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EXPLORING THE INTERPLAY OF ENTREPRENEURS' AWARENESS, PERCEPTION, AND INTENTION IN DRIVING DIGITALIZATION FOR MSMES: A FOCUSED INSIGHT INTO SIDBI'S ROLE

ABSTRACT

Business dynamics have undergone a remarkable transformation in recent years, primarily driven by the digital revolution. Micro, Small, and Medium Enterprises (MSMEs) are recognized as the cornerstone of economic growth and development, and their adaptability to this digital era is paramount.

This empirical investigation explores the complex relationship between entrepreneurs' awareness, perceptions, and intentions and their influence on the adoption of digitalization, with a focus on the digital initiatives of the Small Industries Development Bank of India (SIDBI), which aims to transform MSMEs digitally. Various constructs, such as entrepreneurs' awareness, perceptions, and intentions, are used to evaluate digital adoption in small businesses. By examining entrepreneurs' levels of awareness, perceptions, and intentions, we aim to uncover the fundamental factors that shape their strategic choices regarding digital adoption.

This study employs structural equation Modeling (SEM) through AMOS and adopts an explanatory survey method. It involved engaging Indian MSMEs with a total of 300 participants. Of these, 220 successfully submitted fully filled-out questionnaires through Google Forms.

It is noteworthy that the examination of the research model revealed promising results by meeting the thresholds of CFI, RMSEA, and other similar measures. Findings reveal that entrepreneurs' awareness and intention positively influence digital adoption in MSMEs, whereas entrepreneurs' perception has no significant influence on digital adoption in MSMEs.

This study has significant practical implications for policy formulation, entrepreneurial decision-making, collaborative efforts, risk mitigation, and future research directions in the context of digitalization within the MSME sector.

Keywords: awareness, perception, intention, digital adoption, sidbi, msme, financial institutions, innovation, economic growth, entrepreneurship

JEL Classification: O3, O16, O33, G2, G33

INTRODUCTION

The advent of digital technologies has initiated profound transformations, which are notably advantageous for small and medium-sized enterprises across the nation (Pfister and Lehmann, 2020). In the continuously changing arena of Micro, Small, and Medium Enterprises (MSMEs), digitalization has emerged as a crucial catalyst for driving growth and fostering innovation (Santos-Jaén et al., 2023). Digital technologies – the Internet, smartphones, and other applications and technologies that collect, store, analyze, and share information – play a transformational role in the world economy, in particular by changing the entrepreneurship process (Youssef et al., 2021). Recent studies have highlighted the intricate links between business expansion, innovation, digital adaptation, sustainability, and global outreach, creating a vital framework for firms to expand their

international presence. The COVID-19 pandemic has emphasized the essential role of digitalization in the international growth of businesses, marking the onset of a digital revolution (Fletcher and Griffiths, 2020).

Social media platforms, online marketplaces, and digital advertising channels have enabled small businesses to reach customers beyond their local markets and precisely target global demographics (Quinton et al., 2018). Effective digitalization enables companies to refine their business models and fortify collaborations with partners within their value chains (Ritter and Pedersen, 2020). Successful digital integration is known to yield improved operational efficiency, broader market reach, and heightened competitiveness by quantifying tangible outcomes arising from the fusion of entrepreneurial insights and digital strategies (Li et al., 2022).

MSMEs have been universally considered an engine of economic growth and are key instruments for promoting equitable development (Endris and Kassegn, 2022). For labour-intensive countries, such as India, this sector has great potential in every aspect. Khurana et al. (2019) asserted that the expansion of MSMEs is a beneficial aspect of Indian economic advancement. Despite encountering various challenges, including unavailability of credit, shortage of raw materials and manpower, and poor infrastructure, these enterprises have managed to endure economic downturns due to their innovation, adaptability, and resilience. With the advent of digital technologies, MSMEs have further bolstered their capacity to navigate challenges and capitalize on opportunities, enhancing their competitiveness in the market.

Small Industries Development Bank of India (SIDBI), recognized as a development bank, focuses on promoting and fostering the growth of small-scale industries, which play a vital role in India's economy by generating employment, boosting industrial production, and contributing to export earnings. Distinguishing itself as a pioneer, SIDBI offers entrepreneurs a range of innovative digital initiatives aimed at improving access to financial services, optimizing operations, and bolstering competitiveness (Sai, 2022). These tailored digital initiatives are crafted to support small enterprises in their journey towards digital transformation.

This study aims to explore the correlation between an entrepreneur's awareness of various SIDBI schemes, their resulting positive perceptions, and the subsequent inclination toward digital adoption. The central theme of this study revolves around understanding how awareness, perception, and intention are interconnected in the context of entrepreneurs embracing digitalization within small businesses.

Utilizing a comprehensive approach that includes surveys and interviews conducted among a diverse group of entrepreneurs, this study seeks to evaluate the extent of awareness among SME owners regarding the digital initiatives offered by SIDBI.

The outcomes of this empirical inquiry have profound implications for a multitude of stakeholders, including policymakers, financial institutions, and most notably, the entrepreneurs who constitute the bedrock of MSMEs. It constructs a comprehensive framework aimed at steering MSMEs toward a prosperous and sustainable future in the digital age (Stentoft et al., 2021).

This study seeks to unveil the intricate dynamics at play, offering actionable insights into propelling MSMEs into an era of digital empowerment and sustained growth.

