Akter and Nurul Islam, (2026). Examining the Relationship Between Technological Factors and Successful Digitalisation in Malaysian SMEs: The Mediating Role of Individual Motivation. International Journal of Business Society, 10 (3), 1127-1134

Journal Homepage: www.ijo-bs.com

International Journal of Business Society

Contents lists available at: https://www.ijo-bs.com/issue.html

Examining the Relationship Between Technological Factors and Successful Digitalisation in Malaysian SMEs: The Mediating Role of Individual Motivation

Nasrin Akter[1]; Gazi Md Nurul Islam[2]

[1]PhD Candidate, Graduate School of Business, Universiti Tun Abdul Razak, Email: (dipaboli2018@gmail.com)
[2]Faculty of Graduate School of Business, Universiti Tun Abdul Razak, Email: (gazi@unirazak.edu.my)

Information of Article

Article history:
Received: 10 Jan 2026
Accepted: 28 Mar 2026
Available online: 31 Mar 2026

Keywords:
Digitalisation, SMEs, Technological Infrastructure, SEM.

ABSTRACT

Digitalisation is crucial for small and medium-sized enterprises (SMEs) in Malaysia, contributing significantly to the economy and employment. This study investigates the impact of technical factors, including technological expertise and infrastructure, on successful digital transformation, while considering human motivation as a mediator. Using a quantitative approach with data from 270 SMEs in Selangor analyzed via Structural Equation Modelling (SEM), findings reveal that technical infrastructure greatly influences successful digitalisation, whereas technological knowledge has a lesser impact. Moreover, individual motivation partially mediates these relationships. The research enriches the Technology-Organization-Environment (TOE) and Unified Theory of Acceptance and Use of Technology (UTAUT) frameworks, highlighting the need for SMEs to enhance both technological infrastructure and workforce skills for effective digital transformation.

1. Introduction

The rapid growth of digital technology has significantly impacted the global business environment, driving organisations to adopt digital solutions to stay competitive (Agustian et al., 2023). In Malaysia, SMEs make up a significant share of the economy and play an important role in job creation and in contributing to GDP. Despite their significance, many SMEs struggle to achieve effective digitisation owing to limited resources, a lack of experience, and infrastructure restrictions (Hasan et al., 2022). SMEs are acknowledged as the engine of Malaysia's economic development, accounting for around 38.2% of the national GDP and employing 70% of the workforce (Sangosanya et al., 2025). Following the Industrial Revolution 4.0 (IR 4.0) and the COVID-19 epidemic, digital transformation, defined as using technology to reorganise business processes, has become critical for SME survival and competitiveness. Digitalisation in SMEs refers to the integration of digital technologies into company operations, resulting in increased efficiency, innovation, and value creation. While prior research has examined numerous variables of digitalisation, technical factors remain among the most important drivers. These include both technology knowledge (skills, competence, and awareness) and technological infrastructure (hardware, software, and network capabilities) (Pfister & Lehmann, 2023).

The purpose of this research is to examine how these technical aspects affect effective digitalisation in Malaysian SMEs. Drawing on empirical data analysed using SEM, the study gives evidence-based insights into the relative relevance of various technical characteristics and their interplay with human motivation.

Rapid technical breakthroughs have significantly transformed the global corporate scene. Artificial intelligence, cloud computing, and big data analytics are changing the way businesses operate and compete. Small and medium-sized enterprises (SMEs), which are the backbone of Malaysia's economy, must adapt to this shift to remain competitive. Despite legislative support, SMEs face challenges such as insufficient technical skills, budgetary constraints, and inadequate infrastructure. These constraints impede successful digitalisation, resulting in variable levels of performance across organisations (Saeed, & Bekhet, 2018; Alnaser, Saeed, & Alrawashedh, 2018; Mohamad et al., 2021).

