INTERNATIONAL JOURNAL OF eBUSINESS AND eGOVERNMENT STUDIES
Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410
Received: 15.08.2024 | **Accepted:** 20.12.2024 | **Published Online:** 30.12.2024

-RESEARCH ARTICLE-

THE MEDIATING ROLE OF DIGITAL AND FINANCIAL LITERACY IN DIGITALISATION INTENSITY OF INDONESIAN SMES: INNOVATION, COMPLEXITY, NETWORKING

Ignatius Edward Riantono*

Department of Management, BINUS Business School Doctor of Research in Management, Bina Nusantara University, Jakarta, Indonesia
ORCID: https://orcid.org/0000-0002-7420-2129
Email: iriantono@binus.edu

Toto Rusmanto

Department of Management, BINUS Business School Doctor of Research in Management, Bina Nusantara University, Jakarta, Indonesia
ORCID: https://orcid.org/0000-0002-6600-3525
Email: trusmanto@binus.edu

Sri Bramantoro Abdinagoro

Department of Management, BINUS Business School Doctor of Research in Management, Bina Nusantara University, Jakarta, Indonesia
ORCID: https://orcid.org/0000-0002-8010-6571
Email: sabdinagoro@binus.edu

Dezie Leonarda Warganegara

Department of Management, BINUS Business School Doctor of Research in Management, Bina Nusantara University, Jakarta, Indonesia
ORCID: https://orcid.org/0000-0001-5425-3079
Email: dezie@binus.edu

—Abstract—

To address the existing knowledge gap hindering companies in their pursuit of digital adoption, this study examines the interplay between digital literacy and financial

Citation (APA): Riantono, I. E., Rusmanto, T., Abdinagoro, S. B., Warganegara, D. L. (2025). The Mediating Role of Digital and Financial Literacy in Digitalisation Intensity of Indonesian SMES: Innovation, Complexity, Networking. *International Journal of eBusiness and eGovernment Studies, 16*(4), 192-214. doi:10.34109/ijebeg.2024160410

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

literacy (FL) in influencing the digital transformation (DT) of Small and Medium-Sized Enterprises (SMEs) in Indonesia. Despite the challenges associated with digitalisation, Indonesian SMEs continue to serve as key contributors to national economic development. The study investigates how DT and organisational competitiveness are shaped by digital and financial capabilities, considering the mediating roles of business complexity, innovation, and networking. Furthermore, it assesses how owners' perceptions of digital innovation, business complexity, growth orientation, governmental support, and networking activities are affected by digital intensity, with both digital and financial literacy functioning as mediating variables influencing the perceived advantages of digital adoption. A quantitative analysis was conducted using structural equation modelling (SEM) on data collected from SMEs across various Indonesian regions. The findings reveal that when mediated by digital literacy (DL), owners' attitudes towards digital innovation significantly enhance the digital intensity of SMEs. In contrast, business complexity does not exhibit a meaningful influence through this mediating pathway. While government intervention does not demonstrate a significant effect, growth orientation emerges as a strong predictor of digital intensity, with DL again serving as a mediating factor. Similarly, DL positively mediates the relationship between business networking and digital intensity among SMEs. With respect to FL as a mediating factor, business complexity shows no substantial effect on SMEs' digital intensity. However, FL does positively mediate the relationships between digital intensity and three key elements: growth orientation, government intervention, and business networking, indicating their notable contribution to the perceived benefits of digitalisation.

Keywords: Digital Transformation, Digitalisation, Small Business, Digital Intensity, Digital Innovation

INTRODUCTION

Achieving consistent economic growth remains a prominent macroeconomic challenge, and SMEs are central to this objective. While they contribute significantly to national development, SMEs are frequently confronted with various obstacles, particularly in terms of financial transparency. The absence of clear financial documentation makes it difficult for lenders to accurately assess the financial stability of SMEs, thereby hindering their access to external financing (Siagian et al., 2024). This problem is intensified when banks lack sufficient information, often resulting in limited lending to SMEs. Consequently, the risk of default increases, further exacerbated by insufficient collateral and weak financial management practices (Anshika & Mallik, 2021).

The situation is especially critical in developing nations, where low levels of FL continue to pose a serious constraint. Insufficient FL not only impairs access to funding but also undermines the potential of SMEs to sustain and expand their operations (Karadağ et al., 2015). In addition to financial challenges, SMEs face external

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

impediments such as burdensome regulatory procedures, complex taxation systems, and inadequate technical knowledge. Institutional support from banks, governmental bodies, and corporate entities is often insufficient, further restricting the capacity of SMEs to contribute effectively to economic growth (Atkinson, 2017). Barriers such as limited access to finance, innovation, and managerial expertise also inhibit SME participation in the Global Value Chain (García-Pérez-de-Lema et al., 2021).

Despite these limitations, recent developments in technology and internet access have created new opportunities for SMEs, particularly in enhancing productivity, competitiveness, and access to international markets (Sudrajad et al., 2023). Nevertheless, in developing economies, SMEs generally lag behind larger firms in adopting e-commerce. This disparity is largely due to several persistent challenges, including limited digital skills, regulatory constraints, and underdeveloped IT infrastructure (Li et al., 2018). Given the momentum of Industry 4.0, SMEs must embrace digital technologies to remain competitive. Although many studies have investigated the factors influencing e-commerce adoption, few have considered the perspectives of SME owners or managers, with most focusing on the role of IT administrators (Hadiyati & Mulyono, 2024). Such oversight may lead to adverse outcomes as SMEs navigate increasingly dynamic technological environments, exposing them to additional operational risks.

Emerging research highlights that digital and FL are critical for improving SME performance and advancing digitalisation. However, there remains limited consensus regarding the role of DL in supporting digital strategies, organisational behaviour, and IT capability development (Yanto et al., 2022). Evidence suggests that techno-financial literacy can improve performance and risk mitigation among SMEs (Kulathunga et al., 2020). Access to digital finance serves as a bridge between FL and SME performance, with mobile money rapidly emerging as a dominant digital platform (Frimpong et al., 2022). Both FL and DL are viewed as essential for ensuring SME success within an increasingly digital economy. FL enables owners to make informed financial decisions, which are fundamental to business growth and competitiveness (Azira et al., 2024). This research investigates the interrelation between DL, FL, and DT among Indonesian SMEs. It explores the views of SME owners concerning digital innovation, business complexity, networking, government support, and growth strategies. The study also analyses how FL and DL serve as mediating variables in the DT process. Employing a quantitative method through Structural Equation Modeling (SEM), the research aims to determine key factors that influence SMEs' digital engagement and assess how FL and DL can either facilitate or hinder these dynamics. Additionally, case studies and policy recommendations are presented, aimed at guiding the design of customised training initiatives to enhance digital resilience and sustainability among SMEs.

This research contributes to the broader understanding of how Indonesian SMEs can

Vol: 16 No: 4 Year: 2024 ISSN: 2146-0744 (Online) (pp.192-214) Doi: 10.34109/ijebeg.2024160410

overcome digital adoption barriers while strengthening their ability to engage in digital economic activities. During the COVID-19 pandemic, many Indonesian SMEs combined physical and digital marketing approaches to sustain operations and accelerate their DT (Kurniawati et al., 2021). As Indonesian SMEs increasingly acknowledge the value of technology in fostering growth, this study sheds light on how digital and FL can support them in improving their global market presence. Specifically, it examines how these forms of literacy mediate the influence of innovation, complexity, networking, and government intervention on SME digitalisation. By assessing these relationships, the study offers insights into how DT can be enhanced and how SMEs can maintain competitiveness, thereby enabling policymakers to develop a more supportive digital ecosystem.