LITERATURE REVIEW

Conceptual Framework

Digitalization embodies a profound shift from analogue data and processes to digital formats, seamlessly integrating digital technologies, such as the Internet, software, and automation (Reis et al., 2018). Its core objective is to enhance efficiency, accessibility, and connectivity across various domains, thus reshaping both business and daily life. This transition empowers organizations to unlock the potential of data, streamline operations, and engage with customers in unprecedented ways, ultimately fueling innovation, strengthening competitiveness, and fostering growth in the digital era (Quinton et al., 2018).

As per Pamuła's (2020) definition, digitalization involves implementing digital technologies and infrastructure throughout various sectors, including businesses, the economy, and society, while ensuring originality in expression.

However, a universal definition remains elusive. When organizations embrace digital technologies, they undergo substantial changes in their business models, yielding increased value, as Kim et al. (2021) show. Entrepreneurs harness a diverse array of digital technologies to gain a competitive edge, particularly in acquiring knowledge and expanding business networks (Ojha 2023).

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In the ever-changing realm of contemporary business, the ubiquitous impact of digital integration has initiated a revolutionary shift for entrepreneurs to conduct operations, drive innovation, and engage in competition. Digitalization empowers small firms to participate in digitalized value chains and integrated business networks. Firms are progressively investing in Information and Communication Technologies (ICTs) to enhance supply chain synchronization and integration (North et al., 2020). With its vibrant entrepreneurial ecosystem, the Indian economy has also witnessed a burgeoning interest in digitalization as a means to enhance competitiveness, reach broader markets, and streamline operations. Concurrently, it is at the forefront of introducing digital initiatives tailored to the unique needs of the sector (Hemlatha and Reddy, 2021).

This study contributes to a richer understanding of the evolving digitalization landscape within the Indian MSME sector, underscoring the need for customized approaches to ensure that these initiatives are optimally harnessed by entrepreneurs in their pursuit of business success (Warner and Wäger, 2019). The inclusion of SIDBI, an institution dedicated to nurturing MSME growth, lends a unique perspective to this study. SIDBI's initiatives and experiences provide a tangible context for exploring the real-world implications of digital solutions within the MSME sector, augmenting the study's findings with invaluable insights (Satyavathi & Ravindra, 2020).

Recognizing the enormous potential of digitalization for this sector, SIDBI has embarked on a pioneering journey with its Digital Initiative aimed at facilitating the digital transformation of MSMEs across the nation (Kadaba et al., 2023). SIDBI's Digital Initiative, under SIDBI 2.0, represents a strategic response to this imperative poised to empower small businesses with the tools, resources, and knowledge required to flourish in a digitally driven economy.

SIDBI's Digital Initiative encompasses a comprehensive range of programs that provide assistance mechanisms aimed at accelerating the digital transformation of small-scale enterprises (Shukla and Prajapati, 2019). It includes digital initiatives such as *Digital Prayas APP* for all sorts of online operations, *PSB Loan in 59 minutes, UAM* (Udyog

Aadhaar Memorandum) and *UDYAMI portal* for registration, *SMART (SIDBI Multi-function Appraisal and Rating Tool)* Initiative to support new modules of KYCs, *E-Udyam Sangyam* to spread awareness through webinars and other similar schemes. These initiatives cover digital infrastructure development, digital skills training, financial support for digital adoption, and assistance in enhancing digital marketing capabilities. Furthermore, the initiative seeks to facilitate the integration of MSMEs with e-commerce platforms, promote data-driven decision-making, and strengthen cyber security measures (Gomathi, 2019).

Despite the extensive body of research on digitalization, a significant gap persists in comprehending its specific effects on MSMEs. Moreover, there is a distinct absence of research addressing entrepreneurs' awareness of the diverse initiatives introduced by SIDBI and their role in facilitating the digital transformation of MSMEs. This unexplored realm calls for thorough exploration, demanding a systematic understanding of each construct in isolation.

Hypothesis Development

Entrepreneurial Awareness and Digital Adoption

In the global context, where small enterprises play a pivotal role in economic development, understanding the awareness of entrepreneurs towards "digitalization", "blockchain technology", and "technological integration", is paramount (Adekunle et al., 2024) and garners significant attention from scholars. This section underscores how the path to digitalization commences with awareness. Entrepreneurs must be attuned to digital tools and resources at their disposal. Through comprehensive awareness campaigns, SIDBI aims to equip entrepreneurs with the knowledge needed to navigate the digital landscape effectively. Seminars, webinars, and outreach programs such as Udyam Gyan Shala, Swavalamban Digi-Gyan Shala, and COWE play crucial roles in disseminating information and fostering a sense of curiosity and interest among entrepreneurs.

Entrepreneurs who possess a high level of awareness regarding digital technologies are more likely to be knowledgeable about the available tools, platforms, and solutions relevant to their industry and business needs. This awareness enables them to make informed decisions about which digital technologies to adopt and how to integrate them into their operations (Ghobakhloo and Ching, 2019; Shama et al. 2023; Abdullah Alshammari et al. 2023). Entrepreneurs who are aware of the potential benefits of digital adoption, such as increased efficiency, productivity, cost savings, and market competitiveness, are more inclined to invest in digital solutions for their MSMEs. Moreover, Entrepreneurs who are aware of the importance of digital adoption in driving business growth and sustainability can serve as advocates and champions for digital transformation within their MSMEs (Omrani et al. 2022; Ghobakhloo and Ching, 2019).

H1: Entrepreneurs' awareness positively influences the digital adoption in MSMEs.

