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Community Readiness Towards Digitalization: A Comprehensive Review

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ABSTRACT

In today's rapidly evolving digital landscape, the readiness of communities to embrace and adapt to digitalization is of paramount importance. Despite the growing significance of digitalization, there is a noticeable dearth of comprehensive evaluations encompassing the diverse facets of community readiness. Variations in digital access, technological literacy, and policy frameworks across communities create disparities that require in-depth examination and strategic interventions. This systematic review seeks to comprehensively analyze the extent of community readiness towards digitalization, recognizing its crucial part in forming our society's socioeconomic fabric. Moreover, this review addresses this knowledge gap by thoroughly assessing community readiness towards digitalization, offering valuable insights for academia, policymakers, and community stakeholders. This systematic review adheres to the PRISMA technique, ensuring a rigorous and transparent approach to data synthesis. A comprehensive search was conducted across reputable databases, including SCOPUS and Web of Science (WoS), employing advanced search strategies to identify pertinent studies on community readiness towards digitalization. A comprehensive examination (n=28) of pertinent studies reveals three prominent themes in community readiness toward digitalization. These themes encompass the domains of (1) Digital Transformation (DX) in business and economy, (2) digital health and healthcare initiatives, and (3) digitalization in education and learning. The synthesis of these themes underscores the evolving landscape of digitalization and calls for targeted interventions to bolster digital readiness across these critical sectors.

Keywords:
Community readiness; digitalization; technology adoption; information and communication technology (ICT)

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1. Introduction

The 21st century has witnessed an unprecedented transformation of the global landscape, characterized by the pervasive influence of digitalization. As the world hurtles towards an increasingly interconnected and technology-driven future, the impact of digitalization is felt across all corners of society, reshaping economies, cultures, and the very fabric of human existence [1-5]. Southeast Asian nation with a burgeoning digital landscape, understanding the readiness of its diverse communities towards digitalization is of paramount importance [6]. This systematic review seeks to offer an evaluation that is comprehensive in nature of the state of digital readiness among communities, delving into the multifaceted factors that influence their adoption of digital technologies.

Digitalization holds the promise of driving economic growth, enhancing access to essential services, and fostering innovation [7,8]. However, its benefits are contingent upon the readiness and capacity of communities to engage with these technologies effectively. Urban centers, for instance, may exhibit distinct patterns of technological uptake compared to rural or remote areas [9,10]. Socioeconomic variables, including income levels and educational attainment, are anticipated to play pivotal roles in shaping these disparities [11,12].

Against this backdrop, this review systematically synthesizes a diverse body of research, employing a socio-ecological lens to scrutinize the intricate interplay of factors influencing digital readiness [13]. By encapsulating insights from a range of studies conducted across various regions and demographic segments, this review seeks to give a complex grasp of the communities' readiness toward digitalization. This knowledge, in turn, can inform evidence-based policies and interventions geared towards fostering a digital.

Furthermore, the review addresses the evolving nature of digital technologies and their impact on socio-cultural norms, communication patterns, and economic activities within communities. It examines how factors such as cultural attitudes toward technology, access to digital education, and the availability of digital infrastructure influence the level of digital preparedness among different segments of the population [14-18]. Through this endeavor, we aim to contribute not only to the academic discourse but also to the broader national dialogue on harnessing the full potential of digital technologies. This paper embarks on a journey through the myriad facets of digitalization, examining its global impact, tracing its evolutionary trajectory, and probing its opportunities and challenges. Within this dynamic and ever-evolving context, we seek to shed light on the transformative forces shaping our world in this digital age.

2. Literature Review

The COVID-19 pandemic has resulted in significant advancements in medical devices, vaccines, as well as computerized systems. Challenges include the readiness of AI-based diagnostic systems for clinical processes. Trends include the increased necessity for computerized systems and Precision Medicine digital tools [19]. The 4th Industrial Revolution led to the integration of augmented information into cyber-physical systems, transforming the information age. This led to a rethinking of processes and the development of new ones for sustainability, efficiency, as well as safety. The industry 4.0 (IR4.0) age, defined by the improvement made in the Information and Communication Technologies (ICT) industry, modeling and solving algorithms, as well as mechatronics, has improved industries like manufacturing, logistics, and agriculture. The rise of crowdsourcing and the global pandemic have also impacted society, transforming the capabilities and readiness of individuals in the Society 5.0 (S5) phase [20].

