Digital Readiness Index (DDRI) involves gathering information on various indicators that assess a district's digital readiness across different dimensions. Secondary sources of data used for each indicator has been identified and such organizations onboarded with

briefing sessions. Data from government agencies, academia, private sector have been used. Data availability assessment, accuracy, continuation and relevance of data for each indicator have been thoroughly analyzed. Data has been gathered from published sources as well as relevant organizations with necessary permissions and rights to access and use the data adhering to the data privacy regulations.

7. Data Quality Assurance:

Quality assurance measures such as cross-checking with multiple sources, conducting data accuracy checks, and verifying data against established standards and benchmarks have been implemented to ensure data accuracy and reliability. Secure data storage and management system has been in place throughout the process to store, organize, and safeguard collected data complying with data protection regulations and ethical standards.

8. Data Normalization and Standardization:

Collected data have been normalized and standardized using appropriate methodologies to ensure comparability across districts. This step involved transforming raw data into a common scale, often ranging from 0 to 5, where higher values indicate higher readiness.

9. DDRI Formulation

Department of Census and Statistics has used appropriate scientific methodology and formulas for DDRI formulation after collecting the data. DCS has performed data analysis to calculate the scores and rankings for each indicator and dimension. Aggregate the results to compute the overall DDRI score for each district. More details on DDRI formulation has been included in the methodology chapter.

10. Validation and Peer Review:

Stakeholder validating session has been conducted to validate the variables, indicators, data sources, methodology. Intensive peer review and expert consultation sessions conducted to ensure accuracy and robustness of the index.

11. Data Visualization and Interpretation:

Stakeholder validating session has been conducted to validate the variables, indicators, data sources, methodology. Intensive peer review and expert consultation sessions conducted to ensure accuracy and robustness of the index.

12. Continuous Monitoring and Updates:

Mechanisms have been established for continuous monitoring and annual updates of the District Digital Readiness Index to track changes over time and assess the impact of interventions.

13. Policy and Action Planning:

Relevant policy making organizations have been onboarded and included in the DDRI consultative committee for adoption, planning, resource allocation, and action plans aimed at improving digital readiness within districts. Tailored interventions will be made to address specific limitations identified in the index.

14. Public Awareness and Engagement:

Launch and public awareness has been integrated to the project to bring the awareness about the index to local authorities, businesses, non-profit organizations, and communities encouraging collaboration and engagement to drive digital development in districts.

3.3 Composition of District Digital Readiness Index

DDRI has been grounded in data collected from various sources, including government agencies, private sector data, and research institutions. This data-driven approach ensures objectivity and reliability in assessing digital readiness. The index considers a diverse set of indicators to assess digital readiness comprehensively. The indicators and variables used for DDRI are given below.

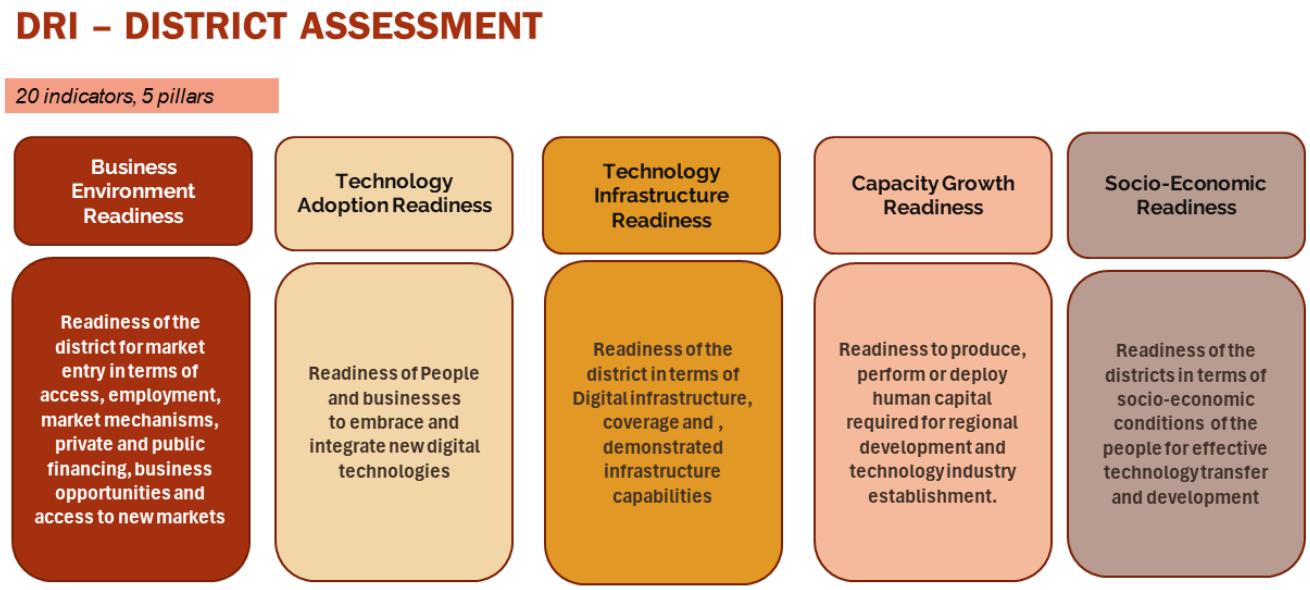


Figure 2

Sub Index 1 – Business Environment Readiness (BER)

Business Environment Readiness (BER) refers to the state of preparedness and conditions within a region or district that affect the ability of businesses to thrive, grow, and adapt in the digital age. A conducive business environment readiness is essential for economic development, entrepreneurship, and attracting investments. Incorporating a Business Environment Readiness sub-index into the District Digital Readiness Index adds a critical dimension to the assessment of digital readiness within a district. Here's an outline of how this sub-index is structured:

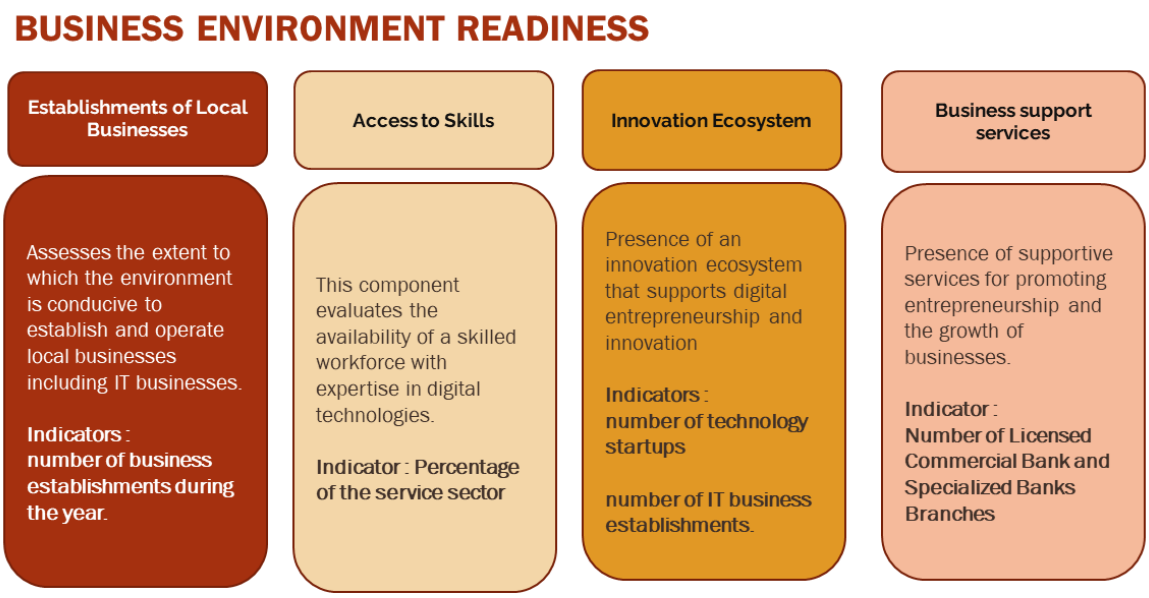


Figure 3

Sub Index 2 – Digital Adoption Readiness (DAR)

Digital adoption readiness refers to an organization's or a community's preparedness and ability to effectively adopt and integrate digital technologies into their operations, processes, and daily activities. It encompasses a range of factors and capabilities that enable successful digital transformation. Incorporating "Digital Adoption Readiness" as a sub-index of a District Digital Readiness Index (DDRI) is a good approach to assess and measure a district's preparedness and ability to adopt and utilize digital technologies effectively. This sub-index can provide valuable insights into how well the district is positioned to embrace digital transformation. Here are key components considered to evaluate the digital adoption readiness:

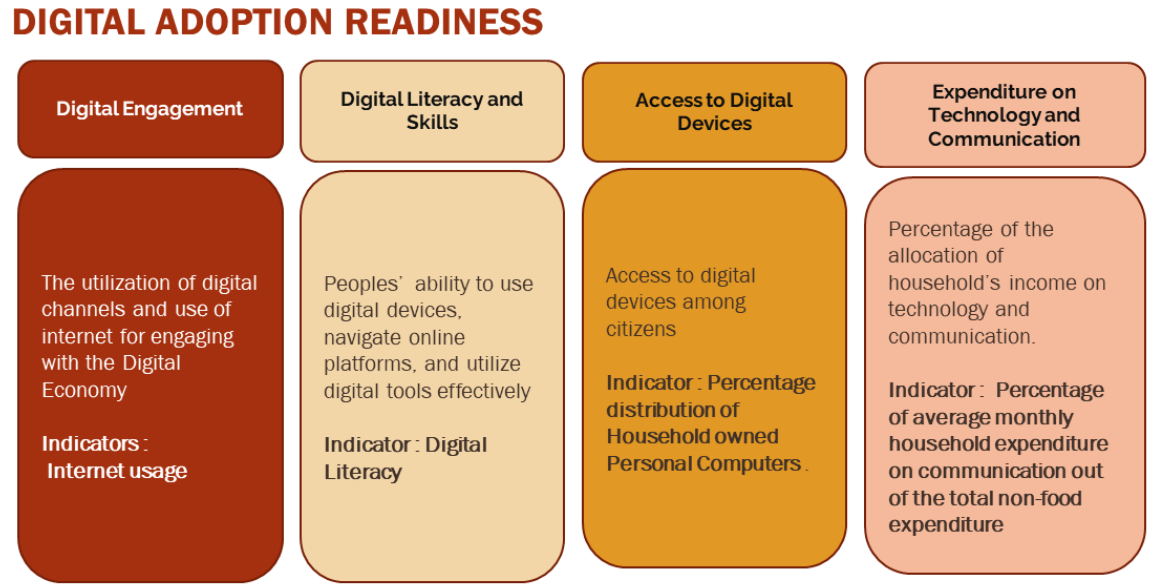


Figure 4

Sub Index 3- Technology Infrastructure Readiness (TIR)

Technology Infrastructure Readiness refers to the state of preparedness and capability of districts to support and leverage advanced technology infrastructure for various purposes, including economic development, innovation, and improved quality of life. This readiness encompasses a range of factors and considerations related to technology infrastructure. Incorporating "Technology Infrastructure Readiness" as a sub-index of the District Digital Readiness Index (DDRI) is a valuable approach to assess and measure the district's technological capabilities and its readiness to embrace digital technologies. This sub-index focuses specifically on the technology infrastructure components that contribute to the district's overall digital readiness. Here are key components associated with technology infrastructure readiness evaluation

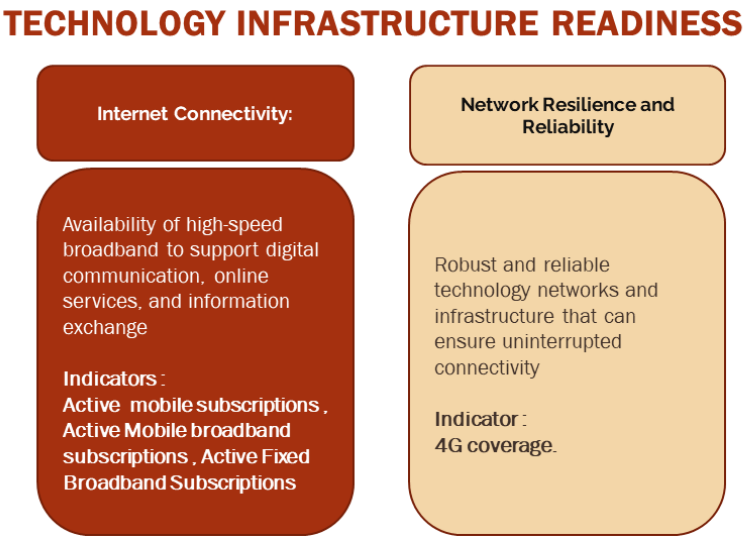


Figure 5

Sub Index 4- Capacity Growth Readiness (CGR)

Capacity Growth Readiness (CGR) refers to a district's preparedness and capability to expand and enhance its capacity in various aspects to support growth and development. Capacity growth readiness is crucial for organizations and regions aiming to accommodate increased demand, seize new opportunities, and achieve sustainable growth. Incorporating Capacity Growth Readiness as a sub-index of the DDRI provides valuable insights into how well a district is prepared to expand its capacity and support growth in the digital era. This sub-index focusses on specific factors and indicators that assess the district's readiness for capacity expansion. Here's how sub index structures.

