

Performance Measurement of Digitalisation Strategies by 21st Century Businesses: An Empirical Study

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Abstract

The current business scenario is a buzz with the concept of digitalization, influence companies to undergo quick transformations. However, it is essential to understand that every business progresses at its own pace and yield varied outcomes. The focus of technological transformation must revolve around optimization of operational processes, enrichment of customer experiences, and reshaping business models. Effective business transformation requires strong leadership from management. Digitalization plays an essential role in enhancement of performance of Indian businesses and overcoming financial difficulties as it offers alternate options of financing. The increased convenience to alternate finance has significantly elevated the operational performance, profitability, and productivity of SMEs in India. It's vital to note that digitalizing a business doesn't mean creating an entirely new entity. Rather, it involves remodelling present business to leverage present assets in novel ways. Companies worldwide aspire to invest in Digital India, recognizing it as a growth opportunity in the 21st century. A sample of 219 respondents was collected from different business sectors.

Keywords: Digitalization, digital technologies, SMEs, MSMEs, e-commerce

Introduction

Digitalization has fundamentally transformed the business landscape and have generated a considerable excitement and accompanying in a radical shift in operational paradigms. This phenomenon has not just created a buzz but has also substantially transformed the entire lifecycle of business starting from obtaining raw material to manufacturing and eventually delivering it for consumption. Business organizations are enthusiastically implementing this revolution, and have started recognizing its innumerable benefits. It includes rising sales and profitability, expanding market reach, cost-effective brand building, speedy feedback loops facilitating agile adaptations on the basis of customer preferences, enhanced environmental analysis for informed decision-making, and an overall increase in customer satisfaction, coupled with priceless understandings about customer behaviour (Arora & Rathi, 2019). Implementation of digital technology and

establishing an online presence offers substantial opportunities for small and medium-sized enterprises (SMEs) to expand and enhance their revenue streams. Moreover, it provides SMEs with operational flexibility in terms of timing, location, and delivery. Digitalization not only brings opportunities but also serves as a well-defined strategy that addresses emerging challenges, and ensures business survival, and enhancing competitiveness in the evolving landscape of business advancements. Prioritizing innovative developments in digital MSMEs becomes crucial for the post-pandemic digital economic ecosystem to function effectively. In response to the rapidly changing nature of technology, MSMEs must integrate technological innovation and adaptability into their business practices. The digitization of MSMEs in India can be achieved through collaborative efforts on digital platforms involving the government, the Ministry of MSME, Business Development Service, microfinance, and various stakeholders (Singh, Baral, & Maurya, 2023).

The fundamental concept behind digitalization is leveraging Information and Communication Technology (ICT) to access global resources, benefiting society while addressing the contemporary imperative of environmental sustainability. Many organizations are actively involved in digitizing their materials, recognizing the permanent worth of these possessions for purpose of learning. Additionally, being digital improves global prominence of organizations, allowing users worldwide to access and utilize resources remotely. In the context of Indian business, the motivation for digitalization primarily stems from the rapidly evolving digital landscape shaped by consumer behaviour (Singh, 2017). The increasing occurrence of digitization has become an integral part of everyday life and is expected to become more widespread in future. At present, many processes in business enterprise are done manually, and are ineffective, also lack scalability. This underscores the need for technological advancement to revolutionize and foster growth in the “Micro, Small, and Medium Enterprises” segment, particularly in category of nano and micro enterprise. A well-incorporated digital ecosystem is considered best for establishing connections and driving transformation across various aspects, including entrepreneur identification, assessing creditworthiness, delivering schemes, accessing markets, determining the right mix of skills for different stages, and facilitating granular and cost-effective data collection in the sector. Recently, digital environment for businesses has gone through substantial changes, with several emerging elements poised to shape a robust digital ecosystem (Buteau, 2021). In a broad sense, digitization includes the transformation of analogy information into its digital counterpart. This conversion enhances operational efficiency in business by leveraging digitized data and information. While digitalization represents a significant advancement for the industry and stakeholders, its full potential has yet to be realized. The tourism sector, in particular, has not fully harnessed the benefits of digitalization, leading to certain challenges in its implementation. Various obstacles hinder the industry's progress in embracing digital transformation (Kumar & Shekhar, 2020).