Entrepreneurial Perception and Digital Adoption

From a multidisciplinary perspective, the cognitive approach is increasingly pertinent in contemporary times to understanding entrepreneurship, extending beyond individual analysis to encompass collective levels (Omrani et al. 2022; Arenius and Minniti, 2005). Both prospective and established entrepreneurs interpret the external milieu, shaping their motivations and perspectives, which subsequently inform their attitudes and intentions and ultimately influence their actions. However, the current spotlight on entrepreneurial cognition has evolved over the course of business and its innovative ideas (Liñán et al. 2011). On the other hand, perception is the lens through which entrepreneurs view digitalization. Entrepreneurs need to perceive digital technologies not as mere tools, but as strategic enablers for business growth.

Amidst this changing scenario, digitalization has emerged as a pivotal factor influencing entrepreneurs' perceptions and behaviours. Thus, understanding the interplay between digitalization and entrepreneurial cognition is essential to comprehending the dynamics of contemporary entrepreneurship (Gurkov and Filinov, 2022). An entrepreneur's willingness to embrace digitalization is closely tied to their awareness and perception levels (Behling and Lenzi, 2019).

Entrepreneurs who perceive digital technologies as valuable tools for enhancing business operations, improving efficiency, and driving growth are more likely to adopt digital solutions in their MSMEs. Their positive perception of the benefits of digitalization motivates them to invest time, resources, and effort into implementing and integrating digital technologies into their business processes (Omrani et al. 2022; Shama et al. 2023; Alreshoodi et al. 2022). Entrepreneurs who perceive digital technologies as relevant to their industry, market, and business model are more inclined to explore and adopt digital solutions tailored to their specific needs and challenges. Entrepreneurs who perceive digital technologies as easy to use, user-friendly, and accessible are more willing to adopt and integrate digital solutions into their MSMEs (Ghobakhloo and Ching, 2019; Shama et al. 2023; Rehman and Alorifi, 2024). Their perception of the usability and intuitiveness of digital tools reduces barriers to adoption, minimizes resistance from employees, and facilitates smooth implementation and adoption processes. Entrepreneurs who perceive digital technologies as drivers of innovation, creativity, and growth opportunities are more inclined to experiment with and adopt new technologies in their MSMEs (Shahadat et al. 2023; Shama et al. 2023; Wajih and Rehman, 2014). Their perception of the transformative potential of digitalization inspires them to explore innovative business models, products, and services enabled by digital technologies.

H2: Entrepreneurs' perception positively influences the digital adoption in MSMEs.

Entrepreneurial Intention and Digital Adoption

When entrepreneurs have a solid grasp of the digital landscape and hold positive views on digital technologies, this naturally leads to a stronger desire to incorporate these advancements into their business. Moreover, the intentions of an entrepreneur can be regarded as the driving force behind an action. Entrepreneurs must understand the practical value of digital tools for their businesses. This intention propels MSMEs into the digital era. Nicolau et al. (2022) aimed to examine the factors that affect Digital Entrepreneur Intention (DEI) in Malaysia and concluded that entrepreneurs recognize that digitalization provides a competitive edge.

Entrepreneurs who have a strong intention to innovate and stay competitive in the marketplace are more likely to adopt digital technologies as a means of driving business growth and differentiation. Their intention to leverage technology to innovate and improve their products, services, and processes motivates them to explore and invest in digital solutions for their MSMEs. Entrepreneurs' intention to adopt digital technologies is influenced by their perception of the ease of adoption and integration of digital solutions into their MSMEs (Shahadat et al. 2023; Shama et al. 2023; Alreshoodi et al. 2022). Entrepreneurs who perceive digital technologies as easy to use, implement, and integrate into existing workflows are more likely to intend to adopt them, as perceived ease of adoption reduces barriers and uncertainties associated with digital transformation. Entrepreneurs' intention to adopt digital technologies is influenced by their perception of the compatibility of digital solutions with their business needs, goals, and existing infrastructure. Entrepreneurs who perceive digital technologies as compatible with their business model, processes, and resources are more inclined to intend to adopt them, as perceived compatibility increases the likelihood of successful adoption and integration (Omrani et al. 2022; Shama et al. 2023). Entrepreneurs' intention to adopt digital technologies is influenced by their strategic vision and long-term goals for their MSMEs. Entrepreneurs who have a clear vision of leveraging digital technologies to achieve business objectives, such as growth, expansion, sustainability, or market leadership, are more likely to intend to adopt digital solutions, as alignment with strategic vision increases commitment and prioritization of digitalization efforts (Abdullah Alshammari et al. 2023).

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H3: Entrepreneurs' intention positively influences the digital adoption in MSMEs.

To enhance result referencing, a conceptual research framework based on the hypotheses was constructed as outlined below.

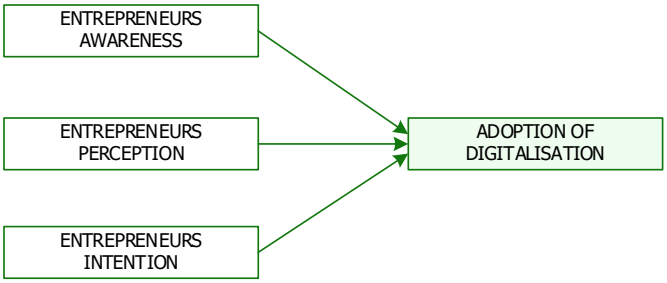

Figure 1. Conceptual Model.