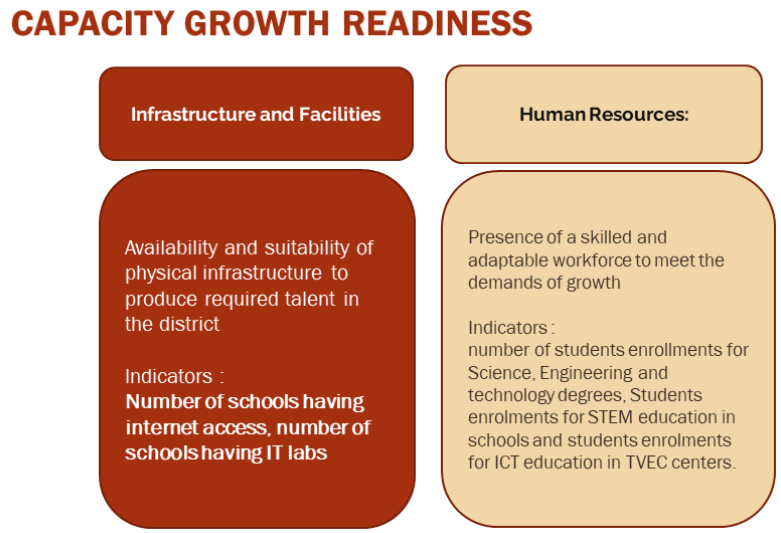


Figure 6

Sub Index 5 – Socioeconomic Readiness (SER)

Socioeconomic Readiness (SER) refers to the preparedness within a district to address and manage socioeconomic challenges and opportunities effectively. It encompasses a range of factors and considerations related to the economic and social well-being of the community. Assessing socioeconomic readiness is crucial for understanding the status of the district on economic development, social equity, and overall prosperity. Incorporating "Socioeconomic Readiness" as a sub-index of the District Digital Readiness Index (DDRI) can provide a comprehensive assessment of a district's preparedness and capacity to address socioeconomic challenges and opportunities in the context of digital transformation. This sub-index can focus on specific indicators and dimensions related to socioeconomic factors. Here's how we have structured the Socioeconomic Readiness sub-index:

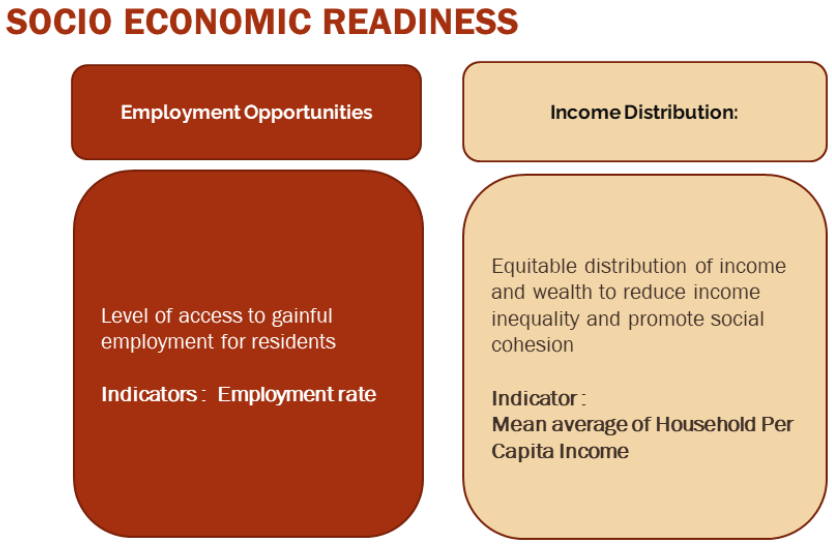


Figure 7

4. Methodology

DDRI methodology is a systematic and data-driven approach to evaluating the digital readiness of districts, providing a valuable foundation for regional decision-makers to promote digital inclusion, economic growth, and technological advancement within their respective areas.
The DDRI methodology involves the collection of a wide range of data related to digital infrastructure, education, workforce skills, business ecosystems, and more. Data sources include government reports, surveys, and publicly available data. Indicators that best represent the digital readiness of a district are carefully chosen. These indicators are grouped into relevant categories, such as Infrastructure, Digital adoption, capacity growth and business ecosystem etc.
The DDRI methodology enables districts to be compared against each other, allowing for benchmarking and identification of best practices and areas for improvement. The results of the assessment are used to generate specific recommendations for each district. These recommendations serve as actionable insights for stakeholders to enhance digital readiness.

Given data set as follows:

No	Dimension	Variable	Source of Data
1	Technology Industry Environment	Established Tech startup	Startup SL
2		Established Tech Companies	ICTA Survey
3	General Business Environment	Established Businesses	District Secretariat, RoC
4		Commercial Banks	CBSL
5	Digital Adoption of People	Access to devices	DCS
6		Access to internet	TRC/ LF
7		Ability to use a computer	DCS
8		Ability to perform digital activity	DCS
9		Use of Telecommunication Services	TRC
10		Use of eGov services	ICTA
11		Virtual and Social Networking	META
12	Digital Adoption of Businesses	Business Domains Registrations	LK domain registry
13		Facebook Business Pages	META
14		Online Business Registrations	District Secretariat and Company Registrar
15	Internet Coverage and Access	Internet speed	TRC
16		4G coverage (Demographical)	TRC
17		4G coverage (Geographical)	TRC
18	Mobile and Broadband Penetration and usage	Mobile penetration	TRC
19		Broadband penetration	TRC
20		Active Broadband Subscriptions	TRC
	Dimension	Variable	Source of Data
21	Human Resource Potential	Availability of Skilled talent pool	UGC, MoHE
22		Availability of future talent pool	MoE
23		ICT Workforce	
24		Availability of future talent pool	MoE
25		Availability of convertible talent pool	UGC
26		Availability of secondary layer talent pool	TVEC
27	Education Infrastructure	IT Labs in Schools	MoE

28		Internet Access in Schools	MoE
29		Schools Teaching ICT	MoE
30	Prosperity and well-being of the citizens	Level of prosperity and well-being	CBSL
31		Ability of spending of the citizens	CBSL
32	Employment Status	Employment	CBSL
33		Female contribution to GDP	CBSL

Table 2 : DDRI Methodology Summary

Criteria used for selecting variables:

5. Identifying data sources – What would be the reliable data sources i.e from Census, surveys or Administrative records

6. Identifying availability of data frequencies – i.e the data will be available either every year, every quarter, every month, or once every three years, and so on.

Now variables reduced to 24 out of 34

Criteria used for selecting appropriate indicator

The choice between using counts or percentages as indicators depends on the context, analysis goals, and the nature of the data. (Nature of the Data: Consider the type of data. If you are dealing with discrete and individual entities, such as the number of people, houses, or items, counts might be more suitable. On the other hand, if you are dealing with proportions or ratios, percentages could provide a clearer representation).

Furthermore, the size of the population or sample will also influence the choice. Percentages are often preferred when dealing with proportions in large datasets, as they offer a normalized view. Counts, on the other hand, might be more informative when dealing with smaller groups or specific subsets. For example, a difference of 10 people in a small village might be more significant than a difference of 10 people in a large city. Percentages can help mitigate this effect, as they consider the relative size of the group in relation to the whole population.

In selecting the indicator of rate, ratio or percentage; we consider whether the result is meaningful with its denominator and the numerator and its domain.
When comparing the districts' estimates, the populations of the districts are different therefore population adjustment is needed. District values, which were in the form of counts were adjusted by dividing estimated mid-year population of the District.
In the remaining list of variables/Indicators we have 24 variables with different types of units of measurements (percentages, number/count, and ratio). In order to eliminate the effect of usage of different types of unit of measurements, $\frac{x}{\bar{x}}$ technique has been used to do the normalization i.e each individual data points were divided by its mean. Because in this study the main component is the variances.

The Pearson's Correlation analysis was used to test the correlation between each variable.The factor analysis was done for the new set of variables using the covariance approach to extract the variables. Factor Analysis is a mathematical procedure used to transform a set of potentially correlated variables into a smaller set of linearly uncorrelated variables. Its primary objective is to capture and express the

essential information contained in the original data as a set of new variables. After combining the highly correlated variables in to one variable, 8 variables were selected and named as pooled variables.

Pooled variable	Combined variables
IT_Busns_Reg_Busns	IT_Businesses_PP / Businesses_PP
Broadband_PP	Startups_PP Service_Employment Device Internet_PP 4G Mobile_PP No_Name_PP Income
Access	Labs
Banks_PP	-
Digital_Literacy	-
Communication	-
IT_Pool	Skilled_Pool + Future_Pool + Secondary_Pool
Employment	-

Table 3: Correlation and Factor Analysis Results for Variable Reduction

However, considering the low standard deviation (SD) values of the selected eight variables, three of them were removed as they indicated more homogeneous behavior among the district. Following variables are the recommended to do Factor Analysis.

Variable	Description	Unit
IT_Busns_Reg_Busns_T	Proportion of IT Businesses to Total Businesses	%
Digital_Literacy_T	Digital_Literacy Rate	%
Broadband_PP_T	Broadband penetration per thousand population	No. of active subscriptions at least used 1mb within a month Per 1000 population
IT_Pool_T	Summation of	Count
	No of Students enrollments for Computer Science, Engineering and Science degrees in states and non-states Universities	
	Students enrolling for maths, bio and technology streams in A/L	
	TVET Sector Student Enrollments and Certifications in the sector of ICT (NVQ)	
Access_T	Number of schools having internet access	Count

Table 4: Selected Variables for Factor Analysis after Homogeneity Assessment

From the factor analysis two factors indicated the 89 percent variability out of the variability given by 5 variables. Using the weighted average of the selected two factor scores, composite index was calculated. Eigen values of each factor were used as the weights (Silva, 2000). Following formula was used for the calculation.

$$(CI)j = \sum_{i=1}^{k} viFij$$

Where, i = *1, 2, ...j k; k* is the number of common factors, *m* is the number of variables *(k<m)*, *j = 1. 2,...,n; n is* the number of districts. *Fij* is the factor score of the i^{th} factor for j^{th} individual districts and *vi* is the variance proportion explained by the factor in the model.

i.e. $vi = \frac{\lambda i}{\sum_i^k \lambda i}$, Where, *λi is the* eigen value

Ranking the districts

Rank according to the ascending order of average pooled variables by district

Further request

1. In order to identify the contribution of each variables (all 19 variable in each dimensions) within the district raw percentages of population adjusted and standardized variables have been calculated as follows. Least contribution of each variable within the district is highlighted in yellow

RANK	District	Business Environment Readiness				Digital Adoption Readiness				Technology Infrastructure Readiness				Capacity Growth Readiness					Socio Economic Readiness		Total
		Startups_PP	Service_Employment	IT_Busns/Reg_Busns	Banks_PP	Device	Digital_Literacy	Communication	Internet_PP	4G	Mobile_PP	Active_Mobile_Pp	Broadband_PP	Skilled_Pool	Future_Pool	Secondary_Pool	Labs	Access	Income	Employment	
1	Colombo	21.54	3.72	3.31	3.83	5.15	2.93	2.22	5.12	4.56	3.19	3.58	7.01	8.56	6.19	5.99	3.03	3.65	4.25	2.18	100.00
2	Gampaha	4.44	4.62	5.85	2.78	5.80	3.86	3.32	4.24	7.52	3.97	4.26	6.82	8.31	6.81	5.77	5.42	7.75	5.11	3.36	100.00
3	Kurunegala	1.17	5.74	5.46	3.60	7.20	5.33	4.90	4.34	7.27	4.84	4.52	6.06	6.67	6.22	4.35	5.59	6.20	5.84	4.71	100.00
4	Kandy	2.85	5.39	5.94	3.94	6.23	4.33	3.80	4.32	5.68	3.96	3.93	6.26	6.77	7.65	5.46	6.65	8.19	4.64	4.04	100.00
5	Galle	2.37	6.58	2.56	5.85	5.64	6.92	5.66	6.44	6.11	6.54	6.31	8.42	2.73	3.40	3.22	4.48	5.10	5.38	6.30	100.00
6	Kaluthara	3.39	3.66	5.50	4.66	3.31	5.79	6.34	6.47	6.02	6.12	6.39	8.28	3.40	4.41	4.72	5.77	4.94	4.75	6.07	100.00
7	Matara	0.66	4.65	6.56	4.71	5.44	4.59	3.89	4.34	7.24	4.62	4.32	5.69	7.46	6.85	9.10	4.92	5.49	5.04	4.45	100.00
8	Ratnapura	2.78	5.01	12.05	3.76	5.06	4.82	4.05	3.55	8.55	4.82	4.44	4.24	7.03	5.88	4.88	4.56	4.70	4.99	4.83	100.00
9	Jaffna	8.95	5.30	6.14	7.40	4.46	5.57	3.68	5.46	4.32	4.40	5.22	5.40	4.11	4.95	5.30	4.99	4.04	5.32	4.98	100.00
10	Kegalle	1.07	6.10	6.51	4.41	4.95	5.31	8.06	4.01	7.73	4.93	4.82	5.06	4.93	3.74	4.82	5.90	8.28	4.10	5.26	100.00
11	Puttalam	3.18	5.13	11.27	6.78	6.49	9.22	6.31	6.87	2.25	7.33	6.98	6.70	1.17	0.86	1.77	1.88	2.86	5.34	7.62	100.00
12	Badulla	4.70	8.45	5.33	5.78	9.81	8.48	6.39	4.57	3.40	6.65	6.21	5.81	1.54	1.19	2.90	2.24	2.48	7.19	6.90	100.00
13	Anuradhapura	1.62	6.27	5.50	7.93	4.25	7.31	12.44	6.90	3.17	8.56	7.81	5.46	1.26	0.77	1.12	2.28	2.31	6.35	8.70	100.00
14	Hambantota	0.71	6.36	7.30	8.29	3.59	7.08	12.81	6.23	5.41	7.82	6.89	5.09	1.33	1.28	2.51	1.72	2.44	5.16	7.96	100.00
15	Matale	2.10	5.94	8.85	5.33	3.46	5.55	6.87	5.44	2.99	6.25	6.01	6.80	3.19	3.88	7.69	4.65	4.71	4.34	5.95	100.00
16	Ampara	1.92	7.18	5.72	6.08	5.29	6.33	6.27	4.84	2.22	5.96	5.87	3.21	4.12	5.29	7.69	6.72	4.05	5.32	5.92	100.00
17	Batticaloa	2.21	7.76	5.73	6.98	2.62	6.49	6.81	6.39	3.83	6.83	7.24	4.01	2.66	2.82	6.47	4.42	4.32	5.03	7.39	100.00
18	Nuwara eliya	0.00	4.44	0.55	3.21	6.33	4.39	4.05	2.20	6.88	2.77	2.40	2.14	9.66	10.64	9.73	9.34	11.15	5.32	4.81	100.00
19	Trincomalee	0.00	5.35	10.89	4.87	5.36	5.75	4.74	6.02	5.19	5.76	5.88	3.20	3.93	4.16	5.19	4.72	5.98	7.38	5.63	100.00
20	Polonnaruwa	0.00	5.22	1.03	6.22	6.76	5.73	5.29	5.46	2.90	6.49	5.86	4.14	5.53	7.04	5.10	9.45	5.08	6.49	6.22	100.00
21	Vavuniya	6.05	5.00	7.95	6.45	7.18	4.83	5.50	7.86	3.02	6.56	6.88	5.82	2.40	2.91	1.65	3.43	3.67	6.36	6.48	100.00
22	Monaragala	2.32	4.42	6.11	6.19	4.05	4.29	5.30	4.35	5.59	6.06	5.29	2.71	5.60	7.39	2.88	8.97	5.36	6.69	6.42	100.00
23	Kilinochchi	19.87	4.45	0.00	6.24	2.36	5.24	5.15	7.58	2.50	5.45	6.52	5.13	2.68	3.53	4.18	4.61	2.81	5.44	6.26	100.00
24	Mannar	2.84	4.13	0.00	7.09	5.33	5.12	5.67	5.90	5.51	5.75	6.01	2.29	6.39	7.47	7.85	7.27	5.70	4.33	5.37	100.00
25	Mulativu	9.16	5.50	0.00	7.32	4.09	4.91	5.25	6.93	6.38	5.12	5.75	2.96	4.70	5.78	4.13	7.42	5.07	4.60	4.95	100.00

