International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 08 | Aug 2022 www.irjet.net p-ISSN: 2395-0072

Investigation of Readiness Indices for Embracing for Industry 5.0: The Road Ahead

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Abstract - *Several factors influence a country's preparedness index. Technology is an important factor in increasing productivity and improving job function. In the modern era, IT is being used to improve organizations' ability to employ resources. This article examines various readiness indices to determine how industry 5.0 is evolving and how to quantify the IT readiness index for overall development. These organizational indices improved service provider access, work allocation effectiveness, process efficiency, and transparency. It is critical to determine what factors influence an organization's readiness (where IT readiness acts as an indicator to measure the IT-related facilities). The readiness index for each government organization must be determined based on these characteristics, which will help analysts rate the organization's readiness for AI-based automation.*

Key Words: e-governance, Industry 5.0, Readiness Index, Big Data.

1. INTRODUCTION

Over the last few decades, technological advancements have advanced rapidly, and they now permeate all aspects of Business and society, providing new opportunities and benefits to many (Bag et al., 2021). As technological disruptions become more common, global leaders focus on combining mechanical opportunities and human prosperity. Assume we can't use innovation to bring out the best in people (Chauhan et al., 2021). In that case, society may become fractured, and some of our core authority principles, such as majority rule government, may be jeopardized. Furthermore, if the benefits of innovation are not fully realized, new gaps may form, or existing ones will be exacerbated. In this perspective, the two co-editors of the Network Readiness Index (NRI), one of the most important global databases on the application and utilization of data and communication technology, decided to update the database in collaboration with selected ICT experts (Bruschi et al., 2021; Esmaeilian et al., 2020; Gupta et al., 2021; N. Kumar & Dadhich, 2014). As a result, an updated, future-ready file will continue the NRI tradition of providing policymakers, business leaders, academics, and the general public with a reliable and significant tool for assessing progress and planning activities for increasingly comprehensive and feasible development in the digital age.

As outages in big data, computerized reasoning, finance, wellness tech, and expanded and augmented reality gain traction, global pioneers focus on combining new opportunities with human concerns (Industry & What, 2016). The realization has grown that if we do not use innovation to bring out the best in people, we may end up with a society that is broken. Our fundamental authoritative principles, such as the majority rule system, have been corrupted. Furthermore, if the benefits of ongoing and future improvements are not distributed evenly, they will create new gaps or exacerbate existing ones. In the literature, (Dadhich, Rao, et al., 2021; Kannan, 2021; Rao, S S, 2017) established the technology readiness index of Asian enterprises regarding IT service adoption and overall efficiencies. (Dadhich, 2017; Dadhich et al., 2022; Kannan, 2021; Kiraz et al., 2020) discovered that professional business students in Malaysia are technologically prepared to assess their level of acceptance of new technologies. (Dadhich, Manish, Shalendra Singh Rao, Renu Sharma, 2021; Kumar Naresh, Dadhich Manish, 2014) discovered a positive correlation between technology readiness and self-service technology adoption in Taiwan.

(Dadhich, 2016; Kiraz et al., 2020) assessed final users' technology readiness by using virtual interfaces of websites to identify better contextual elements, site type, and online access methods, which could be beneficial to industry 5.0. Furthermore, (Kiss et al., 2019) calculated the TRI of customers in Turkey who prefer short-life-cycle products/services and rapidly diminishing technology for business sustainability and survival. Furthermore, (Shashank Kumar et al., 2021) have identified IT readiness as a critical success factor in adopting e-procurement by government enterprises.

2. RESEARCH METHODOLOGY

The present project is a theoretical modal based on extensive research that relied solely on secondary sources of information. The sources are books, journals, annual reports, white papers, and newspapers. The primary methodology used in this work is the study of literature.

3. OBJECTIVES OF THE STUDY

The research looks at numerous readiness indexes for Industry 5.0 promotion and development. Analyzing multiple readiness indices might help firms make better informed, and thus faster, decisions about which areas of Industry 5.0 to prioritize. The research must include that no

available readiness assessments for Industry 5.0 can indicate its impact on future industry growth when composing them.

4. AN OUTLINE OF THE READINESS INDEXES

The readiness assessments are based on the following methodologies, which involve gathering substantial data from the examined entities.