AIMS AND OBJECTIVES

This paper intends to analyze the role of SIDBI's initiatives on digital adoption in Micro, Small, and Medium Enterprises (MSMEs) by studying the awareness of entrepreneurs towards the various schemes, which directly or indirectly assist them in transforming digitally. The study seeks to understand how the level of awareness among entrepreneurs influences their perception and their intent to integrate digitalization within MSMEs.

The objective is to analyse how a greater level of awareness can lead to a positive perception of entrepreneurs towards the available schemes which are strategically designed to assist the MSME sector in digital adoption.

The study contributes novel insights to the academic literature by highlighting that awareness of other related factors can play a major role in driving innovation in the economy. The study has also established a consistency of relationships among the key constructs related to digital adoption in MSMEs, and not even a single study has been undertaken yet which shows the interplay of the three stated factors. By addressing these gaps, the paper aims to provide a comprehensive analysis of the role played by SIDBI and entrepreneurial awareness and perceptions in driving digitalization within MSMEs, offering valuable insights for policymakers, researchers, and practitioners so that more emphasis be given to enhance the awareness level of business owners.

METHODS

Measures

The evaluation of the model's propositions utilized a variety of questionnaire items, with all indicators sourced from existing research but modified as necessary to suit the study's context. Exogenous variables were quantified using a 5-point Likert scale. Respondents were asked to complete the questionnaire, expressing their perceptions using a 5-point Likert scale: assigning "5" signified disagreement to a large extent, "4" denoted slight disagreement, "3" denoted neutral, and "2" and "1 showed slight agreement and agreement, respectively. The measurement items utilized in this study were drawn from relevant literature that aligns with the research subject. The study comprised four factors, each encompassing five to six statements. An analysis was conducted based on these statements. The measurement items were adapted as follows: entrepreneurial awareness from Ugwu, 2012; entrepreneurial perception from Fisher et al. 2014; entrepreneurial intention from Liñán et al. 2011; digital adoption from Ozsahin et al. 2022.

Collection of Data and Sample Selection

To assess the hypotheses, the authors conducted a survey of entrepreneurial MSMEs in the manufacturing sector, which directly or indirectly are the beneficiaries of SIDBI. The sample firms are actively undergoing digital transformation in their businesses and have either availed assistance or expressed a willingness to seek support from a development bank. This assistance is provided through various schemes specifically crafted and designed to promote digital integration within MSMEs.

A self-administered survey was crafted to gather information regarding the impact of entrepreneurs' awareness, perception, and intention regarding the integration of digitalization into their businesses. The survey data were gathered from entrepreneurs of MSMEs who had a comprehensive idea of SIDBI and SIDBI 2.0.

To ensure the validity of the survey instrument, it underwent a pre-test with 30 entrepreneurs from the MSME sector. Minor adjustments to the survey questionnaire were made based on the feedback received during the pilot survey.

At the outset, 300 questionnaires were disseminated to the MSMEs, accompanied by a cover letter elucidating the study's objectives and underscoring the voluntary nature of participation. The participants were assured that their responses would be treated confidentially and utilized solely for academic research purposes. After the reminder, 220 fully completed and viable questionnaires were returned, constituting a response rate of 73%. The data for this study were collected between June and October 2023.

These measures were used to examine MSMEs' digital adoption based on their intention to adopt. The extent of digitalization was estimated using three constructs, as previously discussed. To understand entrepreneurs' intentions, their awareness and perceptions were studied. The respondents were asked whether they used different digital platforms, tied up with any e-commerce website, and had taken any assistance from SIDBI to support the digital transformation of their business, using a 5-point Likert scale. The sample firms were asked about their sales, operational efficiency, return on total assets, and net profit margin during or after the adoption of digitalization.

Data Analysis Technique

This study employed Structural Equation Modeling (SEM) with AMOS software to assess the proposed hypotheses. SEM is a robust statistical methodology used to analyze intricate relationships among variables, offering a means to test and validate theoretical models that represent complex networks of relationships. AMOS, which represents the Analysis of Moment Structures, is a widely used software tool for SEM.

SEM allows researchers to scrutinize both measurement and structural models. This approach was particularly suitable for this study, enabling the estimation of complex structural associations between variables and the analysis of their relationships.

AMOS supports SEM analysis through path analysis, which estimates the relationships between variables and incorporates measurement errors, thereby enhancing the realism of the models.

Furthermore, SEM was used to evaluate the fit of the data to a theoretical model. To assess the model, key indicators, such as chi-square/degrees of freedom (χ^2/df), CFI, GFI, AGFI, TLI, IFI, RMSEA, and PGFI, were considered. Followed by the validity and reliability tests, the AMOS SEM test was employed to interpret the hypotheses results (Teng et al., 2019), as shown in the analysis section.

RESULTS

Analysis of Reliability

The alpha value was used to determine the inter-item consistency. As demonstrated in Table 1, the scale has a high level of internal consistency, because each component has an alpha value greater than 0.7 (Taber, 2018). This signifies that this study had a high overall level of consistency and acceptable grading.

Table 1. Reliability Analysis of the Constructs.