Table 5

2. In order to identify the contribution of each variables (all 19 variable in each dimensions) between districts column percentages of population adjusted and standardized variables have been calculated as follows. Least contribution of each variables are highlighted in yellow

RANK	District	Business Environment Readiness				Digital Adoption Readiness				Technology Infrastructure Readiness				Capacity Growth Readiness					Socio Economic Readiness	
		Startups_PP	Service_Employment	IT_Busns/Reg_Busns	Banks_PP	Device	Digital_Literacy	Communication	Internet_PP	4G	Mobile_PP	Active_Mobile_PP	Broadband_PP	Skilled_Pool	Future_Pool	Secondary_Pool	Labs	Access	Income	Employment
1	Colombo	39.76	6.86	6.11	7.06	9.50	5.41	4.10	9.45	8.42	5.89	6.60	12.94	15.80	11.43	11.05	5.59	6.75	7.85	4.03
2	Gampaha	5.30	5.52	6.99	3.32	6.93	4.61	3.96	5.07	8.98	4.74	5.08	8.15	9.92	8.13	6.89	6.47	9.25	6.10	4.01
3	Kurunegala	0.98	4.80	4.57	3.01	6.02	4.45	4.10	3.63	6.08	4.05	3.78	5.07	5.58	5.20	3.64	4.67	5.18	4.89	3.94
4	Kandy	2.77	5.24	5.76	3.82	6.05	4.20	3.69	4.19	5.52	3.84	3.81	6.08	6.57	7.42	5.30	6.45	7.95	4.50	3.92
5	Galle	1.49	4.13	1.61	3.68	3.54	4.34	3.55	4.04	3.84	4.11	3.96	5.29	1.71	2.14	2.02	2.82	3.20	3.38	3.95
6	Kaluthara	2.27	2.44	3.67	3.11	2.21	3.87	4.23	4.32	4.02	4.09	4.27	5.53	2.27	2.94	3.15	3.85	3.30	3.17	4.05
7	Matara	0.58	4.09	5.77	4.14	4.78	4.03	3.42	3.81	6.36	4.07	3.80	5.00	6.56	6.02	8.00	4.32	4.82	4.43	3.92
8	Ratnapura	2.25	4.06	9.76	3.04	4.10	3.90	3.28	2.87	6.92	3.91	3.59	3.44	5.69	4.76	3.95	3.70	3.81	4.04	3.91
9	Jaffna	6.98	4.13	4.79	5.77	3.48	4.34	2.87	4.26	3.37	3.43	4.07	4.21	3.21	3.86	4.14	3.89	3.15	4.15	3.89
10	Kegalle	0.81	4.65	4.96	3.37	3.78	4.05	6.15	3.06	5.89	3.75	3.68	3.86	3.76	2.85	3.67	4.50	6.31	3.12	4.01
11	Puttalam	1.72	2.77	6.10	3.67	3.51	4.99	3.42	3.72	1.22	3.97	3.78	3.63	0.63	0.47	0.96	1.02	1.55	2.89	4.12
12	Badulla	2.71	4.88	3.08	3.33	5.66	4.90	3.69	2.64	1.96	3.84	3.58	3.35	0.89	0.69	1.67	1.29	1.43	4.15	3.98
13	Anuradhapura	0.76	2.96	2.60	3.74	2.01	3.45	5.87	3.26	1.50	4.04	3.69	2.58	0.59	0.36	0.53	1.08	1.09	3.00	4.11
14	Hambantota	0.36	3.19	3.66	4.15	1.80	3.55	6.42	3.12	2.71	3.92	3.45	2.55	0.67	0.64	1.26	0.86	1.22	2.59	3.99
15	Matale	1.38	3.90	5.81	3.50	2.27	3.64	4.51	3.57	1.96	4.10	3.95	4.46	2.10	2.54	5.05	3.05	3.09	2.85	3.91
16	Ampara	1.29	4.85	3.86	4.11	3.57	4.27	4.23	3.27	1.50	4.03	3.96	2.17	2.78	3.57	5.19	4.54	2.73	3.60	4.00
17	Batticaloa	1.24	4.36	3.22	3.92	1.47	3.65	3.83	3.59	2.15	3.84	4.07	2.25	1.49	1.59	3.64	2.48	2.43	2.83	4.15
18	Nuwara eliya	0.00	3.75	0.46	2.71	5.34	3.70	3.42	1.85	5.80	2.34	2.03	1.81	8.15	8.98	8.21	7.88	9.40	4.48	4.05
19	Trincomalee	0.00	3.86	7.86	3.51	3.86	4.15	3.42	4.34	3.74	4.15	4.24	2.31	2.84	3.00	3.74	3.40	4.32	5.32	4.06
20	Polonnaruwa	0.00	3.37	0.66	4.02	4.37	3.70	3.42	3.52	1.87	4.19	3.78	2.67	3.57	4.54	3.29	6.10	3.28	4.19	4.02
21	Vavuniya	3.75	3.10	4.93	4.00	4.45	3.00	3.42	4.88	1.87	4.07	4.27	3.61	1.49	1.80	1.02	2.13	2.28	3.95	4.02
22	Monaragala	1.44	2.74	3.78	3.83	2.51	2.66	3.28	2.69	3.46	3.75	3.27	1.68	3.47	4.57	1.78	5.55	3.32	4.14	3.97
23	Kilinochchi	12.65	2.83	0.00	3.97	1.50	3.34	3.28	4.83	1.59	3.47	4.15	3.27	1.70	2.25	2.66	2.93	1.79	3.46	3.98
24	Mannar	2.12	3.09	0.00	5.30	3.98	3.83	4.23	4.41	4.12	4.30	4.49	1.71	4.78	5.59	5.86	5.44	4.26	3.23	4.01
25	Mulativu	7.39	4.43	0.00	5.91	3.30	3.96	4.23	5.59	5.14	4.13	4.64	2.39	3.79	4.67	3.33	5.98	4.09	3.71	3.99
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6

5. Data Analysis and Interpretation

Overall Ranking

The District Digital Readiness Index (DDRI) overall ranking provides a snapshot of the district's preparedness to embrace the digital age. With a digital readiness score of 3.336, Colombo District is making commendable strides in its digital transformation journey.

The DDRI underscores the progress made by Mulativu District while identifying key areas that require strategic focus for further advancement in the digital era. By addressing these areas, Mulativu, Mannar and Kilinochchi districts which have scored less than 0.2 can continue its journey toward becoming a digitally inclusive and innovative district, better equipped to meet the evolving needs of its residents and businesses.

RANK	District	DDRI
1	Colombo	3.3361
2	Gampaha	2.5186
3	Kurunegala	2.2557
4	Kandy	1.9713
5	Galle	1.5532
6	Kalutara	1.3721
7	Matara	1.1469
8	Ratnapura	1.1453
9	Jaffna	1.1245
10	Kegalle	0.9833
11	Puttalam	0.8569
12	Badulla	0.7523
13	Anuradhapura	0.7315
14	Hambantota	0.6998
15	Matale	0.6891
16	Ampara	0.6275
17	Batticaloa	0.5690
18	Nuwara Eliya	0.4942
19	Trincomalee	0.3750
20	Polonnaruwa	0.2941
21	Vavuniya	0.2776
22	Monaragala	0.2420
23	Kilinochchi	0.1687
24	Mannar	0.0133
25	Mulativu	0.0000

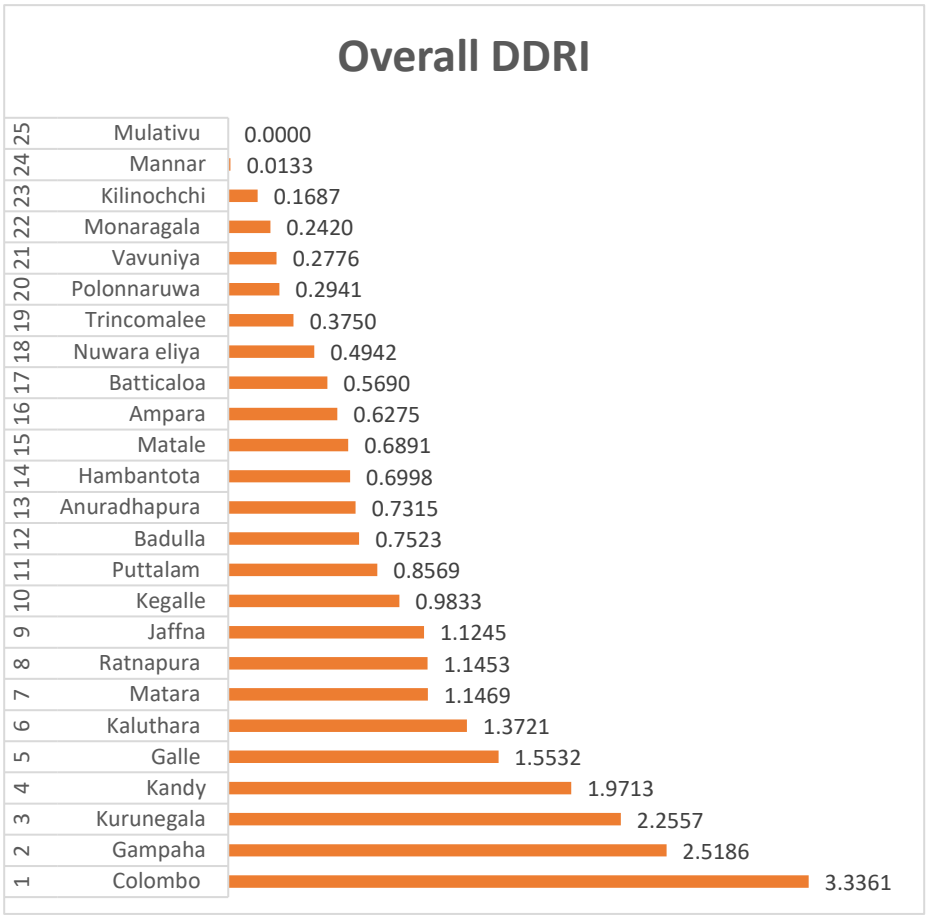


Figure 8

Top ten performing districts

This year, Colombo district remains the top of the DDRI overall ranking while Gampaha district rises to second place. Kurunegala enters to the third place while Kandy rises in the forth place. Galle, Kalutara, Matara, Ratnapura, Jaffna and Kegalle districts also remain in the top ten performing districts keeping the overall DDRI value above 0.9.

It is noteworthy that the top 10 performing districts do well across most of the sub -indices and dimensions comprising the DDRI. A detailed look at the top ten performers can demonstrate the comparative strengths and weaknesses of each district's performance regarding digital readiness

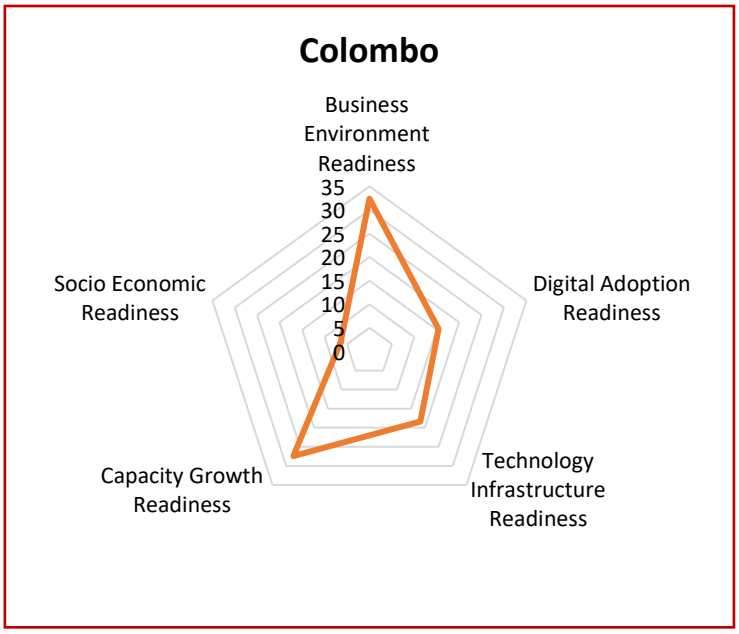
District Snapshots

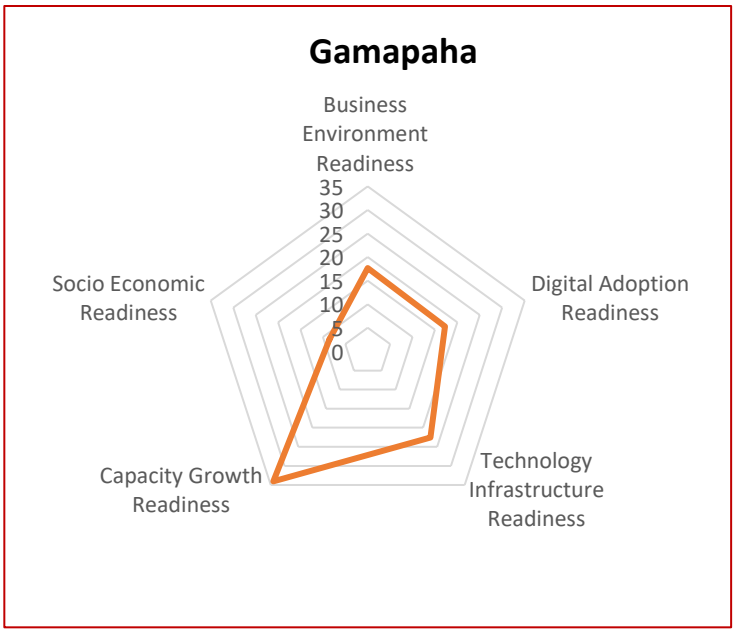
A deep analysis for each districts digital readiness has been carried out based on five main indices. It involves comprehensive examination of various aspects of the district's social, economic, business environmental, digital adoption, technology infrastructure and capacity growth. The goal of such an analysis is to provide a detailed understanding of the district's strengths, weaknesses, opportunities, and challenges.