Literature Review

Kala & Soundarya (2018) found that in our modern digital environment, individuals are now possessing unprecedented opportunities to positively transform their lives—a reality that seemed unimaginable just a few years ago. This transformative era is the result of numerous innovations and technological advancements. Nations worldwide are keen on achieving complete digitalization to enhance societal empowerment. Digital technologies, including cloud computing and mobile applications, have emerged as powerful catalysts for rapid economic growth and citizen empowerment. Global organizations are keen to invest in Digital India, envisioning it as a key growth opportunity. The success of this program has the possibility to position India as a digitally empowered nation and a global leader in utilizing IT solutions for service delivery across various sectors such as health, education, agriculture, and banking. Digital India, representing the 21st-century vision for the country, marks just the initial phase of a digital revolution. Proper

implementation of this program is anticipated to unlock a plethora of new opportunities for its citizens.

Gupta & Agarwal (2023) stated that the arrival of digitalization has escorted in a wave of innovation, streamlined work processes, generated fresh job prospects, and fuelled economic expansion. It plays an essential role in fostering transparency within systems, contributing to substantial societal and communal advantages. Digitization has appeared as a potent tool for building and sustaining absolute advantages, sometimes even asserting a "right to win" to outpace competition in specific sectors— a fundamental capability crucial for national economic endeavours. Governments worldwide should persevere in investing in infrastructure and policies that bolster innovation and entrepreneurship within their borders. In the case of India, initiatives like Digital India have laid the groundwork for a technologically empowered nation. The growth of the digital economy in India has not only created employment opportunities, enhanced productivity, and broadened access to services but has also posed challenges such as the digital divide, disparities, and apprehensions about data privacy and security. To navigate these challenges successfully, ongoing commitment to fostering innovation, entrepreneurship, and digital infrastructure is essential for both sustaining economic growth and addressing societal concerns in an increasingly digital world.

Dhawale & Quazi (2020) revealed that the e-commerce is playing a vital role in driving the socio-economic development of India, addressing the diverse needs and aspirations of its youthful population. Despite a significant user base of around fourteen crores, only two and a half crores are currently engaged in online transactions, a stark contrast to the eighteen crores in China actively participating in internet-based purchases. While the practice of carrying physical cash has diminished in India, there is a need to further promote digitalization among the populace to encourage widespread online transactions. It is imperative for the government to take proactive measures to educate both the public and traders about the numerous advantages of e-commerce. The future holds great promise for the sustained development of India through socio-economic progress, with digitalization playing a central role. To reinvigorate the growth of the Indian economy, there is a necessity to instil a digital spending mindset among the entire population. The upcoming years are expected to witness a surge in digitization, gradually phasing out traditional paperwork and paving the way for robust online businesses. With the government's Digital India initiative gaining momentum and fostering digital literacy, the landscape is evolving, presenting new opportunities for employment, technological advancements, and enhanced transparency. Digital India is transforming the way citizens perceive development, development of a comprehensive approach to social and economic progress. The term has become synonymous with the government's commitment to promoting growth and creating a new era for India, driven by digitalization across various facets of life, including employment opportunities, technological advancements, and transparent governance.

Latta & Singh (2021) studied that digital environment in India aligns seamlessly with the growth aspirations of country, serving as a catalyst for its development. Study investigates current level of the digital revolution and underscores the compelling need for digitization. An in-depth exploration into the tangible and potential impacts on employment, productivity, and efficiency further strengthens the case for embracing this inevitable transformation. As businesses navigate the digital transition, a critical evaluation is essential to anticipate disruptions in existing processes, potentially rendering some obsolete. Given India's vast scale, rapid digitization, and comparatively lower productivity in certain sectors, the magnitude of disruptions and benefits looms large. Entrepreneurs must adapt proactively to offer services and solutions that remain relevant amidst the accelerated pace of digitization. Technology infrastructure should be scalable to accommodate the growing needs of the business. For executives, digital considerations should take precedence

in strategic planning. Customers, now more digitally literate, expect the convenience and speed of digital interactions, whether it's online shopping or addressing billing queries. Consequently, companies must swiftly adjust to meet these evolving expectations, recognizing that digital should be at the forefront of their business strategies.