Constructs	Items	Factor Loadings	Cronbach's Alpha	No. of items	Results
AWARENESS (AW)	EA1	0.669	0.835 ≥0.60	4	Valid and Reliable
	EA3	0.854			
	EA4	0.614			
	EA5	0.637			
PERCEPTION (PER)	EP1	0.715	0.890≥0.60	5	Valid and Reliable
	EP2	0.720			
	EP3	0.408			
	EP4	0.669			
	EP5	0.715			
INTENTION (INT)	EI3	0.915		3	
	EI4	0.904			
	EI5	0.804			
DIGITAL ADOPTION (DIG)	D2	0.578	0.859≥0.60	4	Valid and Reliable
	D3	0.682			
	D4	0.675			
	D5	.644			

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Descriptive Analysis

The final dataset incorporated responses from 220 MSME entrepreneurs in India presented in Table 2, revealing a demographic distribution. The demographic information (Table 2) revealed that the majority of the respondents were identified as male (65.9%), while female entrepreneurs constituted only 34.1%. In terms of age, the largest proportion fell within the 31-40 age bracket (32.7%), closely followed by the 21-30 age group (31.3%). Regarding educational attainment, the majority of entrepreneurs were graduates (53.7%), followed by postgraduates (31.8%), and those with intermediate education (10.0%). When considering the scale of the enterprises, the data indicated that 44.09% of the businesses were categorized as small enterprises, while medium and micro enterprises comprised 31.81% and 24.09%, respectively.

Table 2. Demographic Information of the Respondents (N=220). Note: **F**=Frequency; **CF**=Cumulative Frequency; **P**= Percentage; **N**=Number of respondents.

Gender				
	Gender	F	P (%)	CF
Valid	Male	145	65.9	65.9
	Female	75	34.1	100.0
	Total	220	100.0	
Education level				
Valid		F	P (%)	CF
	High School	10	4.5	4.5
	Intermediate	22	10.0	15.5
	Graduate	118	53.7	68.2
	Post Graduate	70	31.8	100.0
	Total	220	100	
Age				
Valid		F	P (%)	CF
	Below 20 years	26	12.0	12.0
	21-30 years	69	31.3	24.3
	31-40 years	72	32.7	76.0
	41-50 years	48	22.0	98.0
	Above 50 years	05	2.0	100.0
	Total	220	100.0	
The scale of the Enterprise				
Valid		F	P (%)	CF
	Micro	53	24.09	24.09
	Small	97	44.09	68.18
	Medium	70	31.81	100.00
	Total	220	100.0	

Statistical Overview of the Constructs

This section contains a table illustrating the descriptive statistics of the constructs of the model. The presented data encompass key metrics, such as the mean, standard deviation, skewness, and kurtosis for each construct, offering a comprehensive overview of the characteristics of the dataset.

Table 3 displays mean scores ranging from 1.00 to 5.00, indicating moderate ratings for all four variables (AW, PER, INT, and DIG). The dataset exhibited acceptable responses, showing moderate results and variances, with standard deviations ranging from 0.56 to 1.38, suggesting diverse perspectives among respondents regarding the variables examined in this study.

Table 3. Descriptive Statistics of the Constructs.

Statistics of the Constructs.									
Variable	**N**	**MIN**	**MAX**	**AM**	**S.D.**	**SKEWNESS**		**KURTOSIS**	
		Statistic	Statistic	($\bar{x}$)	Σ	Statistic	S.E.	Statistic	S.E.
D2	220	1.000	5.000	3.89	1.111	-1.206	.164	.675	.327
D3	220	1.000	5.000	3.94	1.049	-1.045	.164	.263	.327
D4	220	1.000	5.000	3.91	1.092	-1.163	.164	.615	.327
D5	220	1.000	5.000	3.98	1.100	-1.202	.164	.707	.327
EA1	220	1.000	5.000	3.74	1.168	-.653	.164	.685	.327
EA3	220	1.000	5.000	3.28	1.213	-.051	.164	-1.074	.327
EA4	220	1.000	5.000	4.00	.676	-.717	.164	-1.370	.327
EA5	220	1.000	5.000	4.46	.614	-1.124	.164	-3.290	.327
EP1	220	1.000	5.000	3.86	1.078	-.885	.164	-.261	.327
EP3	220	1.000	5.000	3.57	1.106	-.450	.164	-1.157	.327
EP4	220	1.000	5.000	3.70	1.146	-.723	.164	-.641	.327
EP5	220	1.000	5.000	3.66	1.105	-.604	.164	-.831	.327
EP6	220	1.000	5.000	3.52	1.120	-.431	.164	-1.186	.327
EI3	220	1.000	5.000	3.37	1.381	-.284	.164	-1.288	.327
EI4	220	1.000	5.000	3.82	.946	-.813	.164	-.399	.327
EI5	220	1.000	5.000	4.32	.566	-.261	.164	-.260	.327

Confirmatory Factor Analysis (CFA)

In the CFA, each concept item was loaded first, and only those that demonstrated a significant connection were retained. In the SEM model, four variables are referred to as constructs, each supported by specific statements. The model comprises three Independent Variables (exogenous) and one dependent variable (endogenous), along with the error terms denoted by "e" in Figure 2. These error terms, which are considered unobserved variables, fall under the category of exogenous variables. To enhance the model, the errors were interconnected, indicating covariance between the variables. This is illustrated by the double arrows connecting unobserved variables in Figure 2. The conceptual model was validated using IBM SPSS Amos Version 26.