LITERATURE REVIEW

Entrepreneurial Value Creation Theory

The entrepreneurial process is initiated when an entrepreneur identifies an external opportunity and effectively aligns existing resources to cultivate specific entrepreneurial competencies. To generate sustainable value and secure long-term benefits, the entrepreneur may seek additional resources as necessary (Mishra & Zachary, 2015). Consequently, the identified opportunity is refined in a way that facilitates the development of entrepreneurial capabilities, thereby conferring a competitive advantage. These capabilities, validated through a proof of concept, represent a synthesis of the redefined opportunity and the resources mobilised (Mishra & Zachary, 2015). In the course of this process, entrepreneurs are required to make strategic decisions concerning financing, team structure, resource mobilisation, design of experimental initiatives, and the safeguarding of intellectual property.

This area remains insufficiently addressed within current academic literature. In response, the present study proposes a contingent approach that assists entrepreneurs in aligning their value creation perspectives with optimal strategic actions, thereby offering critical insights to support future decision-making (Wuebker et al., 2023). For SMEs, the ability to create value is increasingly reliant on the adoption of DT. Empirical studies highlight that the utilisation of digital technologies can lead to improvements in organisational performance, the generation of social value, and the advancement of economic sustainability. A comprehensive framework for SMEs' DT planning encompasses technology implementation, value generation, operational transformation, adaptation requirements, and financial planning (Vrontis et al., 2022). This study applies the Entrepreneurial Value Creation Theory to investigate how SMEs generate value through DT. It examines how innovation, complexity, and networking influence digitalisation, with digital and FL functioning as mediating variables. This analytical lens underscores how entrepreneurs strategically leverage resources, competencies, and

Vol: 16 No: 4 Year: 2024 ISSN: 2146-0744 (Online) (pp.192-214) Doi: 10.34109/ijebeg.2024160410

external conditions to enhance competitiveness and promote sustainable business development.

Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis (1989), serves as a foundational framework for analysing how individuals and organisations adopt, accept, and utilise information technology. The model centres on two principal constructs: perceived usefulness and perceived ease of use. A thorough comprehension of these constructs is essential to determine how information systems (IS) are implemented in educational contexts, thereby enabling the effective utilisation of technological capabilities (Zaineldeen et al., 2020). Contemporary research highlights the significance of DT for SMEs, while also acknowledging the inherent complexities involved in its implementation. In particular, SME readiness for DT has been explored through frameworks that emphasise the importance of considering non-technological factors as integral to the transformation process (Silva et al., 2023).

A review of the literature on TAM and the adoption of e-commerce by SMEs reveals an ongoing expansion of the model to incorporate external influences. (Silva et al., 2023) provide a critical evaluation, noting the presence of inconsistent findings in studies of DT within SMEs. They propose a set of standardised dimensions to facilitate more consistent assessment of DT in these enterprises. In this study, TAM is utilised to investigate the influence of financial and DL on the extent of SME digitalisation. According to TAM, the perceived benefits and usability of digital technologies play a pivotal role in shaping adoption behaviours. As digital and FL reduce the adverse impacts associated with complexity, innovation, and networking, SMEs become more capable of embracing technological solutions. This enhanced readiness contributes to more effective DT, ultimately strengthening SMEs' competitive positioning within the digital economy.

Social Network Theory

Social Network Theory explores the patterns and dynamics of relationships among individuals and groups. Empirical evidence suggests that such relationships exert considerable influence across various domains, including behaviour, health, and education (Dunn, 1983). Insights from disciplines such as sociometry, interpersonal communication, and ethnographic research have significantly shaped this theoretical framework (Liu et al., 2017). Core elements in social network analysis include centrality, structural equivalence, and cohesiveness. These are typically evaluated through metrics like degree, closeness, and betweenness (Liu et al., 2017). Another perspective on social networks involves graphical illustrations, where nodes symbolise individuals and edges denote their interconnections. These visualisations help to identify and interpret influence structures, often segmented into three analytical levels

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

(Erçetin & Neyişci, 2016).S Recent investigations into the DT of SMEs have highlighted certain critical attributes. However, the existing literature continues to lack comprehensive, actionable guidance tailored to the specific digitalisation challenges faced by SMEs (Hu et al., 2024). This research draws on Social Network Theory to assess the impact of business networking on the digitalisation levels of SMEs. Well-developed networks provide access to critical resources, knowledge, and support, thereby facilitating the adoption of digital tools. The influence of these networks is shaped by the mediating roles of digital and FL, which enable SMEs to optimise their connections to navigate transformation challenges, mitigate complexity, and drive innovation-led growth in increasingly competitive market environments.

RESEARCH METHODS

Research methods refer to the systematic strategies, techniques, and procedures employed by researchers to gather, analyse, and interpret data. These methods are typically categorised into three types: hybrid, qualitative, and quantitative. The selection of a specific methodological approach is closely aligned with the nature of the data, the aims of the research, and the guiding questions or objectives of the study. In this research, data were collected through a questionnaire, which comprises a structured set of pre-formulated questions designed to elicit responses from participants (Sekaran & Bougie, 2016). The questionnaires were distributed either electronically or through direct delivery to the selected respondents at the designated research sites.

The unit of analysis in this study refers to the total data accumulated within a defined timeframe. A quantitative approach was adopted, employing multivariate analysis to systematically evaluate the interrelationships among the variables under investigation. Specifically, the study utilised a multivariate technique known as SEM, focusing on component-based methods such as Partial Least Squares (PLS) and least squares estimation for both single and multi-component models. This methodological framework facilitates hypothesis testing and the statistical assessment of theoretical relationships among multiple variables (Murad et al., 2024). Primary data were gathered through field-based surveys, which incorporated several innovative data collection techniques (Zeithaml et al., 2020). The unit of analysis in this context includes Indonesian SMEs that have undergone digital transformation. In this study, the organisation represents the unit of analysis, with participants comprising business owners or operators of SMEs identified as digitalised MSMEs. The hypotheses proposed in this research are as follows:

H1: *The Effect of Owner's Attitudes towards Digital Innovation on SMEs Digital Intensity mediated by Digital Literacy.*
H2: *The Effect of Business Complexity on SMEs Digital Intensity mediated by Digital Literacy.*

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

H3: *The effect of Growth Orientation on SMEs Digital Intensity mediated by Digital Literacy.*
H4: *The Effect of Government Intervention on SMEs Digital Intensity mediated by Digital Literacy.*
H5: *The Effect of Business Networking on SMEs Digital Intensity mediated by Digital Literacy.*
H6: *The Effect of Business Complexity on SMEs Digital Intensity mediated by Financial Literacy for Perception to Digital Benefit.*
H7: *The Effect of Growth Orientation on SMEs Digital Intensity mediated by Financial Literacy for Perception to Digital Benefit.*
H8: *The Effect of Government Intervention on SMEs Digital Intensity mediated by Financial Literacy for Perception to Digital Benefit.*
H9: *The Effect of Business Networking on SMEs Digital Intensity mediated by Financial Literacy for Perception to Digital Benefit.*

Figure 1 illustrates the conceptual framework of the study, while the development of the conceptual framework is depicted in Figure 2.