Rout, Panda & Panda (2022) found that digitalization has indisputably filled enthusiasm into the growth and prosperity of home-based entrepreneurs. It serves as a crucial facilitator for small business sectors, and ensured the seamless sale of products and services to end customers through digital platforms. Digital transformation emerges as the key gateway to prosperity and development for homepreneurs. In countries like India, where unregistered home-based businesses outnumber registered ones, digitalization plays a pivotal role in reshaping their business perspectives. The contemporary landscape witnesses' governments extending every possible opportunity to empower entrepreneurship. Individuals possessing skills are encouraged to delve into business ventures, as the combination of governmental support and digitalization renders business activities easily accessible. The current digital gateway provides homepreneurs with opportunities to market their products across various social media platforms. Moreover, they can enhance their skills through engagement with different social media interactive networks. In essence, digitalization exerts a profound impact on the development of homepreneurs. Governments should further amplify their efforts in providing digital facilities to small or home-based businesses, thereby propelling the economic growth of the country.

Tayade (2022) stated that the contemporary world's imperious requirement for digitalization starts from continuous innovations and technological advancements. Nations worldwide are eagerly following digital transformation for enhancement of societal empowerment. In this search, the Indian government launched the Digital India program, a flagship initiative aimed at propelling the nation into a digitally empowered and knowledge-based economy. This visionary project aspires to reshape India by embracing digital tools and technologies. With a commitment to supporting infrastructure, the program also takes measures to provide electronic services to citizens, encourage the manufacturing of digital devices and products, and create job opportunities, fostering the development of a knowledge economy that promotes inclusive growth. Digitalization brings forth a wave of innovation, simplifies work processes, opens up new avenues for employment, and contributes to economic growth. The transparency facilitated by digital systems in financial transactions helps mitigate issues such as tax evasion and the existence of parallel economies. The Digital India campaign stands as a commendable stride towards shaping a 21st-century India driven by connectivity and technological opportunities.

Pan (2023) studied that digital businesspersons depend on digital technologies to conduct business operations. This transformative shift in business has revolutionized how businesses operate, giving rise to a new wave of digital entrepreneurs. In today's global markets, dynamics are more intense, competition is fiercer, complexities are heightened, and digital presence is paramount. Digital businesses thrive on modern technology for growth, using it to reinvent existing business models, transform products, and create new value through innovative ideas and products while establishing deep connections with their audience. In essence, digital businesses actively engage customers by offering innovative products and services. Over time, these businesses generate significant growth and tangible economic value, showcasing the transformative power of digital technologies in today's entrepreneurial landscape.

Neeta (2019) found that the modern environment for digitalization stems from constant modernizations and technological advancements. Nations worldwide are motivated to grip digital transformation for empowerment of their societies more effectively. Digitalization enhances the efficiency of work processes, and in the realm of governance, it manifests as e-governance, fostering transparency in government departments and streamlining service delivery. This

transformation accelerates the pace of activities, reducing time requirements and cutting costs, ultimately bolstering profit margins, assists in alignment with business goals and expanding market reach. Digitalization methods should align with the overall strategic goals of the business. In agriculture, automation mitigates uncertainties and optimizes resource utilization, while in industries, it results in superior product designs and increased profitability, fostering healthy competition and sectoral growth. Services transitioning to digital platforms promise heightened customer satisfaction and improved service quality through timely and widespread delivery. Overall, digitalization emerges as a key driver for progress, offering countless benefit across various sectors and elevating the quality of life for citizens.

Maiti & Kayal (2017) revealed that digitization plays an essential role in automating both product as well as process functions, that led to improved quality and increased production efficiency. Despite the considerable potential for future growth, India's "Micro, Small, and Medium Enterprises" face challenges related to limited access to finance. The adoption of digitization not only improves the performance of MSMEs but also addresses financial barriers by offering alternative financing avenues. Further advancements in Information Technology and IT-enabled services hold the promise of stimulating the MSME sector in India by overcoming existing challenges and introducing alternative platforms for financing, like crowdfunding and e-commerce. In summary, India's service sector and MSME segment show significant possibility for future growth through digitization. Achieving inclusive growth in both these sectors can catalyse increased trade volumes and bolster India's global market share, facilitated by the transformative impact of digitization.