In the following 30 years, the global population is anticipated to age quickly, and older persons are adopting digital technologies at a faster rate. On the other hand, there has not been much study on how technology might help elderly people in times of need. Coastal older folks' focus groups highlighted a need for tools to improve community resilience and how putting greater emphasis on community resilience can lead to more effective crisis technology [21]. A methodical approach to online learning known as the Fully Online Learning Community (FOLC) paradigm emphasizes social presence, cognitive presence, as well as collaborative learning. It promotes the development of active online learning communities and places an emphasis on 21st-century skills, including social negotiation as well as complicated problem-solving. The model has been extensively studied for its efficacy [22]. Another study explores the readiness of Micro, Small, and Medium Enterprises (MSMEs) to adapt to the Industrial Revolution 4.0 and offers models for improving competitiveness. Data was collected through questionnaires, interviews, and literature. Results show that innovation by MSMEs can change market conditions, increasing competitiveness. The study also discovers that government involvement in MSME development is influenced by facilities and infrastructure, innovation, and meeting needs related to these factors in North Sumatra, Indonesia [23]. In another study discovered the contribution of technological preparedness to closing the digital gap, highlighting advancements in networks, information security, and communication. It also explores the implications of e-learning when the pandemic happened. Here, a sample of 464 academic staff and students from Northern Technical University participated. The findings highlight the need for increased financial support, emphasis on technological and educational cultural levels, and multilingual support for effective e-learning [24].

In 2021, Mashau *et al.,* [25] presented a study describing their findings in which smart cities use digital infrastructure and technologies to collect data for efficient resource management and better living standards. They can also address education challenges in continuous urbanization. However, small and rural municipalities struggle with resource management, leading to slow implementation. By offering a thorough framework to evaluate their readiness to implement smart cities, this particular research seeks to close this gap. The framework can help identify necessary components and stakeholders for smart city initiatives, providing a foundation for future empirical research. As highlighted by Tosida *et al.,* [26], Indonesia's government is prioritizing rural poverty reduction through a smart village ecosystem. Here, this particular study wanted to develop a Partial Least Squares-Structural Equation Model (PLS-SEM) citizen science prospect model for a smart village. As per entrepreneurship, community support, empowerment, citizen character, innovation, as well as the smart economy, the model assesses how ready villages are to create a smart economy. With a Goodness of Fit (GoF) score of 0.488, the model can clarify empirical data and exhibits strong predictive relevance (87.2%). The village's smart economy is driven by the involvement of the family and collaborations with the commercial sector, local government, as well as communities. The above finding is consistent with the study by Phan and Dinh [27]. The author examines the Digital Transformation (DX) process in Vietnam, a developing country facing high competition. Nearly 90% of companies increase DX awareness, with 40% having budgets for consulting and 20% having no budget. DX readiness is highest in industries with a direct supply of both services and goods. The study investigates factors influencing the social economy in community enterprises in nations that are developing. Data from 619 participants in Thailand showed demographic factors like technological readiness, residence, age, as well as online communication platforms (blogs, Instagram, Facebook, Pinterest) could influence the economy. The findings suggest encouraging career opportunities by promoting businesses that support community and social activities and including diverse ages in participation [28].

3. Material and methods

3.1. Identification

There are three fundamental stages to the systematic review process that were used to choose various pertinent research pertaining to this work. The first stage consists of choosing keywords and looking for interconnected and related terms utilizing dictionaries, thesaurus, encyclopedias, as well as prior research. The selection of all relevant terms is then completed, and search strings on the Scopus and Web of Science (WOS) databases (refer to Table 1) have been generated. The present investigation managed to obtain 460 papers from those two databases during the first stage pertaining to the process of the systematic review.

Table 1
The search string

Scopus	TITLE-ABS-KEY (community AND readiness AND digital*) AND (LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2023)) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (PUBSTAGE, "final"))
WoS	(community AND readiness AND digital*) (Topic) and 2021 or 2022 or 2023 (Publication Years) and Article (Document Types) and English (Languages)

**Accessed date: 16 September 2023*

3.2. Screening

In the second step, 326 articles were evaluated according to experts who developed various inclusion and exclusion criteria. Considering that literature (research articles) refers to the main source of helpful instruction, it was chosen as the first criterion to be used. In addition to the most recent research, it also contains books, book series, chapters, systematic reviews, reviews, meta-synthesis, and meta-analyses. Additionally, the review incorporated publications that were written in the English language. It is critical to remember that the plan was developed for the preceding three-year period (2021-2023). The screening process excluded duplicate papers. Consequently, 52 papers were disqualified in the study's preliminary phase.

3.3. Eligibility

The third step of the process, the eligibility phase, consists of 82 prepared items in total. During this stage, a thorough examination of all article titles and crucial content was conducted to ensure their alignment with the inclusion criteria and the current study's objectives. Out of these, 54 were excluded for reasons such as being outside the scope of the study, having titles unrelated to the study's objectives, or lacking relevant abstracts. Consequently, as of the current moment, there are 28 articles remaining for review, as detailed in Table 2.

Table 2
The selection criterion is searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Timeline	2021 – 2023	< 2021
Literature type	Journal (article)	Conference, review, book
Publication stage	Final	In Press

3.4. Data Abstraction and Analysis

Multiple research designs (qualitative, quantitative as well as mixed methodologies) were analyzed and synthesized in this particular study using an integrative analysis as one of the examination procedures. The creation of relevant topics and subtopics was the main objective pertaining to the expert study. Collecting data was the first part of the theme's creation. The authors carefully read through 28 articles in search of claims or information addressing the difficulties brought up by the current investigation. Subsequently, the authors and specialists assess the community's readiness for digitization and establish and create useful groups. The three key elements that came out of the approach are DX in business and economy, digital health and healthcare initiatives, and digitalization in education and learning. From this point on, the authors resumed each determined subject and any related notions, themes, or ideas. Moreover, the corresponding author collaborated with other coauthors to establish topics for this study, relying on the findings. In this case, a log was kept during the data analysis process to document any opinions, analyses, or other ideas applicable when interpreting the data.