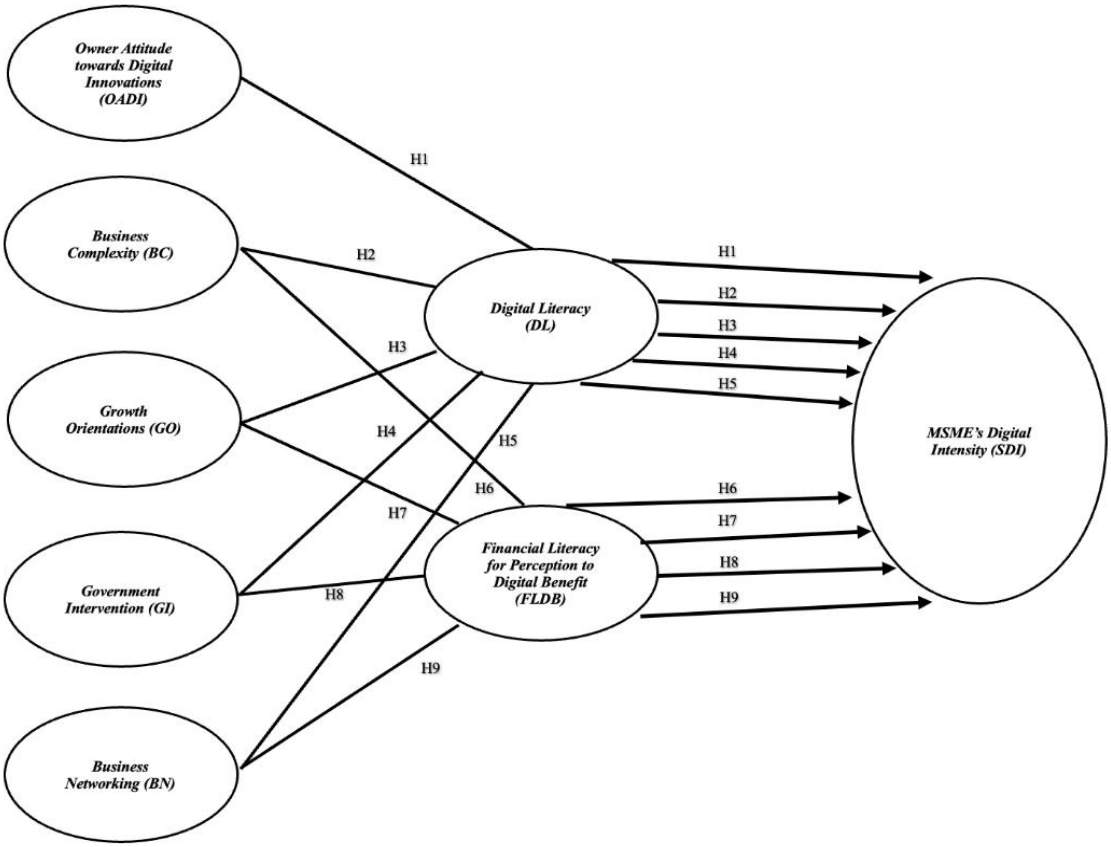

Figure 1: Conceptual Framework

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

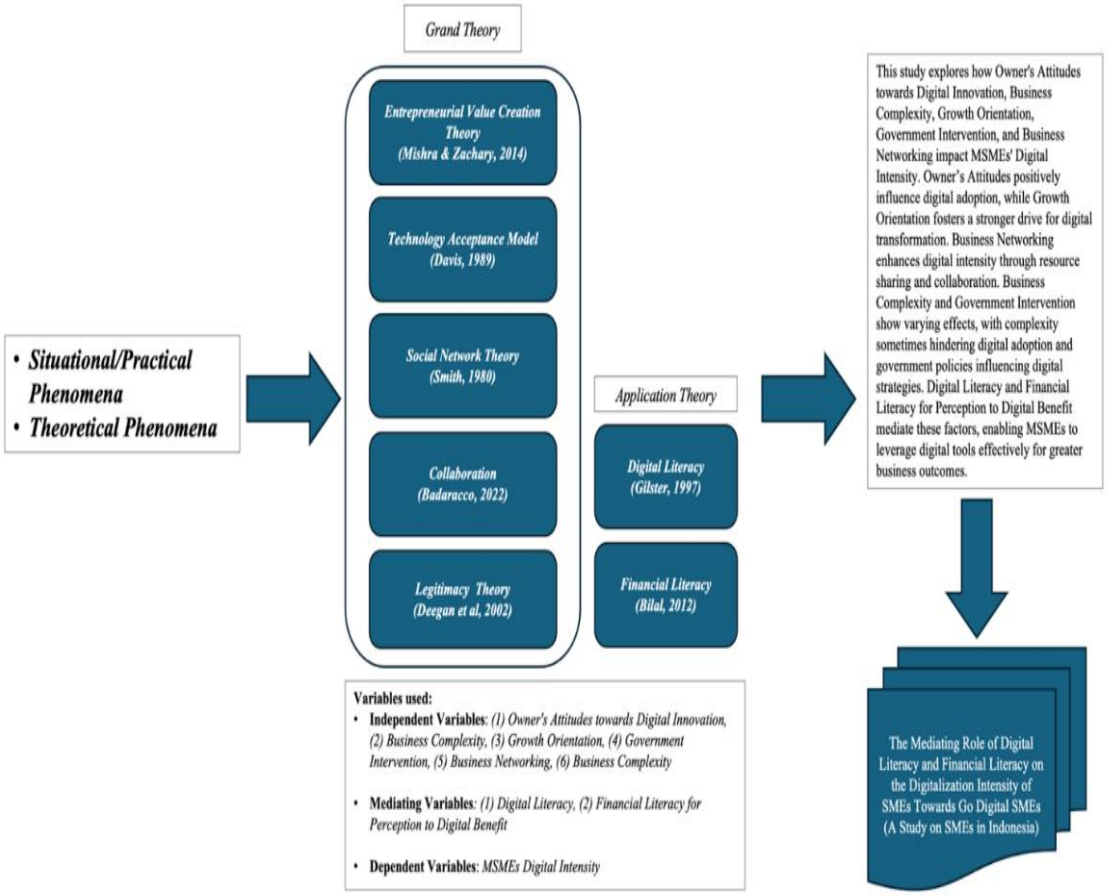

Figure 2: Conceptual Thinking Building a Framework

This study aims to explore how SME owners' perspectives on digital innovation, business complexity, growth orientation, government involvement, and business networking influence the growth and digital transformation of Indonesian SMEs. Furthermore, by examining financial and digital aspects—specifically DL and FL—the research seeks to assess how these factors may facilitate or motivate SMEs to engage in digitalisation. The study involved 265 SME owners, each representing a distinct enterprise based on the respondents' demographic profiles. The majority of participants were located in Java, while fewer responses were received from Sumatra, Kalimantan, Sulawesi, Maluku, Bali, East Nusa Tenggara (NTT), West Nusa Tenggara (NTB), and Papua. The geographical distribution of respondents is illustrated in Figure 3. Moreover, based on the classification of SMEs by business type, 48.1% of the respondents operated within the food and beverage (F&B) sector. This was followed by the service sector, which comprised 11.2% of the sample, and the fashion sector, which accounted for 10.4%. The distribution of SME business types is illustrated in Figure 4.