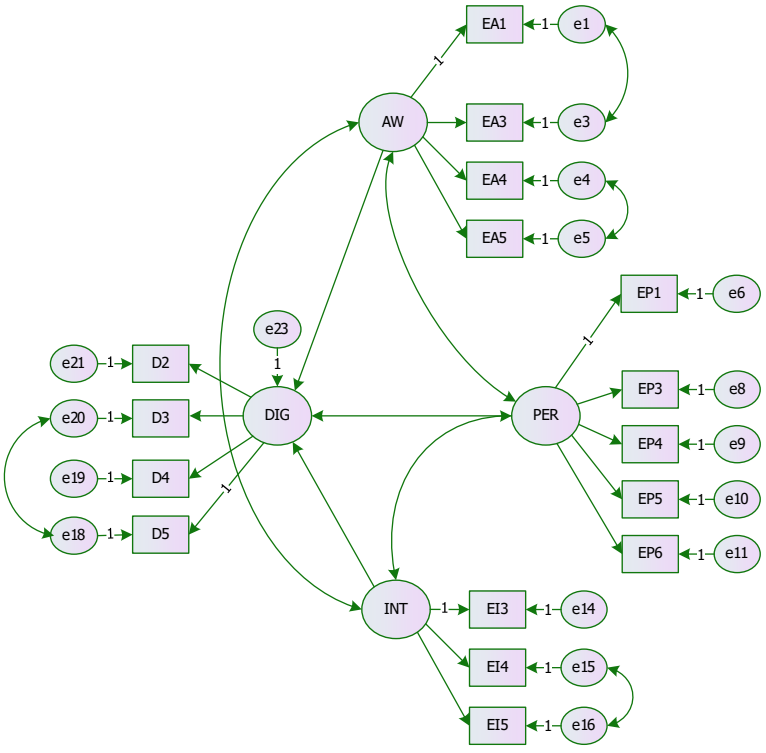

Figure 2. Result Research with SEM AMOS Version 26.

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Empirical Testing of the hypothesized model

The overall model fit result from CFA (Confirmatory Factor Analysis) said that the model is appropriate for further analysis and explained the acceptable substantial relationship between the components

Table 4 presents the outcomes of the model's goodness-of-fit assessments. Analysis of the results indicates that the model is suitable for use, as evidenced by the fulfillment of criteria such as the Tucker Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). It is noteworthy that although chi-square did not meet the qualification criteria, other indices support the adequacy of the model.

Table 4. Evaluation of the measurement instrument.

Measures	Test Indices	Estimate/Result	Suggested Values	Interpretation
Statistical Measures	**CMIN**	117.568	--	--
	DF	94	--	--
Absolute Fit Measures	**CMIN/DF**	1.251	Between 1 and 3 **(Schumacker and Lomax, 2004)**	Excellent
	RMSEA	0.034	<0.06 **(Hu and Bentler, 1999)**	Excellent
	SRMR	0.057	<0.08 **(Hu and Bentler, 1999)**	Excellent
	PClose	0.927	>0.05 **(Bagozzi and Yi, 1988)**	Excellent
	GFI	0.940	≥ 0.90 **(Hair et al. 2021)**	Good Fit
	AGFI	0.913	≥ 0.90 **(Daire et al., 2008)**	Good Fit
Incremental Fit Measures	**CFI**	0.971	>0.95 **(Hu and Bentler, 1999)**	Excellent
	IFI	0.972	≥ 0.90 **(Tanaka and Huba, 1985)**	Good Fit
	TLI	0.963	≥ 0.90 **(Bentler, 1990)**	Good Fit
Parsimony Fit Measures	**PNFI**	0.685	≥ 0.50 **(Mulaik et al., 1989)**	Good Fit
	PCFI	0.761	≥0.50 **(Mulaik et al., 1989)**	Good Fit
	PGFI	0.650	≥0.50 **(Mulaik et al., 1989)**	Good Fit

In addition to the above-mentioned model indices, there are widely accepted recommended model fit values provided by Gaskination statWiki (Table 5). The values of the various measures were classified as terrible, acceptable, and excellent. The result of this study shows excellent values, meeting all thresholds.

However, it's also viable to consider other suggested values mentioned in various studies (Table 5).

Table 5. Recommended Criteria for Model Fitness. *(Source: http://statwiki.gaskination.com)*

Measure	Terrible	Acceptable	Excellent
CMIN/DF	>5	>3	>1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	<0.08	<0.80
RMSEA	>0.08	>0.06	<0.06
PClose	<0.01	<0.05	>0.05

Hypotheses Testing Outcomes for Variables with Direct Relationship.

Several conclusions can be drawn from Table 6.

Table 6. Regression weights: Default Model.

Hypotheses	Exogenous and Endogenous Variable	Std. Estimate	Critical Ratio	P Value	Hypotheses test result
H1	AW--->DIG	0.769	6.08	***	Supported
H2	PER--->DIG	-0.137	-0.711	0.477	Not Supported
H3	INT--->DIG	0.685	3.149	0.002	Supported

Hypothesis 1: Entrepreneur's awareness positively influences digital adoption in MSMEs

Hypothesis 1 was supported by a standardized regression weight coefficient of 0.769 between the variables "entrepreneur awareness" and "digital adoption," with a critical ratio of 6.083 and a probability of 0.000, indicating a significant relationship ($p < 0.05$). Therefore, it can be inferred that entrepreneurs' awareness positively influences digital adoption in MSMEs. This finding aligns with the conclusions of Giao et al. (2020), Zhou et al. (2019), and Huang et al.(2019).

Conclusion: Hypothesis 1 was supported.

Hypothesis 2: Entrepreneur's perception positively influences digital adoption in MSMEs

For Hypothesis 2, the standardized regression weight coefficient between the variables "entrepreneurs' perception" and "digital adoption" is -0.137, with a critical ratio of -0.711 and a probability of 0.477, which is greater than 0.05 ($p > 0.05$). This suggests that entrepreneurs' perceptions have no significant influence on digital adoption in MSMEs. This outcome does not align with the results of the previous studies by Giao et al. (2020), Zhou et al.(2019), and Huang et al.(2019). Further research is warranted to investigate this result more deeply.