The authors meticulously evaluated the outcomes to identify any inconsistencies in the theme design procedure. To be clear, if there are any contradictions between their issues, the authors address them. In order to achieve uniformity, the developed themes were finally adjusted. Two specialists, one focusing on digitalization and technology and the other on management, conducted the assessments to confirm the authenticity of the concerns. Through establishing domain validity, the expert review step guarantees that each sub-theme is clear, important, and sufficient. According to the author's discretion, changes have been made in response to expert advice and remarks. The stated steps are illustrated in the PRISMA Framework given in Figure 1.

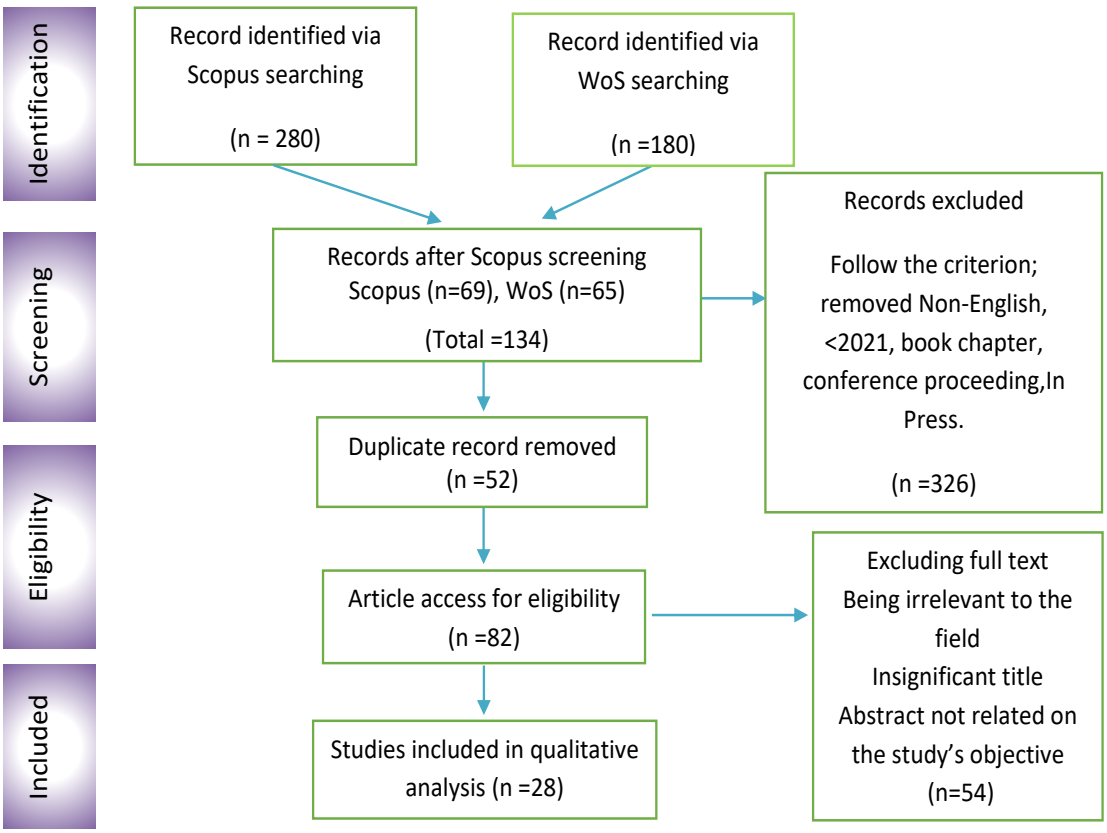

Fig. 1. Flow diagram of the proposed searching study [29]

4. Result and Findings

From the finalized search, three themes were discovered, namely DX in business and economy, digital health and healthcare initiatives, and digitalization in education and learning. Thus, this section will explain the findings from previous research and will be divided into three tables with different themes. The research article's findings based on the proposed search criterion are shown in Table 3 – Table 5.