Badam & Gochhait (2020) stated that true influence of digitalization becomes obvious only when individuals possess the competence to understand and embrace these advancements. Financial literacy is a requirement for individuals to make informed decisions, especially in the context of digital financial transactions conducted over the internet. Digital financial literacy has thus become a crucial knowledge base in the post-digitalization era. This paper delves into the profound effects of digitalization on the "Micro, Small, and Medium Enterprises" and service sectors, emphasizing the limited implementation of Industry 4.0 on a broader scale. Digitalization, distinct from digitization, involves utilizing various technologies and methods to transform business models, opening up new avenues for revenue generation and value creation. Digitization is the conversion of data into bit formats, primarily associated with digital data. On the other hand, digitalization represents the strategic application of diverse technologies to reshape business prospects and attain efficiency objectives. In essence, this paper explores how digitalization has influenced MSMEs and the service sector, shedding light on the challenges hindering the widespread adoption of Industry 4.0.

Objective

To determine the factors that evaluates digitalisation methods adopted by emerging businesses in India.

Study Methodology

Sample of 219 people from different business sectors where surveyed to know the factors that evaluates digitalisation methods adopted by emerging businesses in India. To collect and analyse the data "Convenient sampling method" and "Factor Analysis" were used.

Findings of Study

Table below is sharing respondent's general details. Total 219 people were surveyed in which male are 63.5% and 36.5% are female. Among them 27.8% are below 42 years of age, 38.8% are between 42-48 years of age and rest 33.3% are above 48 years of age. 16.9% are from financial services sector, 27.4% from healthcare, 26.5% from retail, 18.7% from education and rest 10.5% from other start-up sectors.

Details of Participants

Variable	Participants	% age
Gender		
Male	139	63.5
Female	80	36.5
Total	219	100
Age in years		
Below 42	61	27.8
42-48	85	38.8
Above 48	73	33.3
Total	219	100
Business sectors		
Financial services	37	16.9
Healthcare	60	27.4
Retail	58	26.5
Education	41	18.7
Others	23	10.5
Total	219	100

“Factor Analysis”

“KMO and Bartlett's Test”

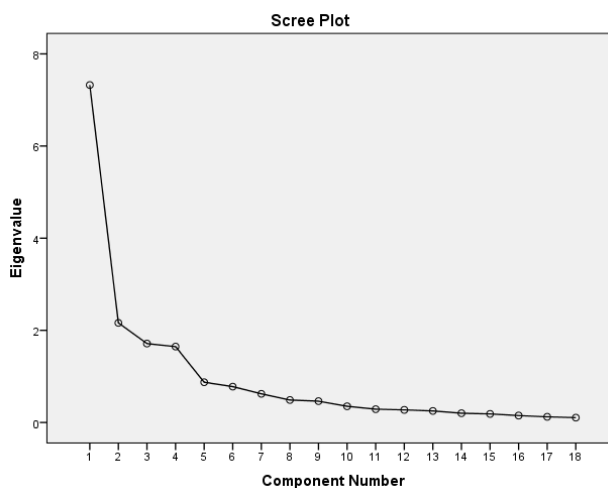
“Kaiser-Meyer-Olkin Measure of Sampling Adequacy”		.841
“Bartlett's Test of Sphericity”	“Approx. Chi-Square”	2754.822
	df	153
	Significance	.000

In above table “KMO and Bartlett's Test” above, KMO value found is .841

“Total Variance Explained”

“Component”	“Initial Eigenvalues”			“Rotation Sums of Squared Loadings”		
	“Total”	“% Of Variance”	Cumulative %	“Total”	“% Of Variance”	Cumulative %
1.	7.324	40.690	40.690	3.857	21.429	21.429
2.	2.161	12.008	52.698	3.449	19.161	40.591
3.	1.713	9.516	62.214	2.790	15.502	56.093
4.	1.647	9.149	71.362	2.748	15.269	71.362
5.	.874	4.854	76.216			
6.	.778	4.322	80.539			
7.	.622	3.456	83.994			
8.	.487	2.708	86.703			
9.	.463	2.570	89.273			
10.	.352	1.956	91.228			
11.	.289	1.607	92.835			
12.	.274	1.520	94.355			
13.	.251	1.395	95.750			
14.	.201	1.116	96.866			
15.	.186	1.032	97.898			
16.	.150	.834	98.732			
17.	.123	.685	99.416			
18.	.105	.584	100.000			

To extract the factor “principal component analysis” method was applied, and it was found that 18 variables form 4 Factors. The factors explained the variance of 21.429%, 19.161%, 15.502% and 15.269% respectively. The total variance explained is 71.362%.