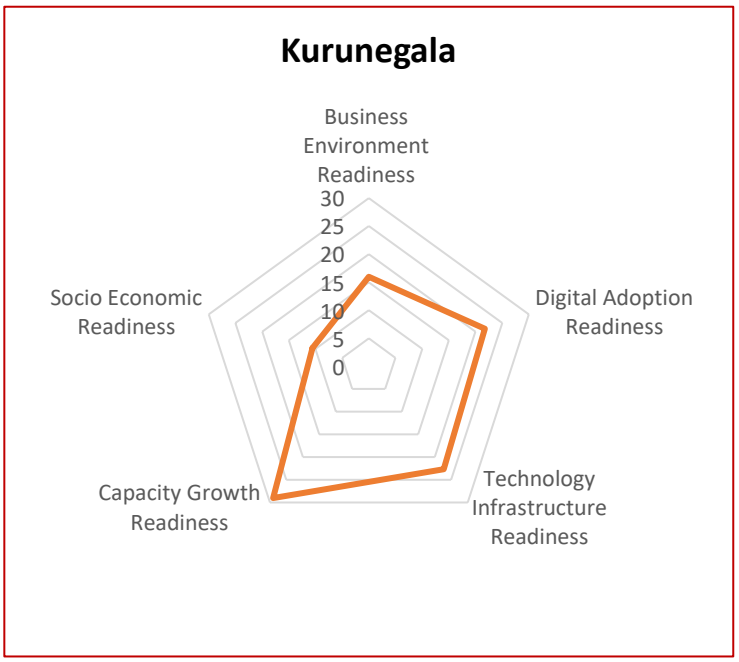
RANK	District	Business Environment Readiness	Digital Adoption Readiness	Technology Infrastructure Readiness	Capacity Growth Readiness	Socio Economic Readiness	Total
1	Colombo	32.39	15.42	18.34	27.42	6.43	100.00
2	Gampaha	17.69	17.23	22.57	34.05	8.47	100.00
3	Kurunegala	15.98	21.76	22.69	29.03	10.55	100.00
4	Kandy	18.11	18.67	19.83	34.71	8.68	100.00
5	Galle	17.36	24.65	27.38	18.93	11.67	100.00
6	Kaluthara	17.21	21.92	26.81	23.23	10.82	100.00
7	Matara	16.58	18.25	21.88	33.81	9.49	100.00
8	Ratnapura	23.60	17.48	22.06	27.05	9.81	100.00
9	Jaffna	27.79	19.18	19.34	23.39	10.30	100.00
10	Kegalle	18.10	22.34	22.54	27.67	9.36	100.00
11	Puttalam	26.36	28.89	23.27	8.53	12.95	100.00
12	Badulla	24.25	29.25	22.06	10.35	14.09	100.00
13	Anuradhapura	21.32	30.90	25.00	7.73	15.05	100.00
14	Hambantota	22.66	29.72	25.21	9.28	13.12	100.00
15	Matale	22.22	21.32	22.05	24.12	10.29	100.00
16	Ampara	20.90	22.72	17.26	27.87	11.24	100.00
17	Batticaloa	22.68	22.31	21.90	20.69	12.42	100.00
18	Nuwara eliya	8.20	16.96	14.19	50.52	10.12	100.00
19	Trincomalee	21.12	21.87	20.02	23.98	13.01	100.00
20	Polonnaruwa	12.47	23.24	19.39	32.19	12.71	100.00
21	Vavuniya	25.44	25.38	22.28	14.06	12.84	100.00
22	Monaragala	19.05	17.99	19.65	30.20	13.11	100.00
23	Kilinochchi	30.56	20.34	19.60	17.81	11.69	100.00
24	Mannar	14.05	22.02	19.55	34.68	9.69	100.00
25	Mulativu	21.98	21.18	20.21	27.09	9.54	100.00

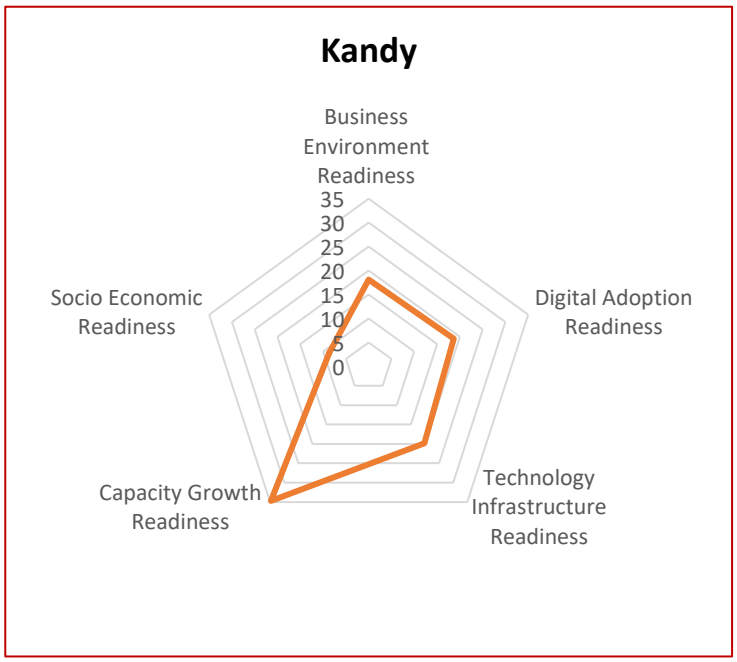
Table 7

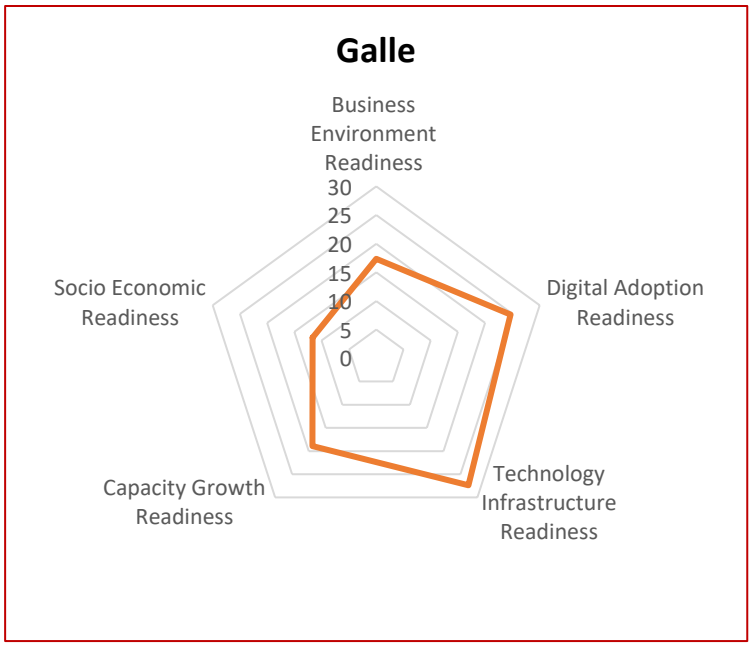
Graphical representation of District Snapshots










Galle
Business Environment Readiness
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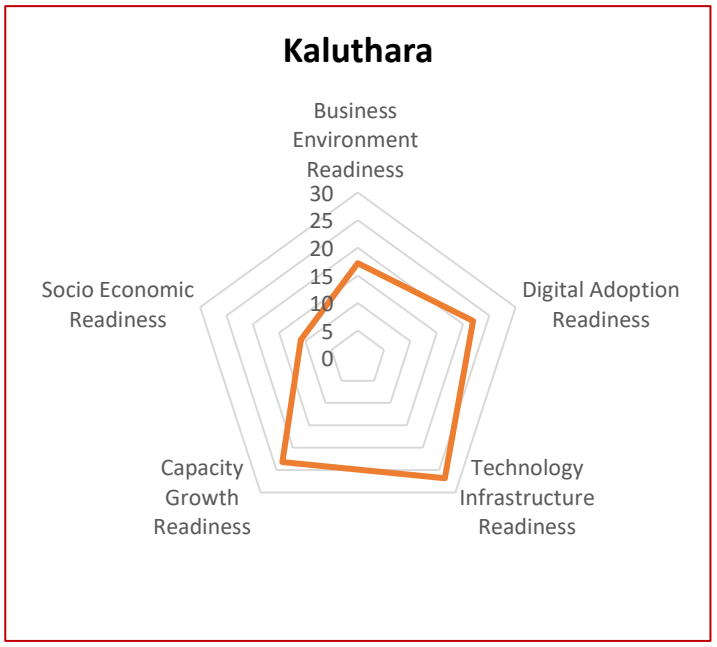
25
20
15
10
5
0
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness


Kaluthara
Business Environment Readiness
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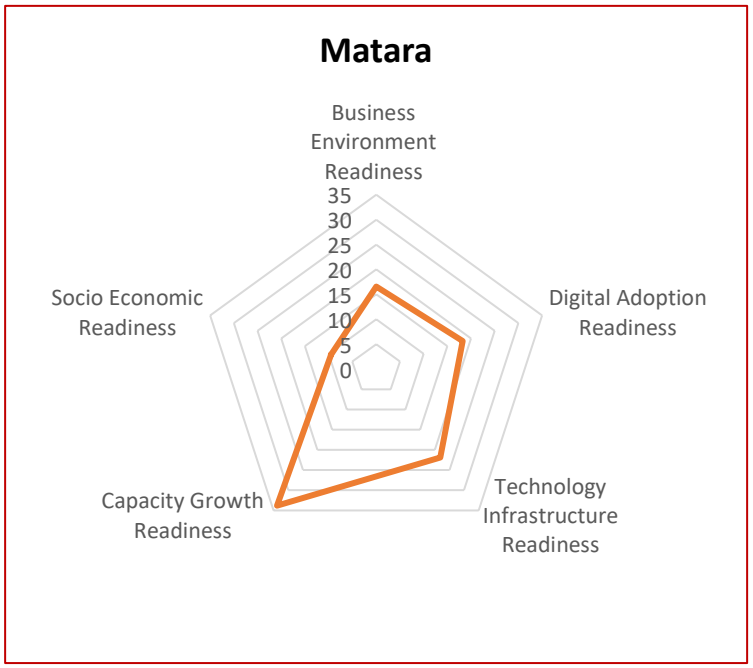
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness


Matara
Business Environment Readiness
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10
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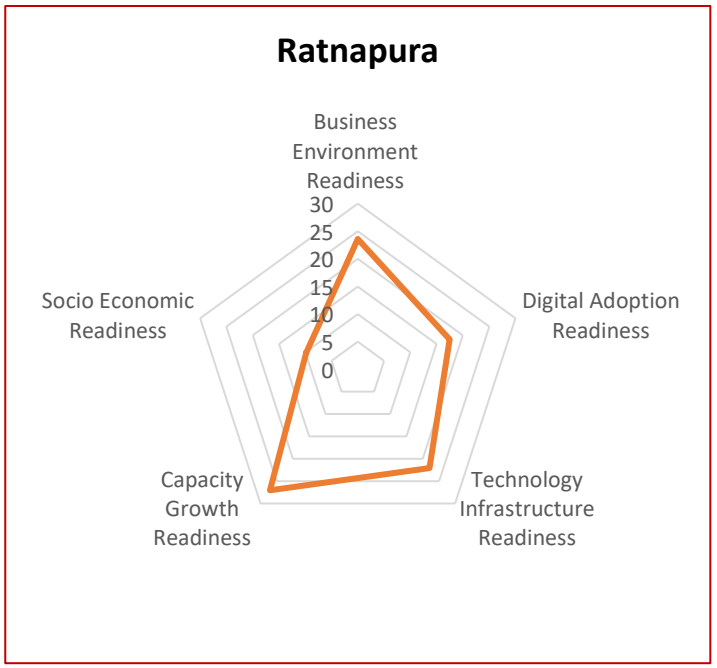
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness


Ratnapura
Business Environment Readiness
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15
10
5
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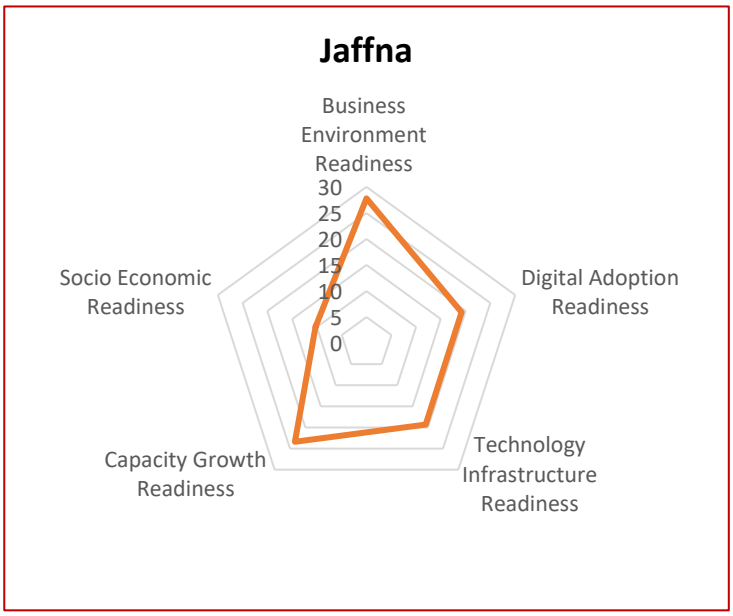
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness


Jaffna
Business Environment Readiness
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness
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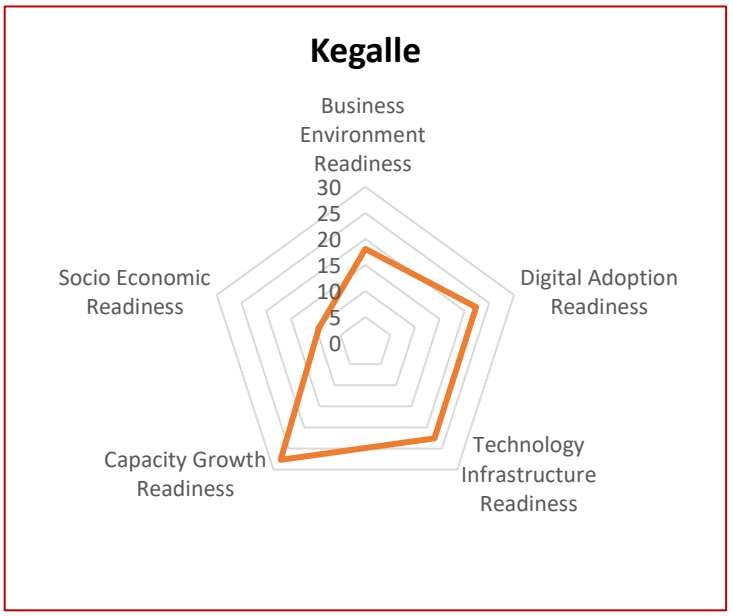
Kegalle
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Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness
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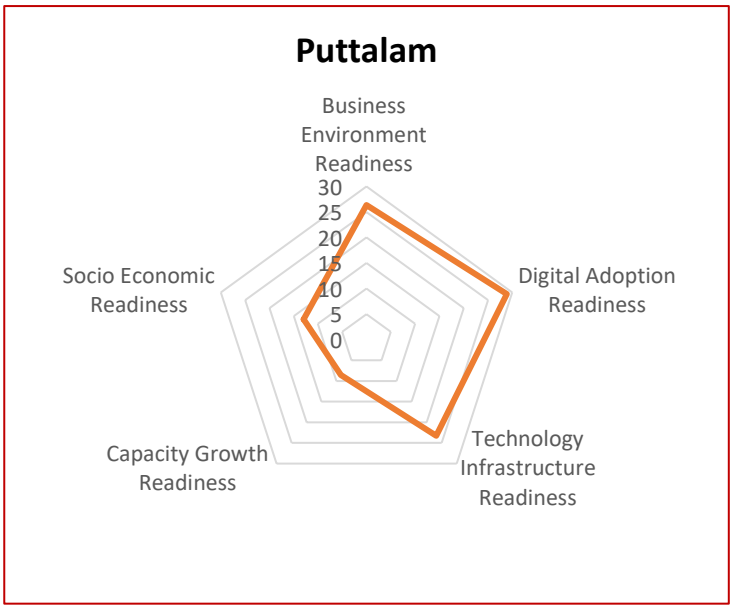
Puttalam
Business Environment Readiness
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness
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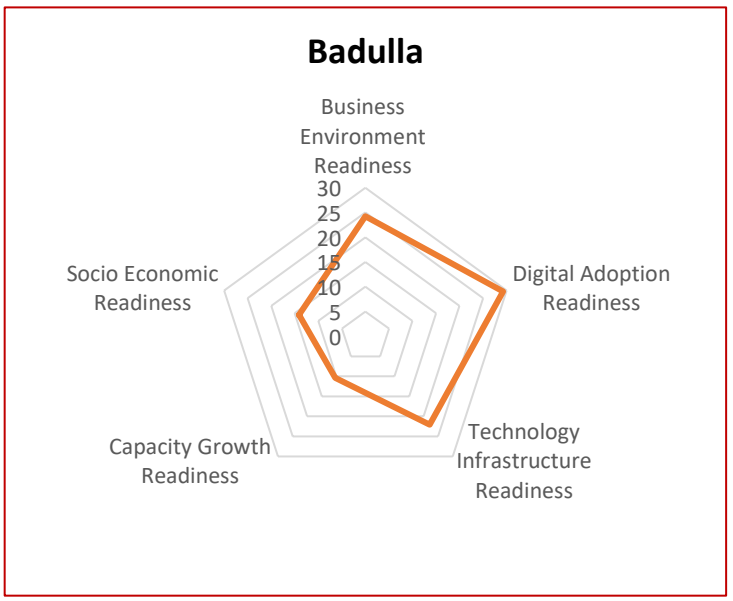
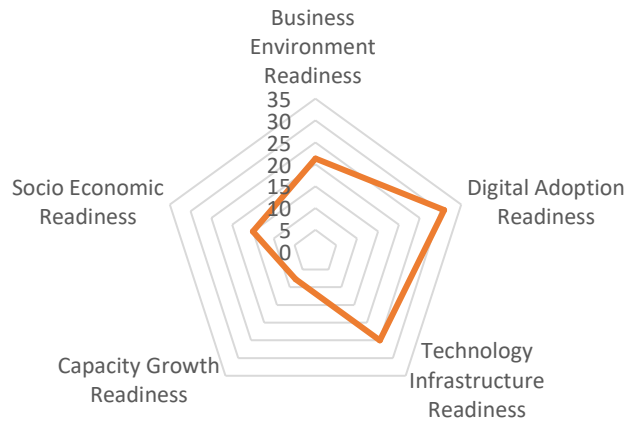

Badulla
Business Environment Readiness
Digital Adoption Readiness
Technology Infrastructure Readiness
Capacity Growth Readiness
Socio Economic Readiness
30
25
20
15
10
5
0

Anuradhapura



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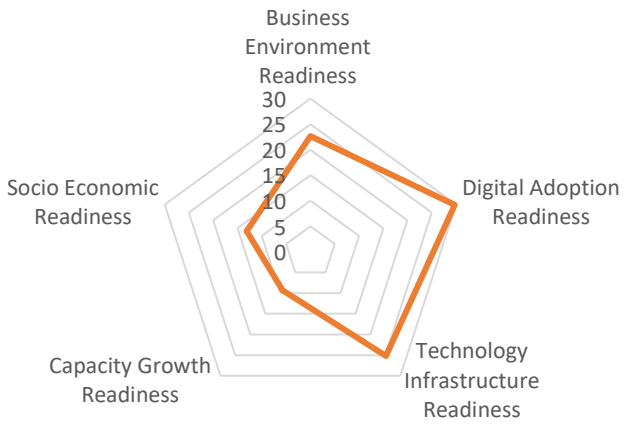

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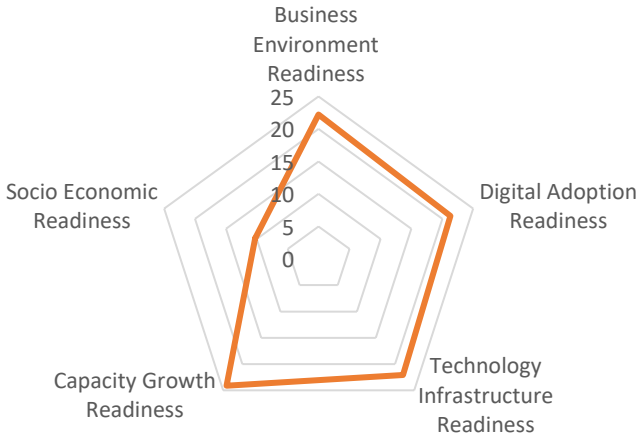

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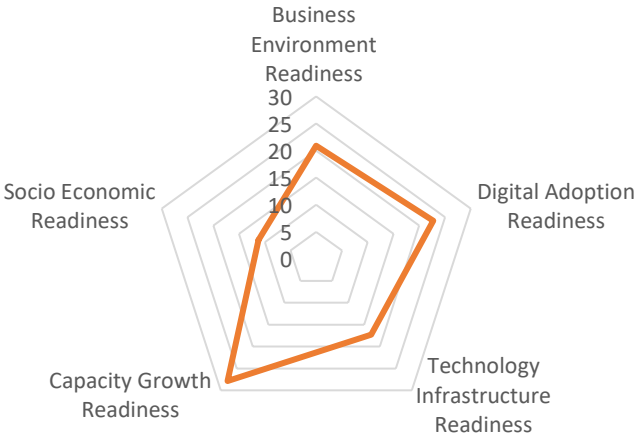

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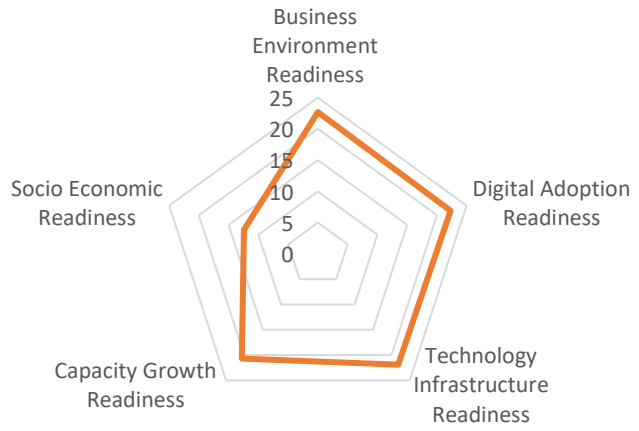
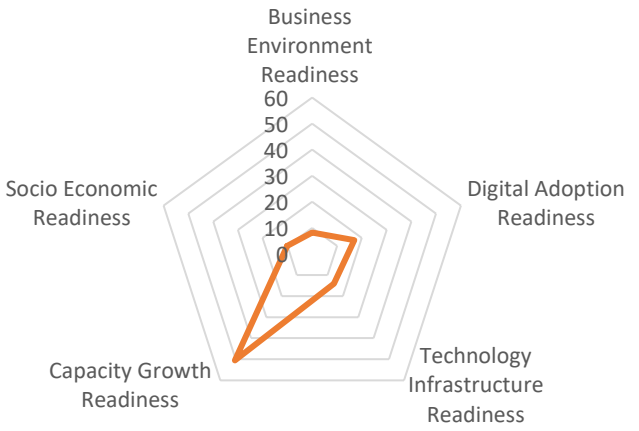


Nuwara eliya



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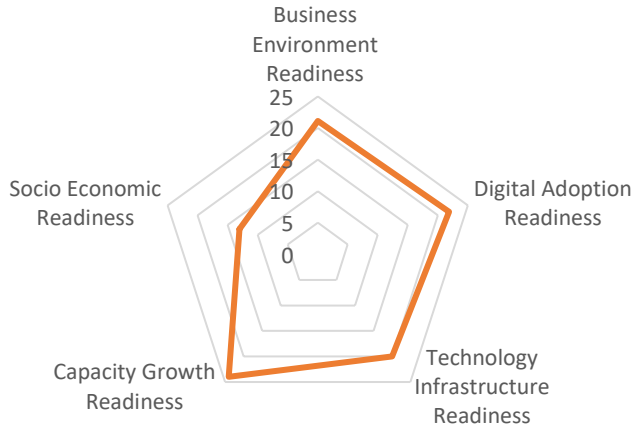

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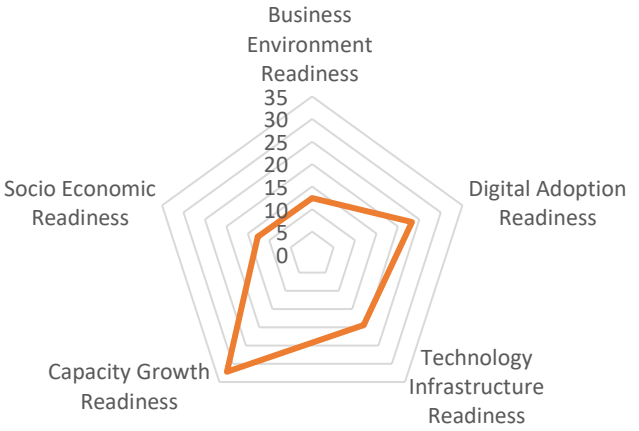

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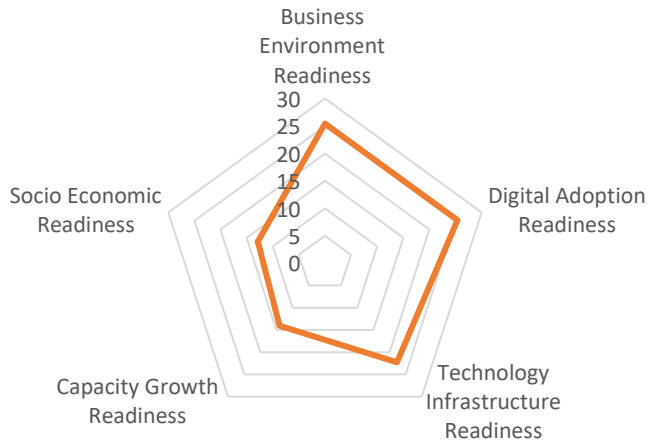
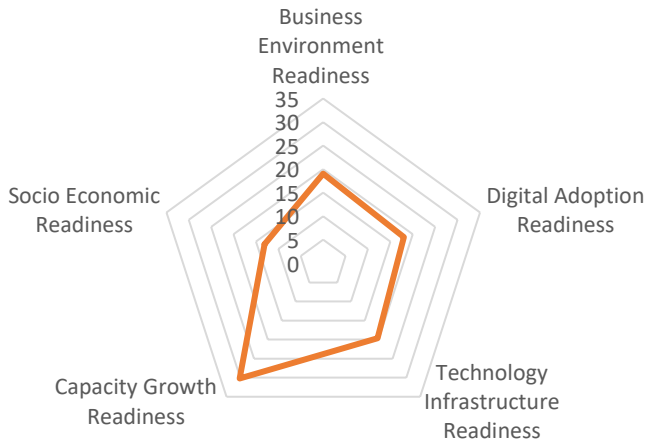
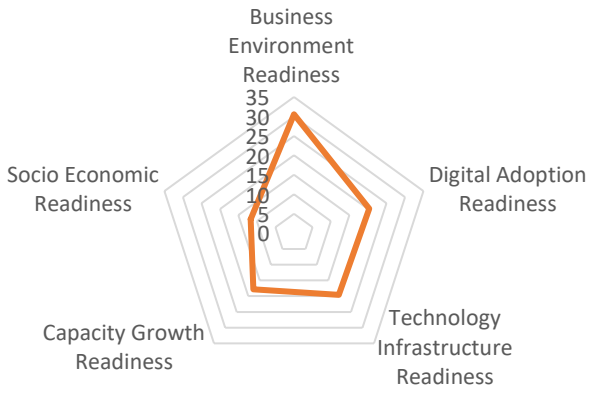


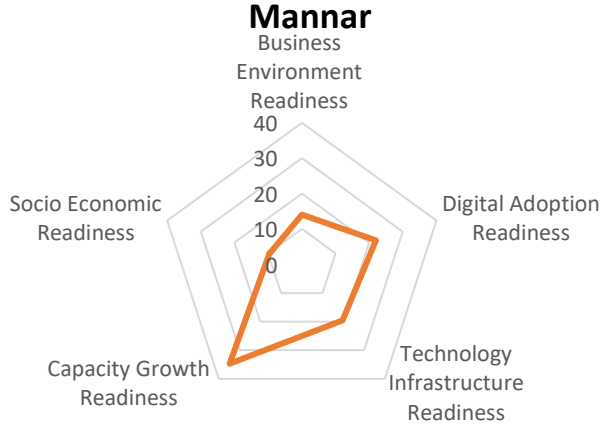
Monaragala



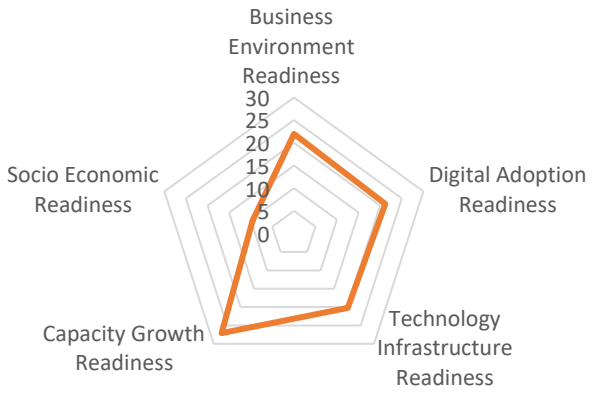
Kilinochchi



Mannar



Mulativu



6. DDRI Performance by Sub-Indices

Business Environment Readiness

In the ever-evolving digital economy, the readiness of a district's business environment plays a pivotal role in its economic growth and competitiveness. This comparison assesses the business environment readiness of twenty-five districts, highlighting their strengths and areas for improvement.