Table 3
Theme 1 - Digital transformation in business and economy

Authors	Title	Source title	Methodology	Results & findings
Phan and Dinh [27]	Digital Transformation of Business Community In Globalization: An Empirical Study In A Typical Developing Country	Eastern-European Journal of Enterprise Technologies	The research investigates how State-regulated enterprises undergo DX, using a positivist approach with both quantitative and qualitative indicators, including standardized assessments and contrasting outcomes of excellence and inadequacy.	Nearly 90% of Vietnamese businesses aim to implement DX, only 40% have the financial resources for consulting and solutions, and about 20% lack any budget for this process. Industries supplying goods and services are most prepared for DX, likely due to factors like a tech-savvy customer base and supportive State policies.
Kalybekova *et al.,* [30]	Digital economy within the eurasian economic union: Current state and development prospects	Regional Science Inquiry	This study focuses on analyzing the DX in the socioeconomic aspect of Eurasian Economic Union (EAEU) countries, assessing their readiness and examining theoretical approaches, perspectives, trends, difficulties, and prospects in this process.	The future research will focus on analyzing DX trends in EAEU countries, considering industrial development variations and their alignment with global transition trends, aiming to provide practical insights into the main paths and challenges of this progress in these nations.
Kini *et al.,* [31]	Modeling the impact of digital readiness in recruiting and sustaining underrepresented groups: Data from the All of Us research program	Frontiers in Digital Health	This program seeks to enhance healthcare by establishing a diverse biomedical research resource in the United States. This is especially done in Underrepresented in Biomedical Research (UBR) groups. The investigation assesses	The study found that factors like lower age, higher education, being female, and having a higher income were associated with greater digital readiness. Surprisingly, factors like race, living in a rural area, and

			how digital readiness, which was determined by access to internet-capable devices and participants' comfort using them, influenced the recruitment and retention of 2,791 FQHC participants in the program before the pandemic.	sexual orientation were not significant indicators. Additionally, when participants were digitally ready, they were 27% more likely to complete program activities, emphasizing the need to improve connectivity and support for Underrepresented in Biomedical Research (UBR) participants facing digital barriers.
Jangjarat *et al.,* [28]	The social economy in the digital era: A perspective on community enterprises in a developing economy	Journal of Social Economics Research	This particular research utilized a quantitative method to examine factors impacting the social economy pertaining to the community enterprise sector of nations that are still developing. Data was gathered from 619 participants in Thailand through an online questionnaire using accidental sampling. The collected data was then analyzed using multiple regression analysis.	The study discovered that demographic factors and the use of online platforms like Instagram, Pinterest, Facebook, and blogs can influence the social economy. To boost career prospects, the study suggests supporting interest-based groups in creating businesses that foster community and social engagement and involving individuals of various age groups to increase participation in these activities.
Tosida *et al.,* [26]	Investigating the effect of technology-based village development towards smart economy: An application of variance-based structural equation modeling	International Journal of Data and Network Science	This research aims to create a model for citizen science involvement in a smart economy within a smart village ecosystem. The approach employed in the research is SEM-PLS. Consequently, the research introduces a unique method for assessing villagers' preparedness to establish a smart economy in this context, focusing on the level of community support.	The citizen science model demonstrated high predictive accuracy at 87.2%, and it effectively explained empirical data possessing a 0.488 value. The research additionally emphasized that factors like ICT proficiency, access to education, R&D facilitation, and motivation for smart villages are influenced by family engagement. Furthermore, collaborating with the commercial sector, local government, as

				well as communities is essential to the village's smart economy.
Alcácer *et al.,* [32]	Tracking the maturity of industry 4.0: the perspective of a real scenario	International Journal of Advanced Manufacturing Technology	This particular research seeks to examine the readiness of companies for I4 and examine their perceptions regarding barriers to its adoption in relation to their preparedness level. Additionally, the paper introduces new barriers for consideration within the academic community. The study gathered empirical data from 15 companies in a significant industrial cluster in Portugal.	The type of products or services a company provides can hinder its readiness for I4. The most significant barriers identified include a lack of clarity regarding economic benefits, an absence of standards (compatibility and interoperability), as well as IT infrastructure that are underdeveloped.
Kolade *et al.,* [33]	Technology acceptance and readiness of stakeholders for transitioning to a circular plastic economy in Africa	Technological Forecasting and Social Change	This study looks at the impact pertaining to digital innovators and how the public in Africa has reacted to the developments of digital innovators. The study's findings are founded on data gathered from four discussion groups and surveys with respect to 33 digital innovators, which also include 1475 community members in 20 low- and middle-income populations across five African nations.	The investigation highlights that digital innovators in the circular plastic economy are driven and positive but face limitations due to institutional, infrastructural, as well as socio-cultural factors. Furthermore, a survey reveals that being familiar with technology and its perceived ease of use is beneficial in adopting circular plastic innovations, with the latter also mitigating adoption barriers, emphasizing the requirement for knowledgeable, driven innovators as well as cooperative initiatives to move Africa into a circular plastic economy.
Podgorny and Volokhova [34]	Impact of digital economy on the digital habituses of the Russian population; [Вплив цифрової економіки на цифрові габітуси	Economic Annals-XXI	In analyzing digitalization results, it is crucial to consider statistical and financial aspects and the sociological component. This involves assessing how the population in specific regions and	The article provides insights into how digital behavior patterns shape attitudes toward adopting and advancing digital technologies. It reveals

	російського населення]		countries comprehend the ongoing processes and initiatives, their attitudes towards them, and their preparedness for the changes brought about by the digital economy.	that around 25% of the population possess habits that hinder the progress of new digital technologies, influencing factors like attitudes towards technology development, digital literacy, information protection, self-assessment of proficiency, and user expertise.