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

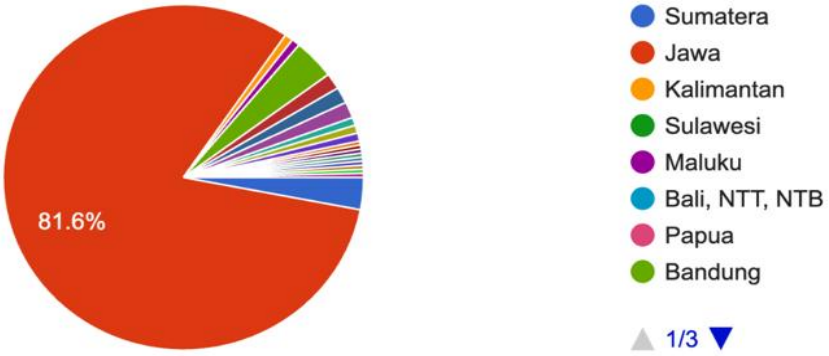

Figure 3: Respondent Location

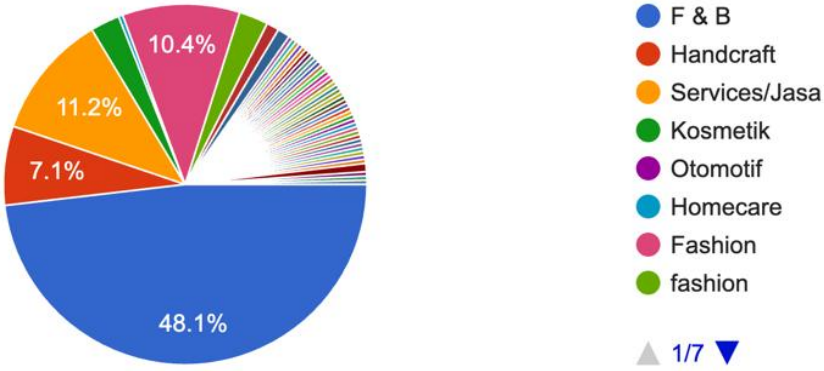

Figure 4: Type of SMEs

An analysis of business types within the MSME sector reveals that 48.1% of survey respondents operate in the F&B industry, underscoring the sector's critical importance to SMEs. The dynamic and rapidly evolving nature of the F&B industry continues to attract entrepreneurs, many of whom perceive it as a profitable avenue that enables the cultivation of customer relationships through the production of appealing products. Furthermore, the diversity of SME business types is reflected in the 11.2% of respondents involved in the services sector, which encompasses a wide array of activities such as consultancy, beauty services, repairs, and other specialised offerings. This diversity signals growing consumer demand for tailored solutions that meet varied needs. The fashion industry, known for its emphasis on creativity and innovation, also attracts a diverse consumer base, further contributing to the spectrum of SME engagement.

The current study, offers a comprehensive rationale for the selection of variables, methodology, and sampling period. Each variable was chosen based on its relevance to evaluating the DT of SMEs. Business complexity refers to the development of extensive, interconnected systems comprising technologies, data, services or products, and personnel within a business. In contrast, business networking is concerned with establishing professional relationships with individuals and organisations, often

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

stimulated by business growth, product diversification, and innovation. The extent to which SMEs comprehend DL, FL, and the benefits associated with digitalisation influences their preparedness to adopt digital technologies. Government intervention refers to policy actions undertaken by authorities that shape decisions made by individuals, organisations, and communities concerning socio-economic matters. Growth orientation denotes the strategic trajectory an organisation pursues in its development.

Digital intensity among SMEs is measured through a composite index based on survey data regarding ICT adoption and e-commerce practices, while owners' attitudes towards digital innovation reflect a leadership mindset that embraces change. The study employs a multivariate analytical method known as SEM to investigate the interrelationships among the selected variables. SEM facilitates the depiction of causal links—similar to how connections in neurological studies are represented using fMRI—using path coefficients to reflect the magnitude of these relationships. Each variable's reliability is affirmed by factor loadings exceeding 0.70. A cross-sectional survey approach was applied, with quantitative analysis conducted at the organisational level to capture prevailing trends. Findings suggest that many SMEs invested in digital tools in response to the COVID-19 pandemic. However, notable differences were observed across industries, particularly between manufacturing and service sectors, as well as between simpler and more advanced digital solutions. The adoption of digital technology appears to be influenced by SMEs' existing technological capabilities, internal resources, and collaborative networks with technology providers. With attention to the policy context in the post-pandemic era, the study offers valuable insights into the drivers of digital transformation in Indonesia's SME landscape.

RESULT

As an initial phase of the study, the researcher designed and conducted a pilot test to assess the reliability and validity of the employed instruments. This preliminary testing involved at least 30 participants, all selected to reflect the characteristics of the intended study population. To ensure broad representativeness, individuals from diverse backgrounds and demographic profiles were included. During this phase, participants were provided with the questionnaires and data collection tools, and their feedback was solicited regarding the clarity of items, instructions, and overall structure. The pilot test yielded several important insights. It was observed that certain items required refinement to enhance their clarity and contextual relevance, as some respondents experienced difficulty interpreting specific questions. Furthermore, the variability in participant responses indicated potential differences that could arise during the full-scale data collection process.

Based on these insights, the researcher revised the data collection instruments.

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

Ambiguous items were removed, instructions were revised for improved comprehension, and the arrangement of some variables was adjusted. As a result, the researcher gained confidence in the instruments' ability to validly and reliably capture the intended variables. The pilot test proved to be a critical preparatory step, enabling the identification and correction of issues prior to the main study. The findings from this phase reflected an encouraging outcome: participant feedback and subsequent analysis indicated strong content validity and accurate measurement of the target constructs. Moreover, a high level of response consistency was observed, affirming the reliability of the instruments.

Data Analysis Results and Respondent Profile

Findings derived from 265 SME respondents indicate that a considerable proportion possess adequate internal competencies and knowledge in both digital and FL domains. The data reveal that most SME owners demonstrate proficiency in the use and operation of various digital tools, including smartphones, tablets, and personal computers. Furthermore, interviews with key stakeholders and business proprietors suggest a favourable perception of digital innovation. Many respondents expressed the belief that integrating digital technologies into business operations would be beneficial to their enterprises. In addition to adopting new technologies, these business owners also displayed adaptability and flexibility in adjusting to novel processes, reflecting confidence in the potential of digital innovation to support enterprise growth. This optimism extends to their expectations of enhanced productivity, improved efficiency, and strengthened competitiveness within a rapidly changing market landscape. Respondents also recognised the capacity of digital innovation to extend market reach and generate new business opportunities.

The readiness to investigate and utilise emerging technologies reflects a forward-looking attitude and a determination to align with evolving business trends (Murad et al., 2025). Collectively, this optimistic viewpoint indicates that entrepreneurs perceive digital innovation not only as a necessary adaptation but also as a strategic tool for business expansion and resilience. As they acknowledge the potential for sustaining a competitive advantage in the digital era, SME owners are more likely to revise existing practices, engage in skills development, and incorporate digital tools aligned with their organisational goals. Therefore, this positive disposition serves as a key driver in facilitating transition towards a more technologically advanced and modern business environment.

Convergence Validity Test

Table 1 evaluates convergent validity through the application of Cronbach's alpha and the Average Variance Extracted (AVE). A minimum threshold of 0.70 is required for Cronbach's alpha to confirm internal consistency, while the AVE must meet or exceed

Vol: 16 No: 4 Year: 2024 ISSN: 2146-0744 (Online) (pp.192-214) Doi: 10.34109/ijebeg.2024160410

0.50 to establish adequate convergent validity (Bujang et al., 2018). The Cronbach's alpha values for Government Intervention, Growth Orientation, Owner's Attitudes toward Digital Innovation, DL, FL, Digital Benefit, Business Complexity, Business Networking, and SME Digital Intensity all exceed the minimum threshold of 0.70. This indicates a strong degree of internal consistency in the measurement of these constructs.

Specifically, Cronbach's alpha values above 0.70 confirm the reliability and validity of the instruments employed to assess these variables. These results suggest that the data collected are both consistent and dependable, reflecting the underlying concepts with accuracy. Moreover, the high reliability demonstrated through the outer loading test reinforces confidence in the representativeness of the variables, supporting their suitability for capturing the intended attributes within this research. Following the confirmation of validity and reliability, the study proceeds with the assurance that the data utilised for analysis are credible. Conducting further analysis using data that have successfully passed the outer loading assessment allows for the extraction of more robust and dependable insights into the relationships among the variables, thereby strengthening the overall conclusions of the research. As indicated in Table 1, the AVE values for each construct exceed the widely recognised minimum threshold of 0.50, affirming the adequacy of convergent validity across all measured variables.