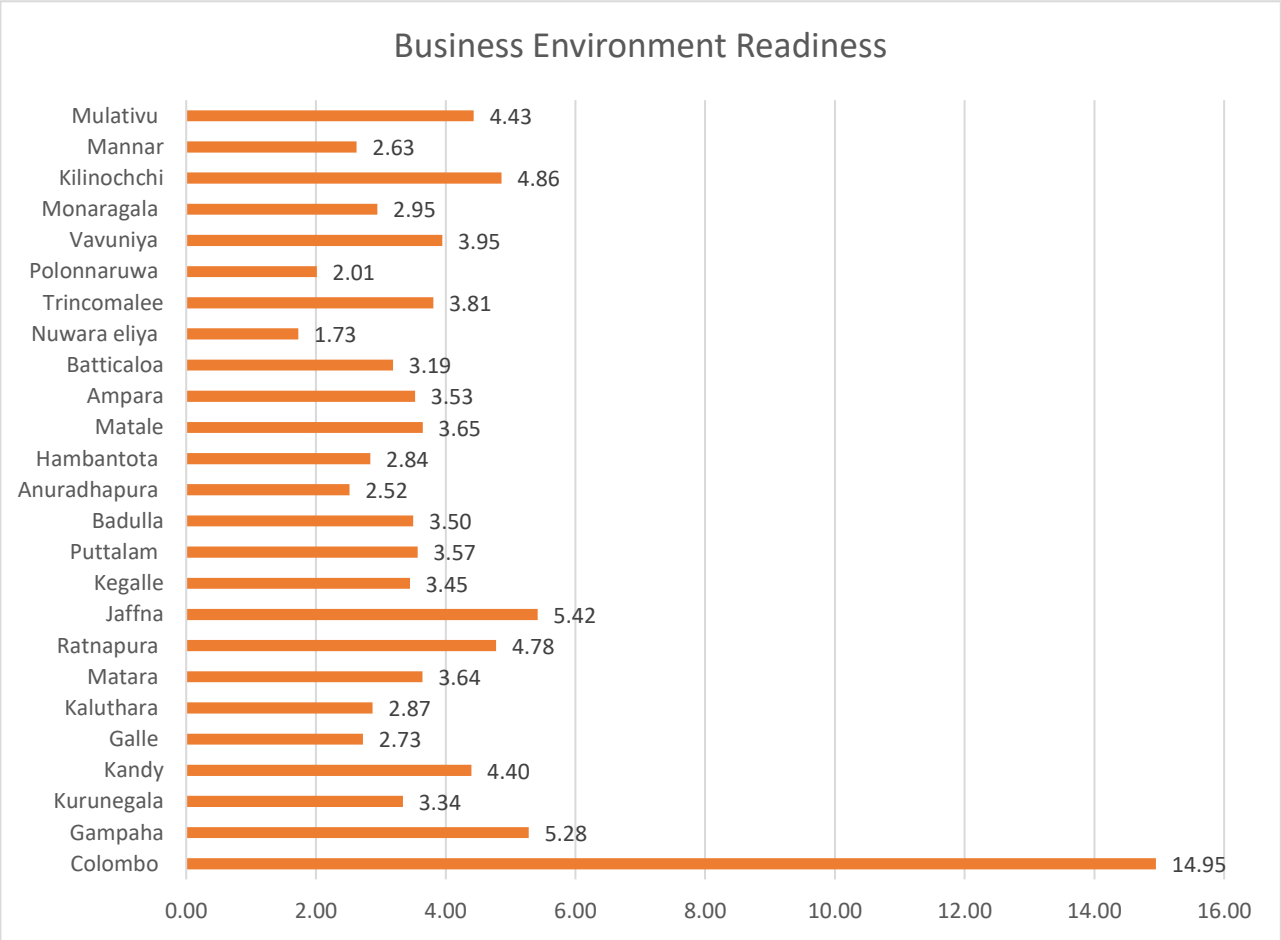


Figure 9

The above graph indicates the comparison of twenty-five districts in terms of their business environment readiness. Colombo (1st), Jaffna (2nd), and Gampaha (3rd) are the top-performers for business environment readiness.

Digital Adoption Readiness

In an era defined by rapid technological advancements, the readiness of districts in adopting digital technologies is a critical factor in their competitiveness and overall development. This comparison highlights the digital adoption readiness of twenty-five districts, shedding light on their respective digital landscapes.

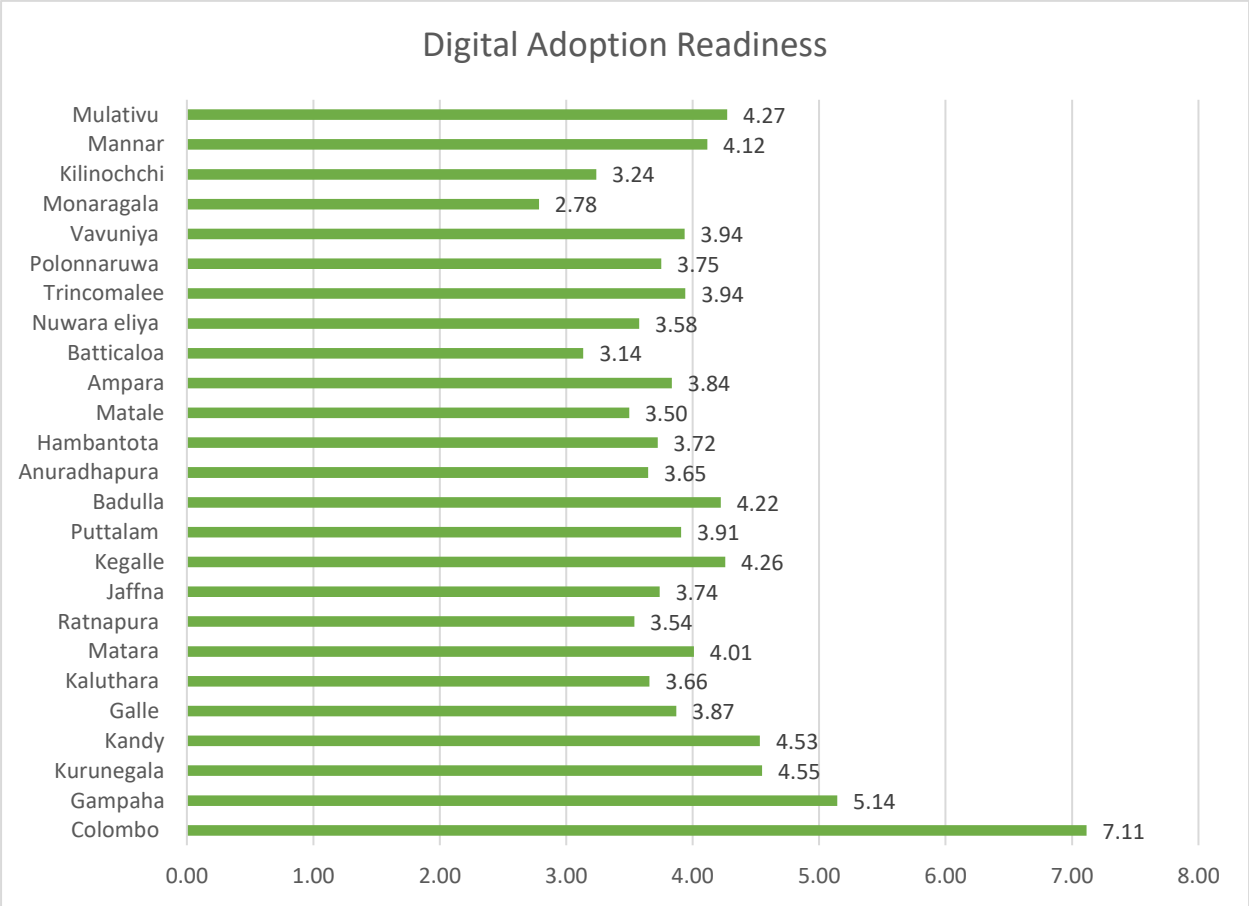


Figure 10

Colombo, Kurunegala, Gampaha and Kandy districts indicate higher degrees of digital adoption readiness. This analysis also shows that most districts score more than 2.5 for the digital adoption
achieving levels of digital readiness beyond expectations.

Technology Infrastructure Readiness

In today's rapidly evolving digital landscape, the state of technology infrastructure readiness in districts can significantly impact their competitiveness, innovation, and quality of life. This comparison assesses the technology infrastructure readiness of twenty five districts, shedding light on their technological capabilities and challenges.

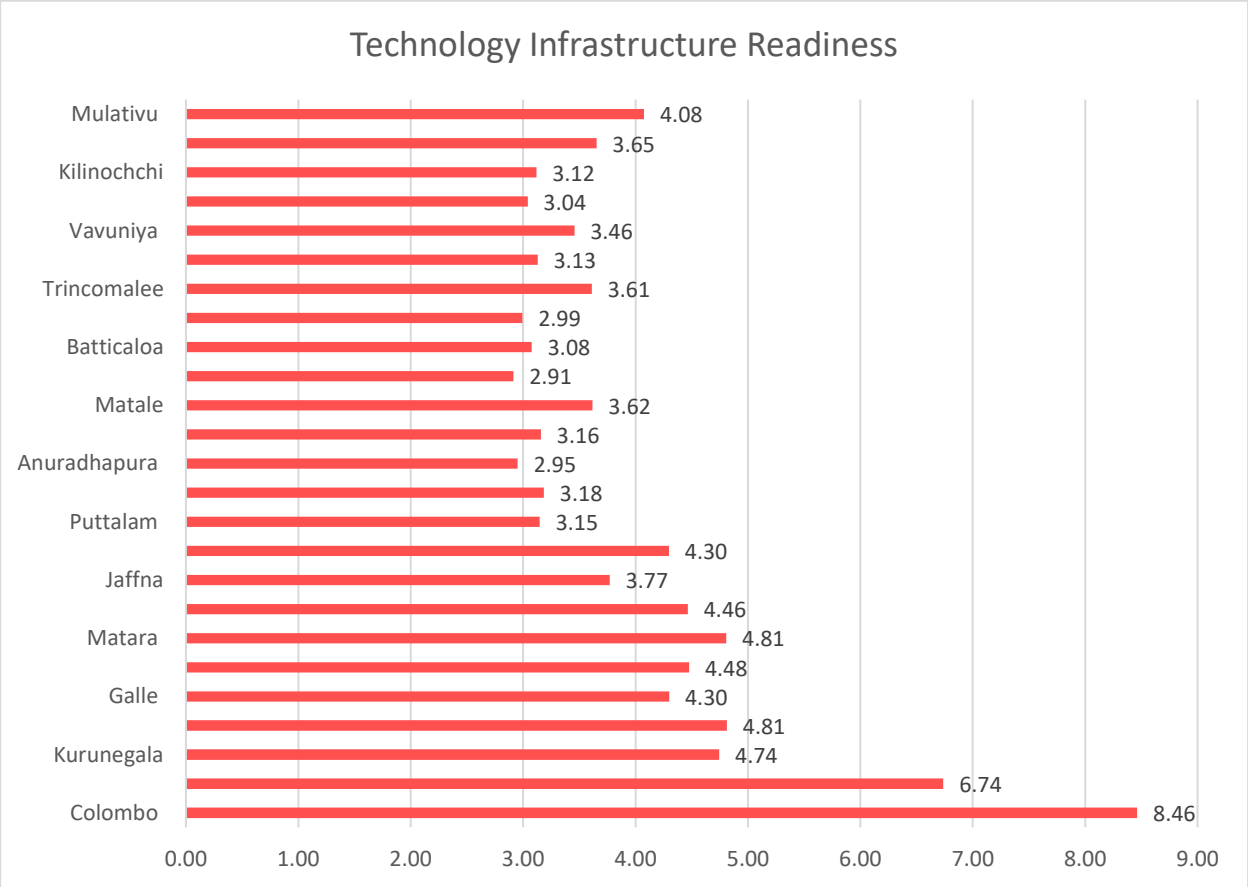


Figure 11

Colombo, Gampaha, Kandy and Matara achieve a spotlight for technology infrastructure readiness respectively. There is a notable improvement in terms of technology infrastructure across the country as all districts have scored above 2.9 for technology infrastructure readiness.

Capacity Growth Readiness

In an era driven by dynamic economic, technological, and social changes, the readiness of districts to adapt and grow their capacity is crucial for their sustainable development. This comparison assesses the capacity growth readiness of twenty-five districts, highlighting their strengths, strategies, and areas for further improvement.

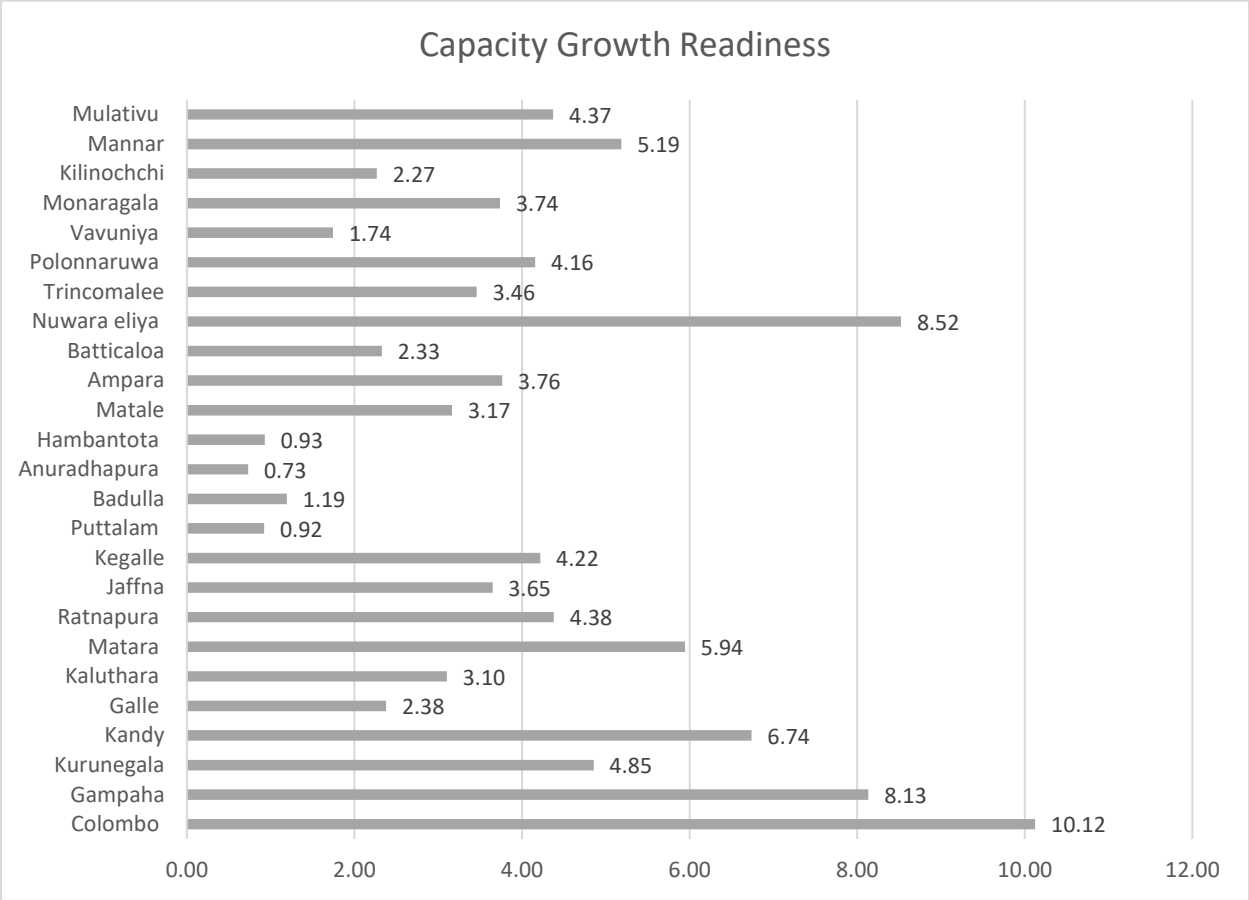


Figure 12

Colombo scores the highest readiness for capacity growth while Nuwara eliya (2nd) and Gampaha (3rd) score the next highest.