Table 4
Theme 2 - Digital health and healthcare initiatives

Authors	Title	Source title	Methodology	Results & findings
Alknawy *et al.,* [35]	Digital public health leadership in the global fight for health security	BMJ Global Health	As stated in the Riyadh Declaration on Digital Health, the COVID-19 pandemic highlighted the necessity for robust data governance and digital health infrastructure at both the national and international levels. This urges collaborative efforts in establishing infrastructure for sharing evidence-based practices and reliable data to enhance health security worldwide.	The Riyadh Declaration outlines nine key recommendations concerning data as well as digital health, providing a comprehensive guide for their implementation to address future health crises. Serving as a vital resource, it supports stakeholders in digital health and disaster preparedness, facilitating the creation of robust digital infrastructure and protocols guided by effective public health leadership.
Koh *et al.,* [36]	Digital health promotion: promise and peril	Health Promotion International	This article explores the present uses of Digital Health Promotion (DHP) and examines its possible advantages and obstacles. It also considers how varying cultural norms, governance structures, and levels of digital preparedness worldwide will influence the adoption of DHP in distinct societies.	DHP provides advantages such as enhanced access to tailored health information and cost-effective encouragement for healthier lifestyles. Nevertheless, it faces hurdles related to privacy, responsible data handling, defining ethical nudges, and ensuring inclusivity to prevent widening social disparities, necessitating

				concerted efforts at both individual and systemic levels for successful implementation.
Jonsson *et al.,* [37]	Strengthening Community Health Systems Through Novel eHealth Initiatives? Commencing a Realist Study of the Virtual Health Rooms in Rural Northern Sweden	International Journal of Health Policy and Management	This study investigates how Virtual Health Rooms (VHRs) can enhance community health systems and access to person-centered care, particularly benefiting elderly individuals in rural areas, employing realist evaluation methodology with key stakeholders to establish an initial program theory through thematic analysis and an ICAMO framework.	The study proposes that a new eHealth initiative, centered on customized technology in a community facility, could improve access to person-centered care as well as enhance rural community health systems through specific mechanisms, operating at both individual and collective levels within supportive societal contexts and organizational readiness. The initial program theory outlines its expected functioning and prerequisites for success, highlighting the need for further validation through realist evaluation to determine its effectiveness, target population, conditions, and underlying reasons.
Syundyukov *et al.,* [38]	Data-driven decision making and proactive citizen–scientist communication: A cross-sectional study on covid-19 vaccination adherence	Vaccines	The goal is to create a digital platform facilitating communication between scientists as well as the public. This platform will be utilized for a preliminary study investigating factors linked to vaccination readiness.	In Latvia, a digital platform with dynamic consent management was utilized to conduct a six-week exploratory study involving 467 participants, assessing demographics, personal factors, COVID-19-related behaviors, as well as vaccination motives. Furthermore, logistic regression models, adjusting for various factors, revealed that anxiety, feelings of social responsibility, as well as trust in pharmaceutical

				companies, were associated with vaccination readiness, underscoring the potential of digital platforms for data-driven discussions on this topic due to their ability to engage a substantial number of participants efficiently.
Fortuna *et al.,* [39]	"As soon as I start trusting human beings, they disappoint me, and now I am going to get on an app that someone could hack. I really do not want to take that chance": barriers and facilitators to digital peer support implementation into community mental health centers	Frontiers in Digital Health	By means of semi-structured interviews conducted with 27 participants involving individuals experiencing serious mental illness and certified peer support specialists, this investigation explores elements that act as barriers and facilitators of establishing digital peer support in urban community mental health centers. Responses were categorized employing the Consolidated Framework for Implementation Science Research (CFIR) constructs.	The study pinpointed nine barriers and two facilitators in establishing digital peer support in community mental health centers, categorized into intervention, inner setting, and individual characteristics. These findings provide a groundwork for customizing digital peer support technology to facilitate its integration, potentially improving its adoption among individuals experiencing serious mental illness as well as certified peer support specialists in these settings.
Zhao *et al.,* [40]	Facilitators of and Barriers to Integrating Digital Mental Health into County Mental Health Services: Qualitative Interview Analyses	JMIR Formative Research	This research utilized the Exploration, Preparation, Implementation, Sustainment (EPIS) framework to examine barriers, facilitators, and best practices for implementing Digital Mental Health Interventions (DMHIs) in identical organizational settings, conducting interviews with stakeholders from six county behavioral health departments located in California to investigate how DMHIs might be integrated into county mental health services. This was done by employing a semi-structured interview guide based on	The study identified three critical readiness themes (individual, innovation, and organizational/system) for implementing DMHIs in line with the EPIS framework. These themes encompass factors such as technology access and literacy at the individual level, the accessibility and suitability of DMHIs at the innovation level, and provider and infrastructure support at the organizational/system level, emphasizing the