Table 1: Results of Convergent Validity Test

Construct	Cronbach's α	Composite Reliability	Average Variance Extracted
BCO	0.805	0.808	0.568
BN0	0.828	0.842	0.542
DL0	0.902	0.906	0.629
FLDB0	0.938	0.939	0.697
GI0	0.823	0.828	0.532
GO0	0.829	0.849	0.532
OADI0	0.908	0.925	0.645
SDI0	0.926	0.928	0.694

Discriminant Validity – Fornell Larcker Criterion

The findings from the discriminant validity assessment using the Fornell-Larcker criterion indicate that the variables examined in this study exhibit strong discriminant validity. The Fornell-Larcker criterion evaluates the extent to which a construct is empirically distinct from other constructs within the measurement model. Establishing discriminant validity is essential for ensuring that each construct is conceptually and statistically distinct, without exhibiting excessive correlation with others. The results demonstrate that all variables satisfy the Fornell-Larcker threshold, suggesting that each construct independently explains variance within the model, with no significant conceptual or empirical overlap among them (refer to Table 2). Given that discriminant validity has been substantiated, it can be concluded that the constructs measured in this

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

study function independently. This reinforces the reliability of the interpretation of the model, supporting the assertion that each variable offers a unique contribution to understanding the studied phenomenon and validating the robustness of the analytical outcomes concerning inter-variable relationships.

All variables in this study demonstrate strong discriminant validity, as determined by the Discriminant Validity assessment based on the Fornell-Larcker criterion. This is confirmed by the square root of the AVE for each construct exceeding the correlations between that construct and all other constructs in the model. These findings affirm that each variable represents a distinct and conceptually separable construct. Moreover, the higher variance explained within each variable, compared to the shared variance with other variables, indicates that each construct accounts for more variation in its own observed indicators than in its associations with other constructs, thereby reinforcing the integrity of the measurement model.

Table 2: Discriminant Validity using the Fornell-Larcker Criterion

	BCO	BN0	DL0	FLDB0	GIO	GO0	OADI0	SDI0
BCO	0.754							
BN0	0.638	0.736						
DL0	0.469	0.601	0.793					
FLDB0	0.564	0.671	0.749	0.835				
GIO	0.577	0.671	0.53	0.647	0.73			
GO0	0.579	0.588	0.585	0.567	0.535	0.73		
OADI0	0.299	0.449	0.525	0.386	0.408	0.597	0.803	
SDI0	0.556	0.669	0.751	0.771	0.567	0.498	0.424	0.833

Path Coefficient

Path coefficient analysis, often referred to as path analysis, is a statistical technique employed within regression analysis to evaluate and quantify the extent of influence that each independent variable exerts on the dependent variable within a defined model. This method provides clarity on both the direct and indirect effects that each variable has on others, thereby offering a comprehensive understanding of the relationships within the model. The application of the path coefficient model in this research produced highly satisfactory outcomes concerning the relationships among the variables (refer to Figure 5). Path coefficients illustrate the influence that one variable exerts on another, indicating whether such effects are positive or negative. Notably, higher coefficient values reflect a strong interdependence between variables, implying that alterations in one variable may lead to corresponding changes in another, either directly or indirectly. For the model to yield valid results, it is essential that these coefficients demonstrate both validity and reliability. The analytical findings confirm that the path coefficients are dependable and convey pertinent insights into the associations between the investigated variables. Moreover, the alignment of these coefficients with

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

theoretical expectations enhances the credibility of the model in accurately representing the dynamic interplay of variables within the study's context.

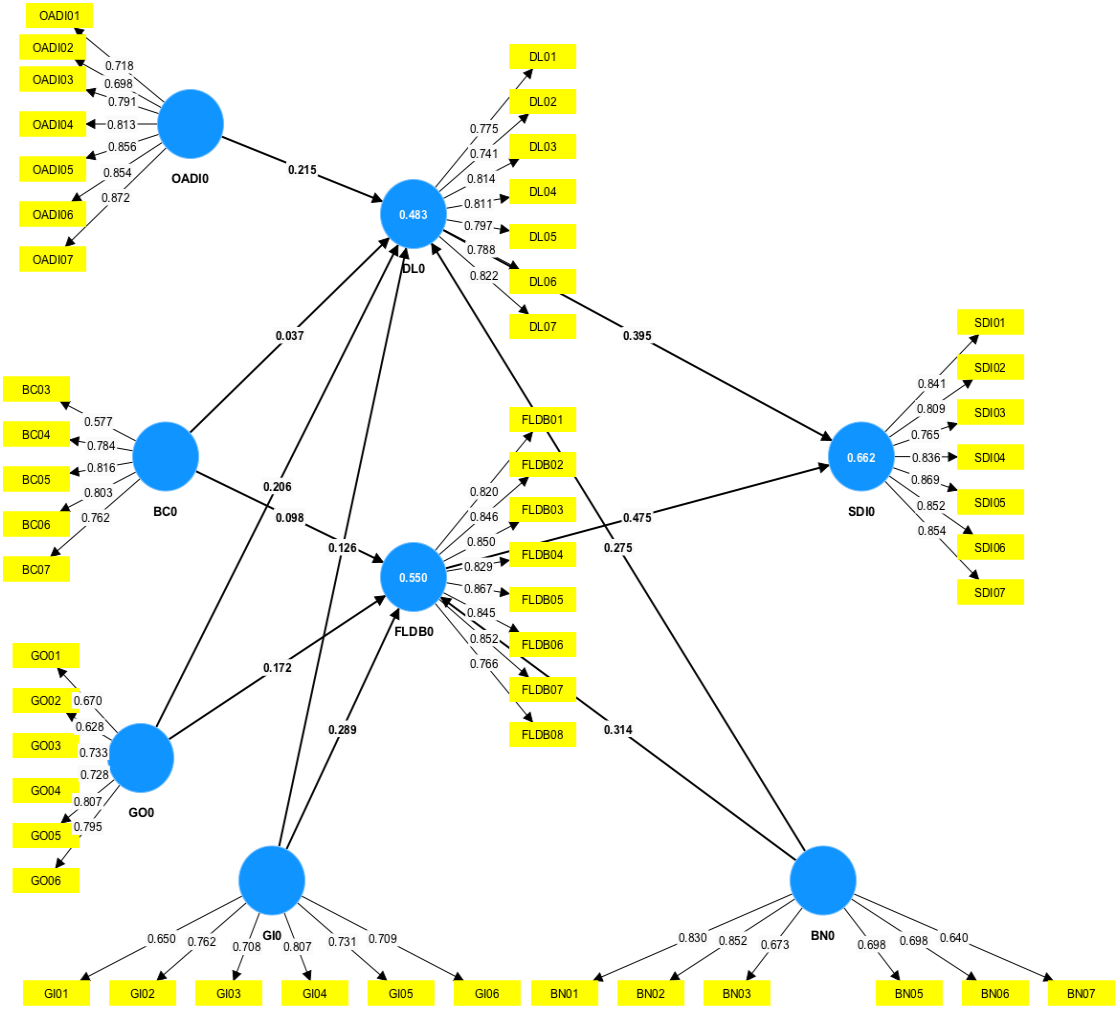

Figure 5: Path Coefficient

Hypothesis Test

Specific indirect effects play a pivotal role in SEM and path analysis, as they represent the influence of an independent variable on a dependent variable through one or more mediating variables (Fox, 1985). This analytical technique is instrumental in uncovering the underlying mechanisms that explain complex relationships among constructs. Among the available tools for conducting mediation analysis, SmartPLS has proven particularly effective in estimating path models (Nitzl et al., 2016). Moreover, indirect effects are integral to meta-analytic research, where results from multiple studies are synthesised to provide robust empirical evidence. Mediation analysis typically involves the computation of standardised direct and indirect effects through structural

Vol: 16 No: 4 Year: 2024 ISSN: 2146-0744 (Online) (pp.192-214) Doi: 10.34109/ijebeg.2024160410

coefficients presented in matrix form, thereby allowing researchers to examine causal linkages involving multiple mediators or moderated mediation pathways (Fox, 1985). The statistical significance of these relationships is evaluated by testing the null hypothesis. If the null hypothesis is rejected, the result is considered statistically significant. The p-value, as shown in Table 3, denotes the probability of obtaining the observed outcome under the assumption that the null hypothesis is true (Montoya & Hayes, 2017).