Conclusion: Hypothesis 2 was not supported.

Hypothesis 3: The entrepreneur's intention positively influences the digital adoption in MSMEs

In Hypothesis 3, the relationship between "entrepreneurs' intention" and "digital adoption" is supported by a standardized regression weight coefficient of 0.685 and a critical ratio of 3.149, with a probability of 0.002, indicating significance ($p < 0.05$). This implies that entrepreneurs' intentions significantly affect digital adoption in MSMEs. Notably, this result aligns with the findings of the previous studies conducted by Giao et al. (2020), Zhou et al.(2019), and Huang et al.(2019).

Conclusion: Hypothesis 3 was supported.

Therefore, from the analysis of the hypothesized conceptual model (Figure 1) and the results presented in Table 6, Hypothesis 1 and 3 are supported, whereas Hypothesis 2 is not supported.

DISCUSSION

The findings of the study reveal that the majority of entrepreneurs in the MSME sector are aware of the schemes and digital initiatives of SIDBI that are specifically introduced to support them during digital transformation.

The primary contribution of this study to the existing literature lies in its exploration of how entrepreneurs' awareness, perception, and intention influence the promotion of digitalization within the industrial sector.

According to the findings, the first hypothesis,

H1: *Entrepreneurs' awareness positively influences the digital adoption in MSMEs*.

The affirmation of Hypothesis 1 signifies that entrepreneurs' awareness of supporting schemes that help them transform digitally increases their chances of digital adoption in their business.

H2: *Entrepreneurs' perceptions positively influence digital adoption in MSMEs.*

The non-validation of the hypothesis shows that the perception of entrepreneurs, whether positive or negative, does not influence small entrepreneurs' adoption of digitalization.

H3: *Entrepreneurs' intentions to adopt digital initiatives have a favourable impact on the adoption of digitalization in MSMEs.*

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From the above hypotheses, it can be concluded that the strong intention of entrepreneurs to digitalize their businesses ultimately paves the way to embrace digitalization in business. This collective evidence suggests that among the three factors examined, the two factors (awareness and intention) contribute equally to the adoption of digitalization by Indian MSMEs.

As shown in Table 4, the results of model testing demonstrated a satisfactory fit that met the established thresholds. The assessment encompasses various categories, including statistical, absolute, incremental, and parsimony fit measures.

In terms of Statistical Measures, the values of chi-square (CMIN) and Degrees of Freedom (DF) are provided, whereas Absolute Fit Measures show CMIN/DF, RMSEA, GFI, and AGFI, which meet the criteria with values of 0.034, 0.057, 0.927, 0.940, and 0.913, respectively.

The Incremental Fit Measures, CFI, IFI, and TLI, exhibited values of 0.971, 0.972, and 0.963, respectively. Additionally, Parsimony Fit Measures, represented by the PNFI, PCFI, and PGFI, display values of 0.685, 0.761, and 0.650, respectively. All of these values fell within the defined thresholds, confirming the model's overall fit.

CONCLUSIONS

The study concludes that hypotheses H1 and H3 are accepted, indicating a significant relationship among the factors examined in the study, and that each factor has a direct positive effect on the adoption of digitalization in small businesses. On the other hand, Hypothesis H2 is rejected, not showing a significant relationship between the perception of entrepreneurs and the adoption of digitalization.

In summary, it can be concluded that the level of awareness among entrepreneurs and their intent to integrate digitalization exerts a substantial influence on technology adoption within businesses. Conversely, entrepreneurs' perceptions, whether positive or negative, did not demonstrate a statistically significant correlation with the rate of digital adoption.

This discovery constitutes a novel addition to academic literature. It not only corroborates the outcomes documented in prior studies but also underscores the robustness and consistency of the identified relationships among the key constructs.

The inclusion of SIDBI offers a unique perspective that enhances the current knowledge base in this field.

Undoubtedly, SIDBI's digital initiatives present a pathway for progress in the digital adoption journey. As SIDBI continues to spearhead initiatives for digital transformation, collaboration between institutions and entrepreneurs has become pivotal. SIDBI's vision is not only to deploy digital tools but also to foster a digital mindset that permeates every aspect of entrepreneurial decision-making. This road to a digitally ready MSME ecosystem will lead to ongoing dialogue, mutual understanding, and a commitment to innovation, empowering MSMEs for a 'Digital Tomorrow.

The implications drawn from this study offer valuable insights into the practical applications and potential impacts of the research findings on various stakeholders and aspects related to digitalization in the MSME sector, discussed under the following two heads:

- *Theoretical Implications*

This study offers valuable insights into the dynamics of digital adoption within the MSME sector by investigating how entrepreneurs' awareness, perceptions, intentions, and digital adoption are interconnected. Through empirical analysis, it addresses a significant gap in the existing literature, particularly by shedding light on how knowledge of supportive initiatives influences efforts towards digitalization. Consequently, this study enriches our understanding of the digital transformation process in small businesses. Furthermore, by validating the theoretical constructs of awareness, perception, and intention in the context of digital adoption, this study emphasizes their critical role in fostering digitalization within MSMEs, thereby fortifying the theoretical framework for future studies in this area. Additionally, the utilization of the SEM-AMOS model in this research contributes methodologically by demonstrating its efficacy in scrutinizing the complex relationships between variables relevant to digital adoption. This approach can be emulated by future researchers to delve into the diverse aspects of digital transformation across various contexts, thereby propelling scholarly advancement in this field.