Table -1: Major Readiness Indices

Index Abbreviation	Index Name	Evaluating Authority	No. of Individual Indicators	No. of nations Evaluated
NRI	Networked Readiness Index	World Economic Forum	53	139
GII	Global Innovation Index	Cornell University, INSEAD, WIPO	81	127
GCI	Global Competitiveness Index	World Economic Forum	110 variables	141
OECD scoreboard	Science, industry, and technology Scoreboard	OECD	200	31
RBI	RB Industry 5.0 Readiness Index	Rolland Berger	6 dimensions	120

4.1 NRI (Networked Readiness Index)

The Networked Readiness Index assesses a country's ability to capitalize on ICT networks to increase competitiveness. It has become an important indicator of how governments use technology in a truly digital society (Dadhich, 2016; Mogale et al., 2020). This index's significance is based on a number of critical infrastructure facilities, procedural frameworks, and other elements that must be developed to reap the benefits of the digital revolution. The framework is made up of four primary sub-indices, ten subcategories, and 53 specific indicators spread across the different characteristics. The primary categories are as follows:

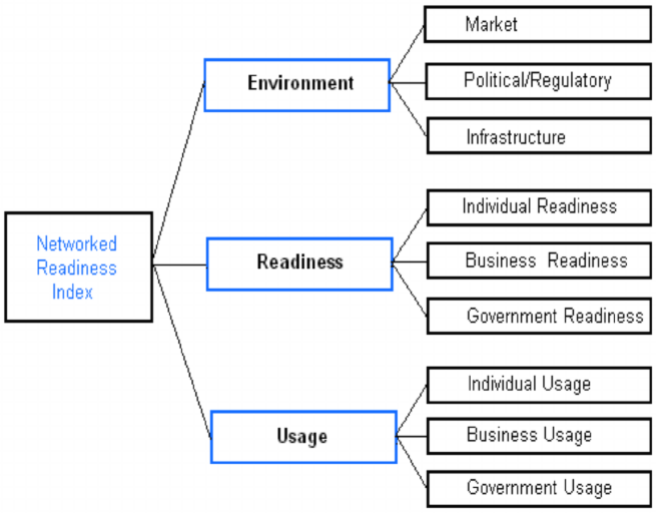
a. Environment Sub Index: Political and regulatory environment & Business and innovation environment

b. Readiness Sub Index: Infrastructure, Affordability, Skills

c. Usage Sub Index: Individual usage, Business usage, Government usage

d. Impact Sub Index: Economic impacts, social impacts

Table -2: Components of Network Readiness Index



The 2019 Network Readiness Index ranks 121 economies based on four pillars (technology, people, governance, and effect). Sweden leads the ranking this year, just ahead of Singapore in second and the Netherlands in third (Table 1). In reality, as evidenced by their overall results, the leading countries in the NRI have nothing in common. For example, the top five countries (including fourth-place Norway and fifth-place Switzerland) are separated by only a few points. Similarly, the top ten countries—Denmark, Finland, the US, Germany, and the UK—are all within 5 points of Sweden's highest score (Sartal et al., 2020).

India has made significant progress in political and regulatory environments and the economic and modernization environments. Inadequate digital infrastructure and a low-skilled population are significant roadblocks to ICT adoption. Several economies have also improved their performance quickly (Dadhich et al., 2020). As a result, India's rating dropped two from the previous year. The report cites areas for development, such as that 30% of Indians are illiterate and that youth are not enrolled in secondary education. Only 15% of people have access to the internet, and broadband is only available in high-end homes. India's overall development is hampered by a lack of basic infrastructure in rural and remote areas. The government launched the Digital India program to address the issue, enhance digital infrastructure, raise digital literacy, and equip residents with online governance services.