The digital economy is quickly altering the global corporate landscape. Cloud computing, artificial intelligence, and big data analytics are transforming how businesses operate and compete. To stay competitive, Malaysia's SMEs, which account for more than 98.5% of all enterprises, must embrace digitisation. Recognising their relevance, Malaysia's government has launched several programs to boost digital adoption, including the National eCommerce Strategic Roadmap and the SME Digitalisation Grant. Despite these initiatives, the level of digitisation among SMEs is still inconsistent (Tajudeen et al., 2025). However, digital transformation in SMEs is uneven due to budget constraints, skill shortages, and infrastructure issues. Although policy measures exist, adoption gaps remain.

Many Malaysian SMEs face challenges in successfully adopting digital technology. These limitations include poor technology infrastructure, limited technical understanding, budgetary constraints, and an aversion to change (Iqbal et al.,

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

2024). While prior research has identified several variables affecting digital adoption, there remains empirical clarity on the relative importance of technological factors and how they interact with human factors such as motivation (Markus et al., 2021). There is little empirical evidence on how technological factors interact with human characteristics, such as motivation, to determine the success of digitisation. Most studies handle these aspects separately. Therefore the research objectives is to:

1. Examine the relationship between technological knowledge and successful digitalisation in Malaysian SMEs.
2. Analyse the impact of technological infrastructure on successful digitalisation.
3. Investigate the mediating role of individual motivation.
4. Provide practical recommendations for SMEs and policymakers.

2. Literature Review

Digital marketing for SMEs was thoroughly and diversely explored, including entrepreneurship and information technology. Digital marketing has evolved as a critical tool for SMEs to get awareness, reach their target clients, and drive company success. Dwiwijaya et al. (2024) stress the role of digital marketing in levelling the playing field for SMEs, enabling them to compete with larger enterprises using digital channels such as social media, search engines, and email. Similarly, Ryan and Deci's (2020) study emphasises the significance of digital marketing in increasing brand recognition, customer engagement, and sales for SMEs across sectors. Despite the potential advantages, many SMEs need assistance with digital marketing tactics. Financial constraints, a lack of digital skills and competency, and doubts about the efficacy of digital marketing are among the most often cited hurdles (Dwivedi et al., 2023).

Furthermore, cultural and organisational constraints may prevent SMEs from integrating digital marketing into their existing processes and procedures (Kapoor & Dwivedi, 2020). To address these challenges, researchers identified several approaches and recommended practices for SMEs to employ digital marketing effectively. These techniques include investing in digital skills training and education for employees (Stofkova et al., 2022), engaging with customers and building brand loyalty through social media platforms (Al-Hawary & Al-Fassed, 2022), and adopting a customer-centric approach to digital marketing that focuses on delivering personalised and relevant content (Harrigan et al., 2021).

According to Ghobakhloo (2020), the literature on digitisation focuses on efficiency, innovation, and competition. However, Canton (2021) found that SMEs face structural challenges, including inadequate capital and technical capabilities. Technological knowledge has been extensively researched as a driver of adoption, by introducing the concept of absorptive capacity, which emphasises that enterprises must have prior knowledge to utilise new technologies (Martinez-Sanchez et al., 2019). Previously, Venkatesh et al. (2012) found that user competency impacts behavioural intention. Rialti et al. (2023) contend that knowledge is inadequate in the absence of proper infrastructure. Bharadwaj (2000) and Jafari-Sadeghi et al. (2021) showed that IT capabilities directly improve business performance, proving infrastructure as a critical driver of SME digital maturity.

Recent research, such as Trenerry et al. (2021), includes behavioural approaches. Emphasise employee preparedness and motivation as essential aspects, in line with UTAUT, which ties perceived utility and simplicity of use to adoption behaviour. Despite these developments, insufficient research has been conducted to incorporate technology and behavioural aspects into a unified model, which is the topic of this study.