			expert input and employing qualitative analysis using the EPIS framework as a reference.	need for comprehensive readiness across these dimensions to ensure successful DMHI implementation.
van Kessel *et al.,* [41]	Digital Health Paradox: International Policy Perspectives to Address Increased Health Inequalities for People Living with Disabilities	Journal of Medical Internet Research	The article conducts a scoping review, examining the digital technologies benefits, particularly for individuals having disabilities within the autism community, and assesses policies in six countries (United States, Estonia, the United Kingdom, Canada, Sweden, as well as Australia) to gauge their inclusivity in shaping digital health systems.	The authors stress the importance of prioritizing health equity within digital health ecosystems to avoid widening existing disparities, underscoring the need for a nuanced assessment of digital health literacy to gauge readiness for adopting innovations. They further advocate for placing individuals with disabilities at the core of digital health regulations and innovations to guarantee inclusivity and prevent any potential forms of exclusion.

Table 5
Theme 3 - Digitalization in education and learning

Authors	Title	Source title	Methodology	Results & findings
Hertina *et al.,* [42]	Technological Education and Its Influence on Digital Economic Readiness during the COVID-19 Pandemic	Review of International Geographical Education Online	The study examines how technological education levels influence the digital economy preparedness of community-level Batik SMEs in 2020, utilizing a quantitative approach with 65 respondents from Masaran, Sragen, Central Java, who utilized social media for online product marketing, and employing both a questionnaire and analytical methods including descriptive analysis and multiple linear regression for data analysis.	The descriptive analysis reveals that a majority of Batik SME entrepreneurs have a low level of technological education. Regression results indicate that technological education positively influences community readiness for the 2020 digital economy. Controlling gender, educational background, and internet access, higher technological education correlates with greater readiness to take part in the digital economy. This emphasizes how

				crucial digital skills are in the modern world. The implication is that the government can strategically enhance the community's IT capabilities by offering intensive training, particularly to Batik business groups, to enhance their competitiveness in the digital market.
Sait and Anshari [43]	Assessing Brunei Darussalam Public and Private Sector Readiness Towards Big Data Application	International Journal of Asian Business and Information Management	This study aims to evaluate Brunei Darussalam's preparedness for adopting and establishing big data technologies in both its private as well as public sectors. For this assessment, it employs the Social, Technological, Environmental, and Policy (STEP) framework.	The investigation demonstrates that the population in Brunei Darussalam is digitally literate and uses smart devices with widespread internet connectivity provided by local telecom companies. The government has initiated various DX projects, including the 5G implementation as well as a digital economy master plan. Although a national digital data privacy policy is currently absent, the successful application of big data in the public sector, such as the BruHealth Application for COVID-19 containment, demonstrates its potential. Future implementation of such policy will provide openings for local commercial sectors to use big data technologies in their corporate plans.
Ananto and Ningsih [44]	An examination of Indonesian teachers' and students' perception and level of digital citizenship	Heliyon	This study attempts to look into how teachers and students in Indonesia perceive and practice digital citizenship. A method of non-probability sampling is used in the investigation.	There were 157 participants in total, comprising 39 teachers and 118 students who took part in the survey, with a mix of vocational and non-vocational secondary school backgrounds.

				Following a screening process, Rasch modeling was employed for the quantitative analysis of 98 datasets. According to the findings, students and teachers both illustrated a high-level pertaining to digital citizenship and held positive views on it. However, they reported fewer online political activities and were hesitant to discuss social as well as political issues in online communities. Age was discovered to be a significant factor influencing participants' political activity despite similar levels of digital citizenship. The study offers recommendations based on these findings.
Mudure-Iacob [45]	Enhancing Autonomous Language Learning in Digital Environments-Paving the Way for Self-Learning via Escape Rooms and Communities of Practice	Astra Salvensis	In order to boost learner engagement and facilitate productive digital interactions, integrating gamified learning experiences is essential, enabling small communities of practice to employ peer assessment for self-improvement in the digital English for Specific Purposes (ESP) classroom, with teacher guidance in task selection, collaborative practice, and comprehensive multimodal training playing a pivotal role in revitalizing the pedagogical framework.	To meet the evolving learning requirements of digital-native learners, personalized employability skills are considered essential. These learners are keenly interested in and ready to engage with various digital tools. ESP teachers can leverage this readiness and utilize digital apps effectively by promoting learner autonomy and extending language learning beyond the confines of traditional classroom instruction.
Ahmad *et al.,* [46]	Driving digital inclusivity through CSR: An organisational analysis of CSR development in the	SEARCH Journal of Media and Communication Research	This research examines the role of Corporate Social Responsibility (CSR) in advancing digital inclusivity, particularly in rural Sarawak, through local organizations	This article provides fresh perspectives on Carroll's (1991) four-part framework for justifying CSR, highlighting the