Table 3: P-Values (Indirect Effect)

Path	Original Sample	Standard Deviation	T-Statistic	P-Value
BCO → DL0 → SDIO	0.036	0.038	0.935	0.175
BCO → FLDB0 → SDIO	0.023	0.036	0.638	0.262
BN0 → DL0 → SDIO	0.135	0.051	2.666	0.004
BN0 → FLDB0 → SDIO	0.131	0.049	2.67	0.004
GIO → DL0 → SDIO	0.062	0.042	1.477	0.070
GIO → FLDB0 → SDIO	0.134	0.038	3.523	0.000
GO0 → DL0 → SDIO	0.079	0.038	2.072	0.019
GO0 → FLDB0 → SDIO	0.077	0.036	2.165	0.015
OADI0 → DL0 → SDIO	0.082	0.031	2.659	0.004

The findings presented reveal several noteworthy insights concerning the specific indirect effects of FL and DL on the perception of digital benefit. As detailed in Table 3, DL does not exhibit a statistically significant mediating effect on the relationship between SMEs' digital intensity and organisational complexity. Similarly, FL does not significantly mediate the relationship between organisational complexity and perceptions of digital benefit, nor does it mediate the link between government support and SMEs' digital intensity. Despite these non-significant mediation paths, other variables—such as the owner's attitude toward digital innovation, business networking, and growth orientation—emerge as key determinants of an SME's digital intensity. The perceived benefit of digital adoption is influenced by both FL and DL, which also act as mediating variables within this study. Their involvement indicates a meaningful connection with SMEs' level of digital intensity. Overall, the results demonstrate differential impacts of the independent variables (Owner's Attitudes toward Digital Innovation, Business Complexity, Growth Orientation, Government Intervention, Business Networking) on the dependent variable (SMEs' Digital Intensity) via the mediators (DL and FL with respect to perceived digital benefit). The variation in significance among these mediating paths underscores the intricate interrelations between constructs examined in the model.

Test Coefficient of Determination (R2)

The coefficient of determination (R^2) is recorded at 0.660, or 66%, indicating that the variation in the dependent variable, MSMEs' Digital Intensity (SDI), is explained by

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

the independent variables examined in this study—namely, Owner Attitudes towards Digital Innovations (OADI), Business Complexity (BC), Growth Orientation (GO), Government Intervention (GI), and Business Network—as well as the mediating variables DL and Favourability towards Digital Benefits (FLDB). The remaining 34% of the variance is attributable to factors not included in the present analysis (see Table 4).

Table 4: Coefficient of Determination (R2)

Construct	R^2	Adjusted R^2
DLO	0.483	0.473
FLDB0	0.55	0.543
SDIO	0.662	0.660

DISCUSSION

The acceptance of Hypothesis 1 confirms that Owners' Attitudes toward Digital Innovation significantly enhance the Digital Intensity of SMEs through the mediating role of DL. Existing research affirms that the beliefs and DL of SME owners play a critical role in facilitating digital innovation and technology adoption. Specifically, DL has been found to positively influence e-commerce implementation and overall business success among SMEs (Suryani et al., 2022). Moreover, digital innovation is primarily shaped by two pivotal factors—digital organisational culture and capabilities—which are themselves mediated by organisational readiness (Martínez-Peláez et al., 2023). Consequently, this study underscores the importance of both owners' attitudes and DL in advancing digital innovation and adoption among SMEs. The rejection of Hypothesis 2 implies that Business Complexity does not exert a statistically significant effect on the Digital Intensity of SMEs when DL serves as a mediating variable. Nevertheless, recent scholarship highlights DL as a key determinant of SME success in the digital age, particularly in terms of e-commerce engagement and the acquisition of digital marketing competencies that drive performance improvements (Puteri & Asyari, 2023). Hypothesis 3 is supported by evidence indicating that Growth Orientation positively influences SMEs' Digital Intensity via DL. DL enables SME owners to act innovatively and remain competitive, particularly in the face of rapidly evolving market conditions (Rofiqoh et al., 2023).

In contrast, Hypothesis 4 is not supported, as government assistance does not appear to significantly influence SMEs' Digital Intensity when mediated by DL. This suggests that while DL contributes to SME development, government support programmes alone may be insufficient to drive digital transformation (DT) through DL. Instead, other factors, such as business networking, owner attitudes, and growth orientation, may have a more decisive impact. The limited effectiveness of current government initiatives underscores the need for more targeted interventions that foster DL and create

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

supportive ecosystems to help SMEs integrate digital technologies more effectively (Yanto et al., 2022). Hypothesis 5 is affirmed, showing that Business Networking significantly enhances SMEs' Digital Intensity through the mediation of DL. This relationship indicates that robust business networks can facilitate access to critical digital resources, knowledge, and collaboration opportunities, thereby strengthening SMEs' digital capabilities. For these networks to be effectively leveraged for DT, both business owners and employees must possess sufficient DL. The exchange of digital knowledge among organisations accelerates the adoption of digital tools and raises SMEs' Digital Intensity, fostering improved growth and competitive positioning (Sudrajad et al., 2023).

The rejection of Hypothesis 6 reveals that Business Complexity, mediated by FL for Perception of Digital Benefit, does not significantly affect SMEs' Digital Intensity. This finding suggests that the complexity of business operations has limited influence on DT outcomes, even when SMEs possess higher levels of FL. In essence, FL may not be sufficient to counteract the challenges posed by operational complexities. It appears that SMEs' valuation of digital technologies is not substantially affected by complexity alone, and instead, variables such as owner attitudes or networking play a more substantial role in shaping digital adoption (Frimpong et al., 2022). Support for Hypothesis 7 demonstrates that Growth Orientation positively influences SMEs' Digital Intensity through the mediating effect of FL. SMEs with a pronounced focus on growth are more likely to incorporate digital technologies into their strategic plans (Shee & Kaswi, 2023). FL facilitates this process by equipping managers and business owners with the necessary understanding to evaluate the financial implications and benefits of digital investments. Consequently, growth-oriented SMEs are typically more effective in leveraging digital tools, resulting in enhanced operational efficiency and competitive advantage. This finding highlights the combined importance of FL and a growth mindset in supporting the DT of SMEs (Togun et al., 2022).

The acceptance of Hypothesis 8 confirms that higher levels of FL strengthen the impact of Government Intervention on SMEs' Digital Intensity. Government initiatives—such as funding programmes, infrastructure support, and training—can encourage the adoption of digital technologies. However, their effectiveness is significantly enhanced when SME decision-makers possess high levels of FL. This financial competence enables them to recognise and act upon the advantages of digital investments. Thus, the combination of government support and improved FL can bolster SMEs' DT efforts and performance through better resource allocation and technology-related decision-making (Jayeola et al., 2022). Hypothesis 9 is also supported, indicating that Business Networking positively influences SMEs' Digital Intensity via the mediation of FL. Government support mechanisms, including financial aid, training, and infrastructure development, encourage SMEs to adopt digital technologies. However, business managers with strong FL are more capable of assessing the implications and benefits of

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

these investments. Through sound financial decisions and appropriate technology adoption, SMEs can increase their digital intensity, thus improving their DT and overall performance (Bakashaba et al., 2024).