Socio Economic Readiness

Understanding the socio-economic readiness of districts is pivotal for informed decision-making and ensuring the well-being of their residents. This comparison assesses the socio-economic readiness of twenty-five districts, shedding light on their respective socio-economic landscapes.

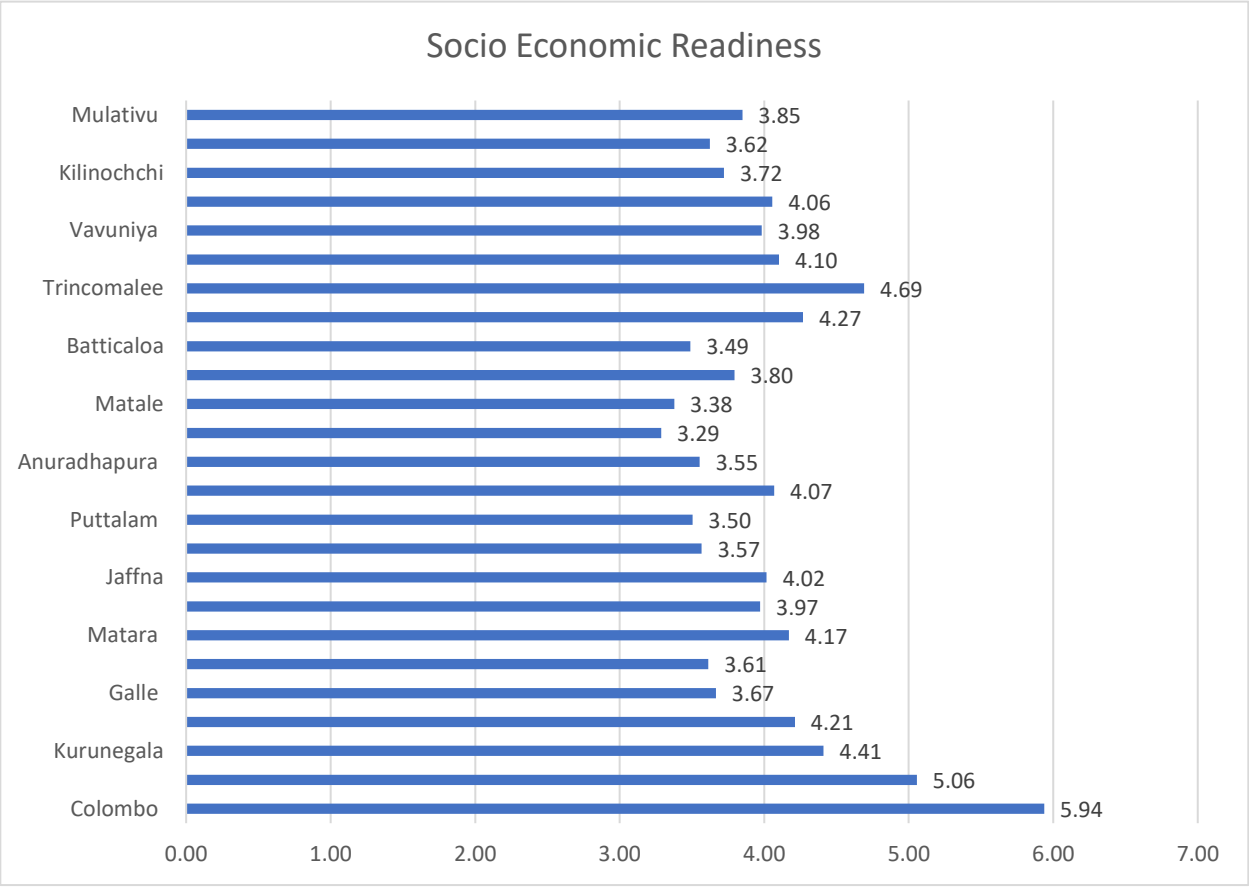


Figure 13

Socio -economic readiness of all districts scores above 3.0 while Colombo scores the highest. Gampaha (2nd) and Trincomalee (3rd) secures the 2nd and 3rd places respectively.

7. Conclusion

The District Digital Readiness Index (DDRI) serves as a vital tool for assessing and understanding the digital preparedness of a district or region. It provides a comprehensive snapshot of various dimensions that collectively shape the district's readiness for the digital age. As we conclude our exploration of the DDRI, several key takeaways emerge:

Multifaceted Assessment: The DDRI goes beyond mere access to technology and internet connectivity. It encompasses a wide range of dimensions, including digital infrastructure, skills, economic conditions, and social factors, offering a holistic view of digital readiness.

Data-Driven Decision-Making: The index relies on data collection and analysis, emphasizing the importance of evidence-based decision-making in promoting digital readiness. It encourages stakeholders to monitor progress and adapt strategies accordingly.

Policy Guidance: The DDRI results provide valuable insights for policymakers, local authorities, and community leaders. By identifying strengths and weaknesses, it guides the formulation of targeted policies and initiatives that can enhance digital readiness and drive economic growth.

Local Relevance: DDRI recognizes that digital readiness is not a one-size-fits-all concept. Each district or region has unique challenges and opportunities. The index allows for tailored approaches to digital transformation, acknowledging the local context.

Inclusivity: Inclusivity is at the heart of the DDRI. It underscores the importance of ensuring that all members of the community benefit from digitalization, thereby reducing the risk of leaving vulnerable populations behind.

Continuous Improvement: DDRI is not a one-time assessment but rather a dynamic tool with annual assessment. It encourages continuous monitoring and evaluation, fostering a culture of ongoing improvement in digital readiness.

Global Connectivity: In an increasingly interconnected world, the DDRI aligns with global efforts to bridge the digital divide and promote sustainable development. It recognizes the role of districts and regions in contributing to national and international digital agendas.

In conclusion, the District Digital Readiness Index is a valuable instrument for gauging, improving, and ensuring the digital readiness of districts and regions. It empowers communities to harness the potential of digital technologies, drive economic development, and enhance the quality of life for all citizens in Sri Lanka. As the digital landscape continues to evolve, the DDRI remains an indispensable resource for shaping the future of our districts and regions in the digital ag

8. Policy Implications

The District Digital Readiness Index (DDRI) provides valuable insights into the digital preparedness of a district or region. These insights can inform policymaking at various levels of government and guide strategies for promoting digital readiness and economic development. DDRI also serves as a valuable tool for policymakers to identify areas of strength and areas that require attention in promoting digital readiness. Policymaking should be data-driven, adaptive, and inclusive, aiming to ensure that all residents and businesses can benefit from digitalization and contribute to the economic and social development of the district or region.

Here are some key policy implications that can be drawn from the DDRI:

Digital Infrastructure Investment:
Low scores in digital infrastructure dimensions (such as broadband access and technology adoption) suggest the need for increased investment in digital infrastructure. Policymakers should prioritize expanding access to high-speed internet and supporting the deployment of emerging technologies like 5G.

Capacity Building:
Areas with low scores in digital skills and literacy should prioritize investments in education and training programs. Policymakers can support initiatives that provide digital skills training to residents, workers, and businesses to enhance their competitiveness.

Small Business Support:
DDRI indicates that small businesses are facing challenges in adopting digital technologies, policymakers should develop programs to assist them. This could include offering grants, subsidies, or training programs to help small businesses go digital.

Digital Inclusion Policies:
DDRI reveals disparities in digital readiness among different demographic groups or regions, policymakers should implement digital inclusion policies. These policies should focus on bridging the digital divide by ensuring that all residents have access to digital tools and services.

Innovation and Entrepreneurship:
A low score in innovation and entrepreneurship dimensions suggests a need for policies that promote innovation ecosystems, such as incubators, accelerators, and funding opportunities for startups. Encouraging innovation can drive economic growth.

Public-Private Partnerships:

Policymakers should explore opportunities for public-private partnerships (PPPs) to leverage private sector expertise and resources in improving digital readiness. PPPs can be instrumental in funding and implementing digital infrastructure projects.

Community Engagement:
The DDRI may highlight the importance of engaging with the local community to understand its unique needs and challenges. Policymakers should strengthen community engagement efforts through DDTCs to ensure that digital initiatives align with community goals.

Monitoring and Evaluation:
Policymakers should establish mechanisms for ongoing monitoring and evaluation of digital readiness through DDTCs. This ensures that policies are effective and allows for adjustments as technology evolves.

Resource Allocation:
The DDRI can help policymakers allocate resources strategically based on areas with the greatest need. It can guide budgeting decisions and prioritize investments in digital infrastructure, education, and innovation.

Collaboration and Coordination:
Policymakers should foster collaboration and coordination among government agencies, businesses, educational institutions, and community organizations to implement holistic strategies for digital readiness.

9. Recommendations

Recommendations for utilizing the District Digital Readiness Index (DDRI) effectively and promoting digital readiness in districts or regions include the following:

Regular Assessment:
Continuously update and assess the DDRI to reflect changing conditions and emerging technologies. Regular assessments will provide accurate insights into progress and areas needing improvement.

Data Quality Enhancement:
Invest in data collection and validation mechanisms to ensure the accuracy and reliability of the data used in DDRI formulation. Improving the quality of data is important to enhancing the index in future.

Benchmarking and Comparison:

Encourage districts or regions to benchmark their DDRI scores against neighboring areas or similar districts to identify best practices and areas for improvement.

Tailored Strategies for Development:
Develop customized strategies and action plans based on the specific strengths and weaknesses identified by the DDRI and having an implementation approach through DDTCs. Blanket approaches may not be effective to address unique needs of regions.

Public Awareness:
Raise public awareness about the DDRI and its significance among citizens, businesses, and community leaders about the importance of digital readiness for economic growth and quality of life.

Community Engagement:
Involve local communities, businesses, and stakeholders in the DDRI assessment and improvement processes to solicit their input and feedback to ensure that initiatives align with local needs.

Policy Alignment and Advocacy:
Ensure that local policies and regulations align with DDRI findings and recommendations. Policymakers should use the index as a guide for policy development and updates. Advocate for supportive policies at higher government levels, such as state or national, to complement district-level efforts and create an enabling environment for digital readiness.

10. Limitations

The District Digital Readiness Index (DDRI) is a valuable tool for assessing digital readiness, but like any assessment framework, it has limitations. Some of the limitations of DDRI include:

Dependence on Secondary Data:
DDRI relies heavily on secondary data sources, which may not always be up-to-date and accurate in order to get an overview of the current state of digital readiness. ICTA and DCS has discussed with the organizations who provides data to have timely access to reliable data in future assessments.

Availability of Variables:
DDRI variables are often selected based on the availability of secondary data. This may result in important aspects of digital readiness being excluded from the assessment if relevant data is not readily accessible.

Local Variability:
DDRI provides a district-level assessment, which may not capture local variability within a district. Some areas within a district may be more digitally ready than others, and these variations may be masked in the overall assessment.

Dynamic Nature of Digital Readiness:
Digital readiness is a dynamic concept that evolves rapidly with technological advancements and changing socioeconomic conditions. The static nature of DDRI assessments may not fully capture this dynamism.

Qualitative Factors:
DDRI primarily relies on quantitative data, which may not capture qualitative aspects of digital readiness, such as the presence of innovative communities or local government support for digital initiatives.

Contextual Factors:
DDRI may not fully account for contextual factors that influence digital readiness, such as cultural attitudes toward technology, community engagement, or historical factors that impact local economies.

Despite these limitations, DDRI remains a valuable tool for assessing and benchmarking digital readiness at the district level. To mitigate some of these limitations, it's essential to supplement DDRI assessments with local qualitative data, engage local stakeholders, and regularly update the assessment to reflect changing conditions and emerging technologies. Additionally, combining DDRI results with other data sources and analyses can provide a more comprehensive understanding of a district's digital readiness and inform targeted strategies for improvement.