- *Practical Implications*

This study has significant practical implications for policy formulation, entrepreneurial decision-making, collaborative efforts, risk mitigation, and future research directions in the context of digitalization within the MSME sector. Policymakers can utilize these findings to tailor schemes and initiatives aimed at supporting digitalization efforts by prioritizing initiatives that enhance entrepreneurs' awareness of the available support mechanisms. Entrepreneurs armed with insights from this

study can make informed decisions regarding their digitalization strategies and actively engage with relevant schemes and initiatives to facilitate their journey towards digital transformation. Furthermore, the study emphasizes the importance of collaborative efforts between institutions, such as SIDBI and MSMEs, in driving digitalization, suggesting that entrepreneurs can benefit from participating in collaborative endeavours to access the resources, knowledge, and expertise necessary for successful digital adoption. Understanding the role of awareness in mitigating the risks associated with digital adoption, entrepreneurs can approach digital transformation with greater confidence and navigate challenges and uncertainties more effectively. Finally, this study identifies avenues for future research, encouraging academics, policymakers, and practitioners to explore mediating and moderating factors, as well as cross-cultural perspectives, to gain deeper insights into the intricacies of digitalization in MSMEs and inform more targeted interventions and strategies.

- *Recommendations and Future Direction*

The outcome adds valuable insights to the limited body of literature dedicated to the digitalization of MSMEs and how awareness of supporting schemes can lead to the adoption of digitalization in any sector. If supportive schemes are available, risk can be mitigated, and entrepreneurs can take a step forward in the journey of digital transformation. Navigating the uncharted terrain of entrepreneurs' involvement in digitalization opens up numerous exciting research avenues that promise to deepen our understanding of the dynamics at play. The application of the SEM-AMOS model has been instrumental in providing valuable insights and paving the way for future investigations in several key areas.

However, a comprehensive exploration of the mediating effects among awareness, perception, and intention can also be studied in the future, along with the investigation of other potential moderation factors. Variables such as industry type, geographical location, and organizational size can act as moderators, influencing the impact of awareness, perception, and intention on digitalization.

Moreover, cross-cultural perspectives add another layer to the research. Exploring how cultural variations influence entrepreneurs' awareness, perception, and intention regarding digitalization within diverse contexts and perspectives contributes significantly to the field.

Addressing these future directions promises to contribute to a more exhaustive perspective and nuanced understanding of the factors influencing digitalization in MSMEs. Such insights will prove invaluable for policymakers, practitioners, and entrepreneurs, as they navigate the continually evolving landscape of technology adoption.

ADDITIONAL INFORMATION

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The Authors declare that there is no conflict of interest.

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ВИВЧЕННЯ ВЗАЄМОДІЇ ОБІЗНАНОСТІ, СПРИЙНЯТТЯ ТА НАМІРІВ ПІДПРИЄМЦІВ У СТИМУЛЮВАННІ ЦИФРОВІЗАЦІЇ МІКРО-, МАЛИХ ТА СЕРЕДНІХ ПІДПРИЄМСТВ: СФОКУСОВАНИЙ ПОГЛЯД НА РОЛЬ БАНКУ РОЗВИТКУ МАЛИХ ГАЛУЗЕЙ ПРОМИСЛОВОСТІ ІНДІЇ (SIDBI)

За останні роки динаміка бізнесу зазнала значних змін, насамперед завдяки цифровій революції. Мікро-, малі та середні підприємства (ММСП) визнані наріжним каменем економічного зростання й розвитку, а їхня адаптивність до цієї цифрової ери має першорядне значення.

Це емпіричне дослідження досліджує складний взаємозв'язок між обізнаністю, сприйняттям і намірами підприємців та їхнім впливом на впровадження цифровізації з акцентом на цифрові ініціативи Банку розвитку малих галузей промисловості Індії (SIDBI), метою яких є цифрова трансформація ММСП. Різні конструкти, такі як обізнаність, сприйняття й наміри підприємців, використовують для оцінки впровадження цифрових технологій у малому бізнесі. Досліджуючи рівень обізнаності, сприйняття й намірів підприємців, ми прагнемо виявити фундаментальні фактори, які формують їхній стратегічний вибір щодо впровадження цифрових технологій.

У цьому дослідженні використовується моделювання структурних рівнянь (SEM) за допомогою AMOS, а також метод пояснювального опитування. Він передбачає залучення індійських ММСП із загальною кількістю 300 учасників. З них 220 успішно подали повністю заповнені анкети через Google Forms.

Цікаво, що експертиза дослідницької моделі виявила багатообіцяючі результати за рахунок досягнення порогових значень CFI, RMSEA та інших подібних заходів. Результати свідчать, що обізнаність і наміри підприємців позитивно впливають на впровадження цифрових технологій у ММСП, тоді як сприйняття підприємців не має значного впливу на впровадження цифрових технологій у ММСП.

Це дослідження має значні практичні наслідки для формулювання політики ухвалення підприємницьких рішень, спільних зусиль, зниження ризиків та майбутніх напрямів досліджень у контексті цифровізації в секторі ММСП.

Ключові слова: обізнаність, сприйняття, намір, цифрове прийняття, SIDBI, ММСП, фінансові установи, інновації, економічне зростання, підприємництво

JEL Класифікація: O3, O16, O33, G2, G33