ScreePlot

“Rotated Component Matrix”

“S. No.”	“Statements”	“Factor Loading”	“Factor Reliability”
	Alignment with Business Goals		.910
1	Digitalization methods should align with the overall strategic goals of the business	.843	
2	Evaluate how well the digital initiatives support the company's objectives	.838	
3	Digitalization must improve customer experience	.837	
4	It's important to increase business operational efficiency	.795	
5	Digitalization methods should expand market reach	.770	
	Technology Infrastructure		.890
6	Company must assess existing technology infrastructure	.819	
7	Technology infrastructure should be scalable to accommodate the growing needs of the business	.803	
8	Assess the flexibility of the infrastructure to integrate with new technologies	.792	
9	Evaluate the strength of the infrastructure in terms of protecting sensitive data	.777	
10	Technology infrastructure should ensure high levels of reliability	.717	
	Customer Experience		.803
11	Analyze how digitalization methods enhance the customer experience	.884	
12	Assess digitalization methods for intuitive and user-friendly interfaces	.820	
13	Evaluate the level of personalization offered by digitalization methods	.807	
14	Consider the accessibility of digitalization methods to ensure inclusivity for all customers	.519	
	Operational Efficiency		.841
15	Measure the impact of digitalization on streamlining internal processes	.894	
16	Digitalization must reduce costs, and improve the productivity	.871	
17	Digitalization methods must provide access to real-time data insights and analytics	.693	
18	Digitalization must facilitate collaboration and communication within the organization	.599	

Factors and the associated variables

Table 4 is showing different factors that evaluates digitalisation methods adopted by emerging businesses. First factor is Alignment with Business Goals which includes the variables like

Digitalization methods should align with the overall strategic goals of the business, evaluate how well the digital initiatives support the company's objectives, Digitalization must improve customer experience, it's important to increase business operational efficiency and Digitalization methods should expand market reach. Second factor namely Technology Infrastructure includes the variables like Company must assess existing technology infrastructure, Technology infrastructure should be scalable to accommodate the growing needs of the business, Assess the flexibility of the infrastructure to integrate with new technologies, evaluate the strength of the infrastructure in terms of protecting sensitive data and Technology infrastructure should ensure high levels of reliability. Third factor is Customer Experience and its associated variables are analysing how digitalization methods enhance the customer experience, assess digitalization methods for intuitive and user-friendly interfaces, Evaluate the level of personalization offered by digitalization methods and consider the accessibility of digitalization methods to ensure inclusivity for all customers. Fourth factor is Operational Efficiency which includes the variables like measure the impact of digitalization on streamlining internal processes, Digitalization must reduce costs, and improve the productivity, Digitalization methods must provide access to real-time data insights and analytics and Digitalization must facilitate collaboration and communication within the organization.

“Reliability Statistics”

“Cronbach's Alpha”	“Number of Items”
.909	18

Total reliability of 18 items that includes variables of factors that evaluates digitalisation methods adopted by emerging businesses in India is 0.909

Conclusion

Digitization is the process of converting various forms of information, such as text, sound, images, or voice, into a digital format. This transformative approach has demonstrated significant impacts on both the economy and society. It contributes to reducing unemployment, enhancing the quality of life, and expanding access to knowledge and public services. While digitization enhances productivity and fosters measurable growth, it also raises concerns about potential job displacement. This involves the generation, processing, sharing, and management of digital information. Digitization is an inclusive method of preservation and access, wherein an institution's assets are transformed into digital format, generating high-quality copies. Technology infrastructure should ensure high levels of reliability. This process offers advanced opportunities for preserving and accessing knowledge contents, transforming the utilization and accessibility of collections. To fully utilize the benefits of digitization, organizations must carefully choose materials for digitization, focusing on items that will provide maximum benefits for both administrators and users. Thoughtful strategies are essential to ensuring the creation of meaningful, high-quality digital versions, and effective management of both original and digital assets over time. The factors that evaluate digitalisation methods adopted by emerging businesses are Alignment with Business Goals, Technology Infrastructure, Customer Experience, and Operational Efficiency.

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