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List of Tables and Figures

No	Dimension	Variable	Source of Data
1	Technology Industry Environment	Established Tech startup	Startup SL
2		Established Tech Companies	ICTA Survey
3	General Business Environment	Established Businesses	District Secretariat, RoC
4		Commercial Banks	CBSL
5	Digital Adoption of People	Access to devices	DCS
6		Access to internet	TRC/ LF
7		Ability to use a computer	DCS
8		Ability to perform digital activity	DCS
9		Use of Telecommunication Services	TRC
10		Use of eGov services	ICTA
11		Virtual and Social Networking	META
12	Digital Adoption of Businesses	Business Domains Registrations	LK domain registry
13		Facebook Business Pages	META
14		Online Business Registrations	District Secretariat and Company Registrar
15	Internet Coverage and Access	Internet speed	TRC
16		4G coverage (Demographical)	TRC
17		4G coverage (Geographical)	TRC
18	Mobile and Broadband Penetration and usage	Mobile penetration	TRC
19		Broadband penetration	TRC
20		Active Broadband Subscriptions	TRC
	Dimension	Variable	Source of Data
21	Human Resource Potential	Availability of Skilled talent pool	UGC, MoHE
22		Availability of future talent pool	MoE
23		ICT Workforce	
24		Availability of future talent pool	MoE
25		Availability of convertible talent pool	UGC
26		Availability of secondary layer talent pool	TVEC
27	Education Infrastructure	IT Labs in Schools	MoE
28		Internet Access in Schools	MoE
29		Schools Teaching ICT	MoE
30	Prosperity and well-being of the citizens	Level of prosperity and well-being	CBSL
31		Ability of spending of the citizens	CBSL
32	Employment Status	Employment	CBSL
33		Female contribution to GDP	CBSL

Table 3: Correlation and Factor Analysis Results for Variable Reduction

Pooled variable	Combined variables
IT_Busns_Reg_Busns	IT_Businesses_PP / Businesses_PP
Broadband_PP	Startups_PP Service_Employment Device Internet_PP 4G Mobile_PP No_Name_PP Income
Access	Labs
Banks_PP	-
Digital_Literacy	-
Communication	-
IT_Pool	Skilled_Pool + Future_Pool + Secondary_Pool
Employment	-

Table 4: Selected Variables for Factor Analysis after Homogeneity Assessment

Variable	Description	Unit
IT_Busns_Reg_Busns_T	Proportion of IT Businesses to Total Businesses	%
Digital_Literacy_T	Digital_Literacy Rate	%
Broadband_PP_T	Broadband penetration per thousand population	No. of active subscriptions at least used 1mb within a month Per 1000 population
IT_Pool_T	Summation of	Count
	No of Students enrollments for Computer Science, Engineering and Science degrees in states and non-states Universities	
	Students enrolling for maths, bio and technology streams in A/L	
	TVET Sector Student Enrollments and Certifications in the sector of ICT (NVQ)	
Access_T	Number of schools having internet access	Count

Table 5: Share of scaled variables within the district | Least contribution of each variable within the district is highlighted in yellow

RANK	District	Business Environment Readiness				Digital Adoption Readiness				Technology Infrastructure Readiness				Capacity Growth Readiness					Socio Economic Readiness		Total
		Startups_PP	Service_Employment	IT_Busns/Reg_Busns	Banks_PP	Device	Digital_Literacy	Communication	Internet_PP	4G	Mobile_PP	Active_Mobile_PP	Broadband_PP	Skilled_Pool	Future_Pool	Secondary_Pool	Labs	Access	Income	Employment	
1	Colombo	21.54	3.72	3.31	3.83	5.15	2.93	2.22	5.12	4.56	3.19	3.58	7.01	8.56	6.19	5.99	3.03	3.65	4.25	2.18	100.00
2	Gampaha	4.44	4.62	5.85	2.78	5.80	3.86	3.32	4.24	7.52	3.97	4.26	6.82	8.31	6.81	5.77	5.42	7.75	5.11	3.36	100.00
3	Kurunegala	1.17	5.74	5.46	3.60	7.20	5.33	4.90	4.34	7.27	4.84	4.52	6.06	6.67	6.22	4.35	5.59	6.20	5.84	4.71	100.00
4	Kandy	2.85	5.39	5.94	3.94	6.23	4.33	3.80	4.32	5.68	3.96	3.93	6.26	6.77	7.65	5.46	6.65	8.19	4.64	4.04	100.00
5	Galle	2.37	6.58	2.56	5.85	5.64	6.92	5.66	6.44	6.11	6.54	6.31	8.42	2.73	3.40	3.22	4.48	5.10	5.38	6.30	100.00
6	Kaluthara	3.39	3.66	5.50	4.66	3.31	5.79	6.34	6.47	6.02	6.12	6.39	8.28	3.40	4.41	4.72	5.77	4.94	4.75	6.07	100.00
7	Matara	0.66	4.65	6.56	4.71	5.44	4.59	3.89	4.34	7.24	4.62	4.32	5.69	7.46	6.85	9.10	4.92	5.49	5.04	4.45	100.00
8	Ratnapura	2.78	5.01	12.05	3.76	5.06	4.82	4.05	3.55	8.55	4.82	4.44	4.24	7.03	5.88	4.88	4.56	4.70	4.99	4.83	100.00
9	Jaffna	8.95	5.30	6.14	7.40	4.46	5.57	3.68	5.46	4.32	4.40	5.22	5.40	4.11	4.95	5.30	4.99	4.04	5.32	4.98	100.00
10	Kegalle	1.07	6.10	6.51	4.41	4.95	5.31	8.06	4.01	7.73	4.93	4.82	5.06	4.93	3.74	4.82	5.90	8.28	4.10	5.26	100.00
11	Puttalam	3.18	5.13	11.27	6.78	6.49	9.22	6.31	6.87	2.25	7.33	6.98	6.70	1.17	0.86	1.77	1.88	2.86	5.34	7.62	100.00
12	Badulla	4.70	8.45	5.33	5.78	9.81	8.48	6.39	4.57	3.40	6.65	6.21	5.81	1.54	1.19	2.90	2.24	2.48	7.19	6.90	100.00
13	Anuradhapura	1.62	6.27	5.50	7.93	4.25	7.31	12.44	6.90	3.17	8.56	7.81	5.46	1.26	0.77	1.12	2.28	2.31	6.35	8.70	100.00
14	Hambantota	0.71	6.36	7.30	8.29	3.59	7.08	12.81	6.23	5.41	7.82	6.89	5.09	1.33	1.28	2.51	1.72	2.44	5.16	7.96	100.00
15	Matale	2.10	5.94	8.85	5.33	3.46	5.55	6.87	5.44	2.99	6.25	6.01	6.80	3.19	3.88	7.69	4.65	4.71	4.34	5.95	100.00
16	Ampara	1.92	7.18	5.72	6.08	5.29	6.33	6.27	4.84	2.22	5.96	5.87	3.21	4.12	5.29	7.69	6.72	4.05	5.32	5.92	100.00
17	Batticaloa	2.21	7.76	5.73	6.98	2.62	6.49	6.81	6.39	3.83	6.83	7.24	4.01	2.66	2.82	6.47	4.42	4.32	5.03	7.39	100.00
18	Nuwara eliya	0.00	4.44	0.55	3.21	6.33	4.39	4.05	2.20	6.88	2.77	2.40	2.14	9.66	10.64	9.73	9.34	11.15	5.32	4.81	100.00
19	Trincomalee	0.00	5.35	10.89	4.87	5.36	5.75	4.74	6.02	5.19	5.76	5.88	3.20	3.93	4.16	5.19	4.72	5.98	7.38	5.63	100.00
20	Polonnaruwa	0.00	5.22	1.03	6.22	6.76	5.73	5.29	5.46	2.90	6.49	5.86	4.14	5.53	7.04	5.10	9.45	5.08	6.49	6.22	100.00
21	Vavuniya	6.05	5.00	7.95	6.45	7.18	4.83	5.50	7.86	3.02	6.56	6.88	5.82	2.40	2.91	1.65	3.43	3.67	6.36	6.48	100.00
22	Monaragala	2.32	4.42	6.11	6.19	4.05	4.29	5.30	4.35	5.59	6.06	5.29	2.71	5.60	7.39	2.88	8.97	5.36	6.69	6.42	100.00
23	Kilinochchi	19.87	4.45	0.00	6.24	2.36	5.24	5.15	7.58	2.50	5.45	6.52	5.13	2.68	3.53	4.18	4.61	2.81	5.44	6.26	100.00
24	Mannar	2.84	4.13	0.00	7.09	5.33	5.12	5.67	5.90	5.51	5.75	6.01	2.29	6.39	7.47	7.85	7.27	5.70	4.33	5.37	100.00
25	Mulativu	9.16	5.50	0.00	7.32	4.09	4.91	5.25	6.93	6.38	5.12	5.75	2.96	4.70	5.78	4.13	7.42	5.07	4.60	4.95	100.00

Table 6: Share of scaled variables between the districts | Least contribution of each variables are highlighted in yellow

RANK	District	Business Environment Readiness				Digital Adoption Readiness				Technology Infrastructure Readiness				Capacity Growth Readiness					Socio Economic Readiness	
		Startups_PP	Service_Employment	IT_Busns/Reg_Busns	Banks_PP	Device	Digital_Literacy	Communication	Internet_PP	4G	Mobile_PP	Active_Mobile_PP	Broadband_PP	Skilled_Pool	Future_Pool	Secondary_Pool	Labs	Access	Income	Employment
1	Colombo	39.76	6.86	6.11	7.06	9.50	5.41	4.10	9.45	8.42	5.89	6.60	12.94	15.80	11.43	11.05	5.59	6.75	7.85	4.03
2	Gampaha	5.30	5.52	6.99	3.32	6.93	4.61	3.96	5.07	8.98	4.74	5.08	8.15	9.92	8.13	6.89	6.47	9.25	6.10	4.01
3	Kurunegala	0.98	4.80	4.57	3.01	6.02	4.45	4.10	3.63	6.08	4.05	3.78	5.07	5.58	5.20	3.64	4.67	5.18	4.89	3.94
4	Kandy	2.77	5.24	5.76	3.82	6.05	4.20	3.69	4.19	5.52	3.84	3.81	6.08	6.57	7.42	5.30	6.45	7.95	4.50	3.92
5	Galle	1.49	4.13	1.61	3.68	3.54	4.34	3.55	4.04	3.84	4.11	3.96	5.29	1.71	2.14	2.02	2.82	3.20	3.38	3.95
6	Kaluthara	2.27	2.44	3.67	3.11	2.21	3.87	4.23	4.32	4.02	4.09	4.27	5.53	2.27	2.94	3.15	3.85	3.30	3.17	4.05
7	Matara	0.58	4.09	5.77	4.14	4.78	4.03	3.42	3.81	6.36	4.07	3.80	5.00	6.56	6.02	8.00	4.32	4.82	4.43	3.92
8	Ratnapura	2.25	4.06	9.76	3.04	4.10	3.90	3.28	2.87	6.92	3.91	3.59	3.44	5.69	4.76	3.95	3.70	3.81	4.04	3.91
9	Jaffna	6.98	4.13	4.79	5.77	3.48	4.34	2.87	4.26	3.37	3.43	4.07	4.21	3.21	3.86	4.14	3.89	3.15	4.15	3.89
10	Kegalle	0.81	4.65	4.96	3.37	3.78	4.05	6.15	3.06	5.89	3.75	3.68	3.86	3.76	2.85	3.67	4.50	6.31	3.12	4.01
11	Puttalam	1.72	2.77	6.10	3.67	3.51	4.99	3.42	3.72	1.22	3.97	3.78	3.63	0.63	0.47	0.96	1.02	1.55	2.89	4.12
12	Badulla	2.71	4.88	3.08	3.33	5.66	4.90	3.69	2.64	1.96	3.84	3.58	3.35	0.89	0.69	1.67	1.29	1.43	4.15	3.98
13	Anuradhapura	0.76	2.96	2.60	3.74	2.01	3.45	5.87	3.26	1.50	4.04	3.69	2.58	0.59	0.36	0.53	1.08	1.09	3.00	4.11
14	Hambantota	0.36	3.19	3.66	4.15	1.80	3.55	6.42	3.12	2.71	3.92	3.45	2.55	0.67	0.64	1.26	0.86	1.22	2.59	3.99
15	Matale	1.38	3.90	5.81	3.50	2.27	3.64	4.51	3.57	1.96	4.10	3.95	4.46	2.10	2.54	5.05	3.05	3.09	2.85	3.91
16	Ampara	1.29	4.85	3.86	4.11	3.57	4.27	4.23	3.27	1.50	4.03	3.96	2.17	2.78	3.57	5.19	4.54	2.73	3.60	4.00
17	Batticaloa	1.24	4.36	3.22	3.92	1.47	3.65	3.83	3.59	2.15	3.84	4.07	2.25	1.49	1.59	3.64	2.48	2.43	2.83	4.15
18	Nuwara eliya	0.00	3.75	0.46	2.71	5.34	3.70	3.42	1.85	5.80	2.34	2.03	1.81	8.15	8.98	8.21	7.88	9.40	4.48	4.05
19	Trincomalee	0.00	3.86	7.86	3.51	3.86	4.15	3.42	4.34	3.74	4.15	4.24	2.31	2.84	3.00	3.74	3.40	4.32	5.32	4.06
20	Polonnaruwa	0.00	3.37	0.66	4.02	4.37	3.70	3.42	3.52	1.87	4.19	3.78	2.67	3.57	4.54	3.29	6.10	3.28	4.19	4.02
21	Vavuniya	3.75	3.10	4.93	4.00	4.45	3.00	3.42	4.88	1.87	4.07	4.27	3.61	1.49	1.80	1.02	2.13	2.28	3.95	4.02
22	Monaragala	1.44	2.74	3.78	3.83	2.51	2.66	3.28	2.69	3.46	3.75	3.27	1.68	3.47	4.57	1.78	5.55	3.32	4.14	3.97
23	Kilinochchi	12.65	2.83	0.00	3.97	1.50	3.34	3.28	4.83	1.59	3.47	4.15	3.27	1.70	2.25	2.66	2.93	1.79	3.46	3.98
24	Mannar	2.12	3.09	0.00	5.30	3.98	3.83	4.23	4.41	4.12	4.30	4.49	1.71	4.78	5.59	5.86	5.44	4.26	3.23	4.01
25	Mulativu	7.39	4.43	0.00	5.91	3.30	3.96	4.23	5.59	5.14	4.13	4.64	2.39	3.79	4.67	3.33	5.98	4.09	3.71	3.99
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 7: District snapshots

RANK	District	Business Environment Readiness	Digital Adoption Readiness	Technology Infrastructure Readiness	Capacity Growth Readiness	Socio Economic Readiness	Total
1	Colombo	32.39	15.42	18.34	27.42	6.43	100.00
2	Gampaha	17.69	17.23	22.57	34.05	8.47	100.00
3	Kurunegala	15.98	21.76	22.69	29.03	10.55	100.00
4	Kandy	18.11	18.67	19.83	34.71	8.68	100.00
5	Galle	17.36	24.65	27.38	18.93	11.67	100.00
6	Kaluthara	17.21	21.92	26.81	23.23	10.82	100.00
7	Matara	16.58	18.25	21.88	33.81	9.49	100.00
8	Ratnapura	23.60	17.48	22.06	27.05	9.81	100.00
9	Jaffna	27.79	19.18	19.34	23.39	10.30	100.00
10	Kegalle	18.10	22.34	22.54	27.67	9.36	100.00
11	Puttalam	26.36	28.89	23.27	8.53	12.95	100.00
12	Badulla	24.25	29.25	22.06	10.35	14.09	100.00
13	Anuradhapura	21.32	30.90	25.00	7.73	15.05	100.00
14	Hambantota	22.66	29.72	25.21	9.28	13.12	100.00
15	Matale	22.22	21.32	22.05	24.12	10.29	100.00
16	Ampara	20.90	22.72	17.26	27.87	11.24	100.00
17	Batticaloa	22.68	22.31	21.90	20.69	12.42	100.00
18	Nuwara eliya	8.20	16.96	14.19	50.52	10.12	100.00
19	Trincomalee	21.12	21.87	20.02	23.98	13.01	100.00
20	Polonnaruwa	12.47	23.24	19.39	32.19	12.71	100.00
21	Vavuniya	25.44	25.38	22.28	14.06	12.84	100.00
22	Monaragala	19.05	17.99	19.65	30.20	13.11	100.00
23	Kilinochchi	30.56	20.34	19.60	17.81	11.69	100.00
24	Mannar	14.05	22.02	19.55	34.68	9.69	100.00
25	Mulativu	21.98	21.18	20.21	27.09	9.54	100.00