	Sarawak Digital Economy environment		involved in SDE implementation. The study employs a case study approach, involving interviews with key CSR stakeholders and analysis of official documents to gain insights into CSR development and implementation within the investigated organization.	weightage attributed to each component as perceived by the investigated organization. The study also highlights how the organization incorporates contextual factors in its CSR strategy, aligning with the demands and expectations set by the Sarawak Digital Economy (SDE) environment.
Faruk and Bulent [47]	Are we ready for the new normal in e-business education? Sentiment analysis of learners' opinions on moocs; [ГОТОВЫ ЛИ МЫ К МОДЕЛИ НОВОЙ НОРМАЛЬНОСТИ В ЭЛЕКТРОННОМ БИЗНЕС-ОБРАЗОВАНИИ? СЕНТИМЕНТАНА ЛИЗ МНЕНИЯ ОБУЧАЮЩИХСЯ О МООК]	Obrazovanie i Nauka	This research evaluates society's readiness and attitude towards Massive Open Online Courses (MOOCs) and distance learning, highlighting their increasing significance for diverse educational institutions and emphasizing the imperative for curricular adjustments, especially in high-demand e-business courses offered on MOOC platforms, with a particular focus on Turkish public sentiment and perceptions towards MOOCs through sentiment analysis on the platform Eksi Sozluk.	The results show that 52% of respondents had favorable opinions regarding distance education and MOOCs, 29% had neutral attitudes, as well as 18% had negative attitudes, indicating an overall positive perception of these models in Turkey. This research underscores the importance of MOOCs, particularly in e-business education when the COVID-19 pandemic happened and in the evolving educational landscape, highlighting their role in providing practical skills and addressing industry needs.
Kusmiarto *et al.,* [48]	Digital transformation of land services in indonesia: A readiness assessment	Land	By employing a Digital Governance Assessment Framework (DGRA) tailored to the land service sector, nine core indicators from the toolkit, direct observations, in-depth interviews, desk studies, as well as a quality assessment of land registration data at the Land Office of Yogyakarta City, this paper assesses the state of preparedness of a land office for DX.	The quality evaluation of the land registration data revealed flaws in integrity, consistency, accuracy, conformity, as well as completeness. Even though sections like User-Centered Design, Leadership and Governance, as well as Public Administration Reforms and Change Management received relatively higher scores (≥2.0),

				indicating areas of strength, with Legislation and Regulation (1.4), Technology Infrastructure (1.7), as well as Data Infrastructure, Strategies, and Governance (1.8) the research indicates that the land office's readiness for DX, especially with regard to Cyber Security, Privacy, and Resilience, require significant improvement (score of 1.0).
Mohammed and Al-Malah [49]	The Role of Electronic Reading in Reducing the Digital Divide and Its Implications for E-Learning	Journal of System and Management Sciences	This study explores how technology readiness, encompassing factors like network capabilities, information security, communication systems, devices, specialized skills, and organizational strategies, can contribute to narrowing the digital divide, particularly in the context of e-learning during the ongoing pandemic, involving 464 participants from the Northern Technical University community with expertise in modern technologies, and employing statistical analysis with SPSS v26 and Amos confirmatory factor system to evaluate the ethical implications and correlation of electronic readiness in reducing the digital divide in e-learning.	This study examines the crucial role of technology readiness in reducing the digital divide, particularly when it comes to e-learning contexts when the COVID-19 pandemic occurred. The outcomes emphasized how important it is to provide financial support, enhance technological and educational cultural proficiency, and offer multilingual support to ensure successful e-learning experiences.
Deja *et al.,* [50]	Digital transformation readiness: perspectives on academia and library outcomes in information literacy	Journal of Academic Librarianship	This study uses CBSEM to evaluate faculty readiness for social challenges in academia due to DX, particularly emphasizing information and digital literacy in academic librarianship. It explores how empowerment among academics influences information culture and management approaches. It	The study highlights the pivotal role of information literacy in empowering academics, leading to a proactive information culture and enhancing their ability to yield positive outcomes through effective information use. The findings

			also assesses how factors like information use and management impact a university's institutional readiness for DX, especially in governance.	underscore the substantial impact of academic libraries in driving DXs within universities by influencing information literacy outcomes.
Zheng *et al.,* [51]	Online High School Community Health Worker Curriculum: Key Strategies of Transforming, Engagement, and Implementation	Frontiers in Public Health	The paper presents a research study focusing on the critical processes and strategies involved in transitioning the face-to-face High School Community Health Worker Curriculum (HSCHW) to an online format. The project team utilized a mixed-method approach, analyzing data from 265 students along with performing focused-group online surveys as well as interviews involving 17 high school students. The study aims to identify key transformation and engagement strategies and examine the online curriculum's outcomes.	The study underscores how important it is to incorporate instructional design processes in the online HSCHW curriculum. It highlights "interestingness" as a key factor in engaging high school students with complex CHW skills via digital content and activities. Additionally, it emphasizes the need for integration with community resources, local schools, and facilitator training, as well as ongoing coaching support for successful implementation, ultimately enhancing the capacity of community health workers and promoting health equity among young adults.
Doukani *et al.,* [52]	Organizational readiness for implementing an internet-based cognitive behavioral therapy intervention for depression across community mental health services in Albania and Kosovo: Directed qualitative content analysis	JMIR Formative Research	The study qualitatively assessed the organizational readiness to utilize internet-based Cognitive Behavioral Therapy (iCBT) for depression in Community Mental Health Centers (CMHCs) in Albania and Kosovo. Data was collected from various healthcare professionals associated with CMHCs in Albania and Kosovo, with 69 participants in six focus groups, the majority of whom were nurses, having an average age of 41.3 years, as part of a larger multinational trial on iCBT implementation.	The analysis identified several factors influencing the execution of digital CBT interventions for depression in community mental health settings, with barriers including limited clinical suitability, stigma influencing help-seeking, resource constraints, and technological limitations. On the positive side, participants expressed interest and capacity