Further, the Global Innovation Index 2019 outlined the measures for 129 countries' innovation performance, with 80 indicators covering various topics such as political condition, education, infrastructure, and business sophistication. The GII 2019 also examines the future of medical innovation, examining how technical and non-technological medical innovation will transform the delivery of healthcare services around the world. It also looks at the significance and dynamics of medical innovation in shaping

the future of healthcare and a healthy economy (Birda, 2019; Dadhich, Purohit, et al., 2021)

Switzerland is the most advanced and innovative country in the world, according to the 2019 edition of the Global Innovation Index, followed by Sweden, the United States, and the Netherlands, among others, with regional leaders such as India, Chile, Israel, Singapore, Rwanda, Vietnam, and China dominating. India was ranked first in the Central and Southern Asia region (52nd). Because of its excellent logical distributions and colleges, India ranks second in the magnitude of advancement among middle-income countries. It maintains high levels in a few key indicators, for example, profitability growth and administration costs related to data and correspondence improvements. In terms of R&D spending, India ranks fifteenth among global organizations this year (Saurabh Kumar & Singh, 2021; Naresh Kumar, 2016).

4.2 Global Competitiveness Index (GCI)

This is one of three indices used to evaluate social pressure and resilience. The Global Competitiveness Index (GCI) is a World Economic Forum initiative aimed at better understanding all countries' economic foundations in order to assess their competitiveness in achieving long-term economic productivity, growth, and opulence. Instead of short-term and reactionary metrics, the index serves as an annual benchmark for policymakers to measure their success against the productivity standard. The 12 instruments are Infrastructure, Innovation Capacity, ICT Selection, Macroeconomic Reliability, Financial Framework, Product Showcase, Labor Market, Market Size, Health, Business Dynamism, and Institutions (Muoz-Pascual et al., 2019). India climbed eight places to 68th place in the ranking in 2019, up from 58th in 2018. Switzerland is ranked one, followed by the United States and Singapore. This index measures a country's capacity to advance globally, retain, and attract talent. In the Global Talent Competitive Index, India is ranked 68th, up from 80th last year, with Kazakhstan, India, and Sri Lanka occupying the top three slots in the Central and South Asia area. Furthermore, India's vocational and technical skill score is 76th, while its Mid-Level Skills level is 113th.

4.3 OECD panel

From 2009 to 2020, this Scoreboard contains information on small and medium-sized businesses that can obtain financing. Data from demand-side surveys were gathered for the country profiles, which included various indicators on debt funds, asset-based finance, equity, and recent public and private sector financing structure conditions to promote SME access to finance. Conversely, India is not a member of the OECD Scorecard (Mashelkar, 2018).

4.4 Roland Berger Readiness Index

This index is created using two types of indicators. To begin, industrial excellence is an important factor, including production process sophistication, automation, labour readiness, and innovation intensity. The second factor is sector openness, a new network, and Internet sophistication. These indicators are scored on a five-point scale to determine your readiness for Industry 5.0. All categories are evaluated using the averages of the indicator scores. Furthermore, the Confederation of Indian Industry seeks to create and maintain an environment favourable to the development of partnered industry, government, and civil society through consultation processes. It is a non-profit, industry-managed organization that is actively involved in India's growth.

5. CONCLUSION

The readiness indices of an organization resulted in increased accessibility to service providers, effective work allocation, improved process efficiency, and improved transparency. Experts have discovered that government institutions lag far behind the private sector's readiness. Possible causes include a lack of appropriate hardware and software resources, a scarcity of trained personnel, efficient training programmes to improve staff skills, and a lack of financial support from departments. As a result, it is critical to identify the criteria that determine an organization's readiness. Considering these factors, each government organization's readiness index must be developed to assist policymakers in ranking the organization's readiness to implement e-procurement. Several types of readiness scores are appropriate and effective for handling the qualitative and quantitative competency of the industry and its future advancement using a fuzzy multi-attribute ranking technique. Readiness models are used to assess the state of implementation of Industry 5.0 technologies. This enables the quantification and qualification of its readiness level, taking into account a variety of parameters. Monitoring the status of Industry 5.0 necessitates the use of readiness models. The ease and speed with which these emerging technologies can be used vary greatly. Certain businesses cannot incorporate Industry 5.0 into their existing business models, resulting in an inaccurate self-assessment of the level of preparedness. To accomplish this goal, it is critical to understand how businesses are addressing the challenges of digital transformation, what companies believe the enabling technologies for Industry 5.0 are, how far along Industry 5.0 is in its readiness, and how companies see the barriers to adoption of these technologies. The purpose of this article is to evaluate Readiness Indices for Adoption for Industry 5.0, which can be used by policymakers, administrators, and experts to develop a specific policy to achieve the overall goals.

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