This research concludes that the Digital Intensity of SMEs, defined as the extent to which pervasive technologies transform routine activities, is largely driven by owners' perceptions of digital innovation. DL represents a critical barrier to effective engagement with digital tools. An understanding of how digital technologies function and their application across various domains is essential for businesses to become digitally literate. Innovation and digital competence are fundamental components of entrepreneurial value creation. The findings also align with the TAM, especially the concept of perceived ease of use, which influences technology acceptance. SMEs tend to create value more easily when the perceived difficulty of using digital technologies is low. The findings further demonstrate that Business Complexity, when mediated by DL, does not significantly affect SMEs' Digital Intensity. Instead, Growth Orientation emerges as a primary driver of success, promoting innovative strategies that enhance digital engagement. DL enables businesses to optimise the use of technology across functional areas such as customer service and inventory management. Prioritising investment in DL can improve firms' capacity to adopt digital tools, increase efficiency, and strengthen market position. Although Government Intervention has the potential to improve SME operations, the study finds its impact on Digital Intensity to be limited. DL plays a mediating role in this context, but it is not sufficient on its own to make government initiatives a decisive factor for digital advancement among SMEs.

To increase effectiveness, a combined approach involving both internal organisational action and external governmental support is recommended. Social Network Theory and Cooperation Theory provide further insights into how DL can be cultivated. Social Network Theory posits that access to digital knowledge and resources depends on interpersonal connections, whereas Cooperation Theory emphasises the role of inter-organisational collaboration in building DL. Effective strategies should aim to improve operational efficiency, encourage innovation, and extend business networks, thereby contributing to the broader development of digital competencies. FL plays an essential role in facilitating the adoption of digital technologies among SMEs. Investments in FL help firms concentrate on innovation and make informed financial decisions, forming the basis of sustainable digital strategies. With p-values below the 0.05 threshold, the study finds that Government Intervention has a significant effect on Digital Intensity primarily when mediated by FL for Perception of Digital Benefit. The research establishes a positive link between FL and digital intensity, where improvements in digital proficiency lead to higher productivity and business growth. FL and business networking create an enabling environment that fosters DT, making it imperative that future strategies focus on enhancing digital skills and expanding collaborative networks to strengthen SMEs' market share and operational outcomes.

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

CONCLUSIONS

The study highlights the critical role of both FL and DL in ensuring the success of SMEs within the digital economy. These competencies facilitate the effective adoption and utilisation of digital technologies, thereby enhancing SMEs' engagement with DT. Efficient financial management combined with a strong understanding of digital tools enables SMEs to optimise their use of DT, which in turn drives business growth and fosters long-term competitiveness. For SMEs to evolve into digitally oriented enterprises, the development of both FL and DL is imperative. DL extends beyond basic technical skills. It encompasses a comprehensive understanding of data analysis, cybersecurity awareness, and the ability to navigate digital platforms. These competencies are particularly vital in today's rapidly changing digital landscape. SMEs equipped with advanced DL are better positioned to deploy digital tools effectively, respond more swiftly to market trends, and meet evolving customer expectations.

The study underscores the need to enhance DL among SME managers and owners as a key strategy for building competitive and sustainable firms in the digital economy. FL is equally critical, with skills in cash flow management, investment planning, and risk mitigation enabling SMEs to manage financial challenges linked to digitalisation. Effective financial management supports resource allocation, promoting successful digital adoption. The research, grounded in Entrepreneurial Value Creation Theory, shows that entrepreneurs' views on digital innovation influence digital intensity, mediated by DL. The findings also align with the TAM, where perceived ease of use drives technology adoption. Although business complexity has limited effect, clear development strategies motivate digital innovation. Policy recommendations include prioritising DL initiatives, as direct government influence is limited. A combined approach involving policy, FL, and networking is needed, supported by Social Network Theory and Cooperation Theory, which highlight the value of business networks in fostering DL. Policy frameworks that promote SME networking are instrumental in facilitating the exchange of knowledge, resource sharing, and the development of essential skills. These mechanisms collectively enhance the digital readiness of SMEs. In conclusion, the study recommends a comprehensive strategy involving the concurrent implementation of DL and FL training, supported by robust networking initiatives. This integrated approach offers a solid foundation for improving the operational efficiency, competitive capacity, and market expansion of SMEs. These interventions not only strengthen individual businesses but also contribute to broader economic development, thereby reinforcing the need for a unified national strategy aimed at accelerating SME digitalisation.

REFERENCES

Anshika, S., Anju, & Mallik, G. (2021). Determinants of financial literacy: Empirical

evidence from micro and small enterprises in India. *Asia Pacific Management Review*, *26*(4), 248-255. https://doi.org/10.1016/j.apmrv.2021.03.001

Atkinson, A. (2017). Financial education for MSMEs and potential entrepreneurs. https://dx.doi.org/10.1787/bb2cd70c-en

Azira, M., Mohamed, S., & Jaffar, N. (2024). Effects of financial literacy and attitude toward money on financial capability among SMEs in Malaysia. *International Journal of Management*, *13*(4), 832-844. http://dx.doi.org/10.18488/11.v13i4.3919

Bakashaba, R., Musiita, B., & Nabachwa, S. (2024). The Mediating Role of Access to Digital Finance on the Relationship between Financial Literacy and Performance of Uganda SMEs in Mbarara City. *Journal of Economics and Behavioral Studies*, *16*(1). http://dx.doi.org/10.22610/jebs.v16i1(J).3716

Bujang, M. A., Omar, E. D., & Baharum, N. A. (2018). A review on sample size determination for Cronbach's alpha test: a simple guide for researchers. *The Malaysian journal of medical sciences: MJMS*, *25*(6), 85. https://doi.org/10.21315/mjms2018.25.6.9

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13(3)*, *319–340*. https://doi.org/10.2307/249008

Dunn, W. N. (1983). Social network theory. *Knowledge*, *4*(3), 453-461. https://doi.org/10.1177/107554708300400306

Erçetin, Ş. Ş., & Neyişci, N. B. (2016). Social network analysis: A brief introduction to the theory. In *Chaos, Complexity and Leadership 2014* (pp. 167-171). Springer. https://doi.org/10.1007/978-3-319-18693-1

Fox, J. (1985). Effect analysis in structural-equation models II: Calculation of specific indirect effects. *Sociological Methods & Research*, *14*(1), 81-95. https://doi.org/10.1177/0049124185014001005

Frimpong, S. E., Agyapong, G., & Agyapong, D. (2022). Financial literacy, access to digital finance and performance of SMEs: Evidence From Central region of Ghana. *Cogent Economics & Finance*, *10*(1), 2121356. https://doi.org/10.1080/23322039.2022.2121356

García-Pérez-de-Lema, D., Ruiz-Palomo, D., & Diéguez-Soto, J. (2021). Analysing the roles of CEO's financial literacy and financial constraints on Spanish SMEs technological innovation. *Technology in Society*, *64*, 101519. https://doi.org/10.1016/j.techsoc.2020.101519

Hadiyati, E., & Mulyono, S. (2024). Digital marketing as a determinant variable for improving the business performance. *Innovative Marketing*, *20*(3), 28. http://dx.doi.org/10.21511/im.20(3).2024.03