				for iCBT training, viewing it as an innovative approach that could enhance access to mental health services and reduce stigma, suggesting the need for initiatives like public awareness campaigns, service-level adjustments, and focused clinical training to address identified barriers.
Pandit and Agrawal [53]	Exploring Challenges of Online Education in COVID Times	FIIB Business Review	The study investigates the multifaceted aspects of online teaching and its influence, emphasizing the viewpoints of education stakeholders, including faculty, students, and academic leaders. It relies on observations, practical measures implemented or needed in Indian higher education institutions, and a content analysis of primary and secondary data supplemented by pertinent literature.	The paper highlights crucial elements for creating a successful online teaching environment, including strong academic leadership, proficiency in digital tools, faculty training, and active student engagement. It emphasizes the need for long-term planning, advocating for blended teaching strategies, and investment in resources to support effective learning.
Okfalisa *et al.,* [54]	Quadruple Helix Engagement: Reviews on Syariah Fintech Based SMEs Digitalization Readiness	Indonesian Journal of Electrical Engineering and Informatics	The paper reviews 110 relevant papers published between 2003-2021, sourced from Scopus journals and conference proceedings. Utilizing the Atlas.Ti 9 Software, the analysis was carried out with a focus on particular inclusion and exclusion criteria.	The literature review revealed a gap in research concerning the assessment of Quadruple Helix Engagement for Syariah Fintech-driven SMEs' digitalization readiness. Consequently, there is a need to develop a new recommendation centered on evaluating SMEs' digital readiness, specifically tailored for Syariah fintech, to promote the appropriate use of these products among SMEs.

5. Discussion and Conclusion

The study underscores that while a significant portion of Vietnamese businesses are aware of and inclined towards DX, financial limitations pose a notable obstacle, with only 40% having resources for DX consulting and approximately 20% lacking any budget. Industries involved in goods and services exhibit the highest DX readiness, but concerns persist regarding data security, technology costs, and resistance to change. Additionally, the research suggests that demographics like age, education, gender, and income influence digital readiness, while factors such as race, rural residence, and sexual orientation do not significantly impact it, and highlights the importance of collaboration for successful transitions to a smart village economy and adopting circular plastic innovation. The shift in the industry towards digital is shown in Figure 2 and Figure 3.

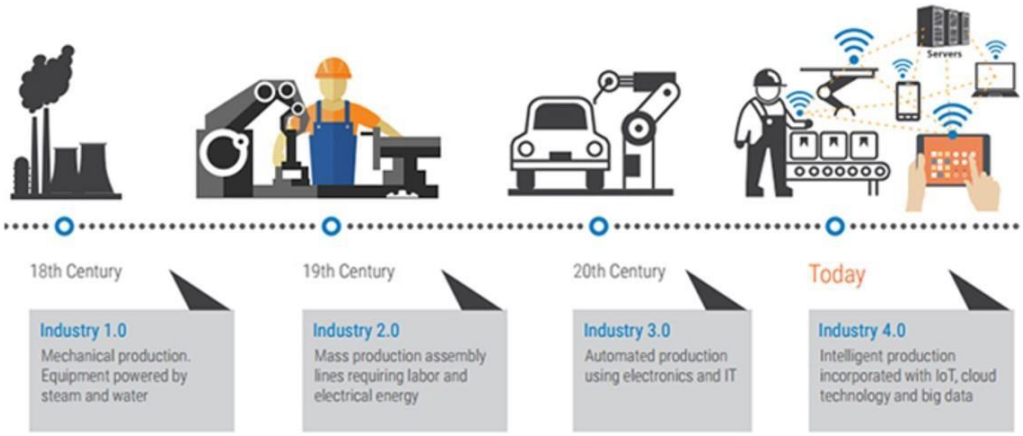

Fig. 2. Industrial progress from a historical viewpoint [32]

Fig. 3. Ecological system view of enabling digital health promotion [36]

The statements highlight various aspects of digital readiness and literacy in different contexts. They cover topics such as the importance of technological education for community readiness in the digital economy, the digital literacy of populations in specific regions, the role of education in meeting the needs of digitally native learners, and the significance of technology and information literacy in reducing digital disparities. Additionally, the statements address the potential of online platforms for education and mental health services, as well as the importance of factors like leadership and collaboration in creating effective online teaching environments. Lastly, there is an emphasis on the need for tailored assessments of digital readiness for specific industries, such as Syariah fintech for SMEs.

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