Hu, Y., Pan, Y., Yu, M., & Chen, P. (2024). Navigating digital transformation and knowledge structures: Insights for small and medium-sized enterprises. *Journal of the Knowledge Economy*, 1-34. https://doi.org/10.1007/s13132-024-01754-x

Jayeola, O., Sidek, S., Sanyal, S., Hasan, S. I., An, N. B., Ajibade, S.-S. M., & Phan, T. T. H. (2022). Government financial support and financial performance of SMEs: A dual sequential mediator approach. *Heliyon*, *8*(11). https://doi.org/10.1016/j.heliyon.2022.e11351

Karadağ, E., Tosuntaş, Ş. B., Erzen, E., Duru, P., Bostan, N., Şahin, B. M., Çulha, İ., & Babadağ, B. (2015). Determinants of phubbing, which is the sum of many virtual addictions: A structural equation model. *Journal of behavioral addictions*, *4*(2), 60-74. https://doi.org/10.1556/2006.4.2015.005

Kulathunga, K., Ye, J., Sharma, S., & Weerathunga, P. R. (2020). How does technological and financial literacy influence SME performance: Mediating role of ERM practices. *Information*, *11*(6), 297. https://doi.org/10.3390/info11060297

Kurniawati, E., Idris, I., Handayati, P., & Osman, S. (2021). Digital transformation of MSMEs in Indonesia during the pandemic. *Entrepreneurship and Sustainability Issues*, *9*(2), 316. http://dx.doi.org/10.9770/jesi.2021.9.2(21)

Li, L., Su, F., Zhang, W., & Mao, J. Y. (2018). Digital transformation by SME entrepreneurs: A capability perspective. *Information Systems Journal*, *28*(6), 1129-1157. https://doi.org/10.1111/isj.12153

Liu, W., Sidhu, A., Beacom, A. M., & Valente, T. W. (2017). Social network theory. *The international encyclopedia of media effects*, *1*, 1-12. http://dx.doi.org/10.1002/9781118783764.wbieme0092

Martínez-Peláez, R., Ochoa-Brust, A., Rivera, S., Félix, V. G., Ostos, R., Brito, H., Félix, R. A., & Mena, L. J. (2023). Role of digital transformation for achieving sustainability: mediated role of stakeholders, key capabilities, and technology. *Sustainability*, *15*(14), 11221. https://doi.org/10.3390/su151411221

Mishra, C. S., & Zachary, R. K. (2015). The theory of entrepreneurship. In (Vol. 5, pp. 251-268): De Gruyter. https://doi.org/10.1515/erj-2015-0042

Montoya, A. K., & Hayes, A. F. (2017). Two-condition within-participant statistical mediation analysis: A path-analytic framework. *Psychological methods*, *22*(1), 6. https://doi.org/10.1037/met0000086

Murad, M., Othman, S., & Kamarudin, M. A. I. (2025). Entrepreneurial university input, core strategic plan and output: research on undergraduates entrepreneurial behaviour and career. *Entrepreneurship Education*, 1-31. https://doi.org/10.1007/s41959-025-00137-w

Murad, M., Othman, S. B., & Kamarudin, M. A. I. B. (2024). Entrepreneurial University Input, Process, and Output Support for Student Entrepreneurship: Growing Innovation through University Programs. *Journal of the Knowledge Economy*, 1-31. https://doi.org/10.1007/s13132-024-02546-z

Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial management & data systems*, *116*(9), 1849-1864. https://doi.org/10.1108/IMDS-07-2015-0302

Puteri, D. A., & Asyari, A. (2023). The effect of digital transformation on the revitalization of MSMEs in pandemi time with digital literacy as an intervening variable (Case study of micro enterprises in the city of Bukittinggi). *Islamic Banking: Jurnal Pemikiran Dan Pengembangan Perbankan Syariah*, *8*(2), 217-238. https://doi.org/10.36908/isbank.v8i2.695

Rofiqoh, I., Buchdadi, A., & Gurendrawati, E. (2023). Artistic orientation, financial literacy, digital literacy, and MSME Performance. *IJHCM (International Journal of Human Capital Management)*, *7*(1), 52-64. http://dx.doi.org/10.21009/IJHCM.07.01.4

Sekaran, U., & Bougie, R. (2016). *Research Methods For Business: A Skill Building Approach*. Wiley. https://books.google.com.pk/books?id=Ko6bCgAAQBAJ

Shee, H., & Kaswi, S. (2023). The effect of digital transformation and innovation on SMEs' performance in times of COVID-19. *Problems and Perspectives in Management*, *21*(4), 84-100. https://doi.org/10.21511/ppm.21%284%29.2023.07

Siagian, H., Basana, S. R., Tarigan, Z. J. H., Novitasari, M., & Jie, F. (2024). Role of supply chain management in improving competitive advantage of Indonesian small and medium enterprises. https://doi.org/10.21511/ppm.22(2).2024.54

Silva, R., São Mamede, H., & Santos, V. (2023). Clarification of the Present Understanding of the Assessment of an Organization's Digital Readiness in SMEs. *Emerging Science Journal*, *7*(6), 2279-2307. http://dx.doi.org/10.28991/ESJ-2023-07-06-025

Sudrajad, A. I., Tricahyono, D., Yulianti, E. B., SM, A., & Rosmawati, W. (2023). The role of digitalization performance on digital business strategy in indonesia msems. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *8*(6), 26. http://dx.doi.org/10.26668/businessreview/2023.v8i6.2260

Suryani, U., Arief, M., Bramantoro, S., & Hamsal, M. (2022). The impact of digital literacy and e-commerce adoption with O2O business adoption on the performance of small and medium enterprises. *International Journal of eBusiness and eGovernment Studies*, *14*(2), 199-223. http://dx.doi.org/10.34111/ijebeg.202214130

Togun, O., Ogunrinade, R., Olalekan, O. T., & Jooda, T. (2022). Financial Inclusion and SMEs' Performance: Mediating Effect of Financial Literacy. *Journal of Business and Environmental Management*, *1*(1), 23-33. https://doi.org/10.59075/jbem.v1i1.148

Vrontis, D., Chaudhuri, R., & Chatterjee, S. (2022). Adoption of digital technologies by SMEs for sustainability and value creation: Moderating role of entrepreneurial orientation. *Sustainability*, *14*(13), 7949. https://doi.org/10.3390/su14137949

Wuebker, R., Zenger, T., & Felin, T. (2023). The theory‐based view: Entrepreneurial microfoundations, resources, and choices. *Strategic Management Journal*, *44*(12), 2922-2949. https://doi.org/10.1002/smj.3535

Vol: 16 **No:** 4 **Year:** 2024 **ISSN:** 2146-0744 (Online) (**pp.**192-214) **Doi:** 10.34109/ijebeg.2024160410

Yanto, H., Baroroh, N., Hajawiyah, A., & Rahim, N. M. (2022). The Roles of entrepreneurial skills, financial literacy, and digital literacy in maintaining MSMEs during the COVID-19 Pandemic. *Asian Economic and Financial Review*, *12*(7), 504. https://doi.org/10.55493/5002.v12i7.4535

Zaineldeen, S., Hongbo, L., Koffi, A. L., & Hassan, B. M. A. (2020). Technology acceptance model'concepts, contribution, limitation, and adoption in education. *Universal Journal of Educational Research*, *8*(11), 5061-5071. http://dx.doi.org/10.13189/ujer.2020.081106

Zeithaml, V. A., Jaworski, B. J., Kohli, A. K., Tuli, K. R., Ulaga, W., & Zaltman, G. (2020). A theories-in-use approach to building marketing theory. *Journal of Marketing*, *84*(1), 32-51. https://doi.org/10.1177/0022242919888477