2.1 Digitalisation in SMEs

Digitalisation is the use of digital technology to alter corporate processes and provide new value propositions. Small and medium-sized enterprises (SMEs) sometimes lag behind larger organisations in digital adoption due to budgetary constraints and a lack of technological expertise. However, digitisation provides potential for SMEs to increase efficiency, broaden market reach, and improve customer interaction.

2.2 Technical Factors

Technological aspects are fundamental to digital transformation and are often discussed within the TOE framework. In this research, technology is classified into two major constructs: technological knowledge (TEK) and technological infrastructure (TEI). Technological knowledge refers to workers' understanding and abilities with digital tools, while infrastructure encompasses the physical and digital structures that enable their use (Sinha, 2024). In terms of technological infrastructure, empirical research indicates that both aspects are required for effective digital adoption. Infrastructure serves as the basis, while knowledge allows for successful use (Venkatesh et al., 2012).

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

2.3 Conceptual Framework

The conceptual framework for this paper consists of two independent variables: (A) technological knowledge and (B) technological infrastructure. Individual Motivation (C) functions as the mediator. Figure 1 shows the dependent variable, Successful Digitalisation (D).

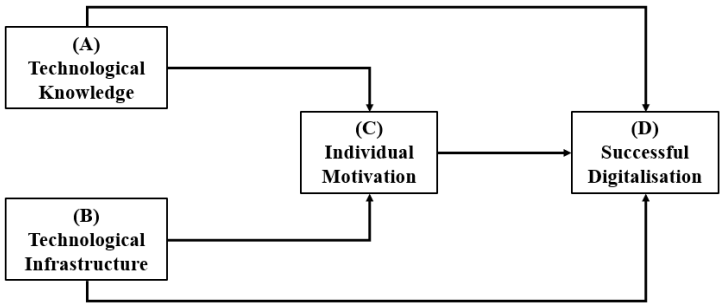

Figure: 1 The proposed framework

2.4 Hypotheses Development

H1: Technological knowledge positively influences successful digitalisation.

H2: Technological infrastructure positively influences successful digitalisation.

H3: Individual motivation mediates the relationship between technological knowledge and digitalisation.

H4: Individual motivation mediates the relationship between technological infrastructure and digitalisation.

3. Methodology

3.1 Research Design

This study adopts a quantitative research approach, using survey data gathered from SMEs in Selangor, Malaysia. The population includes 925 SMEs closely tied to digitalisation. Only 270 respondents were included in this demographic, according to the Krejcie and Morgan table given by Rahman (2023). The sampling technique is stratified convenience sampling, and the respondents include top management, middle management, and staff.

3.2 Measurement Model

The factors included in this study are Technology Knowledge (TEK), Technology Infrastructure (TEI), Innovation, Culture, Environment, Individual Motivation (INM), and Successful Digitalisation (SDB). The constructs were assessed using Likert-scale items. The data are evaluated using the following measures: reliability, which comprises Cronbach's Alpha (> 0.70) and composite reliability ($CR > 0.70$). The authors validated the data using convergent validity ($AVE > 0.50$) and discriminant validity ($HTMT < 0.85$).

3.3 Confirmatory Factor Analysis (CFA) Results

CFA is a complex statistical approach for determining the factor structure of a collection of observable variables, enabling researchers to test the hypothesis that the observed variables are linked to their underlying latent constructs. CFA differs from Exploratory Factor Analysis (EFA) in that it identifies the data structure rather than using a preconceived framework. All factor loadings were more than 0.60, indicating construct validity.

3.4 Structural Model

Structural Equation Modelling (SEM) is a comprehensive multivariate statistical framework for investigating complicated interactions between observable variables and latent entities. It combines factor analysis (measurement model) and path analysis/regression (structural model) to evaluate theoretical models while accounting for measurement errors and examining indirect or mediated effects. SEM is based on two basic model types: measurement and structural. The measurement model defines how observed variables relate to their corresponding latent constructs and, in doing so, operationalises theoretical notions. The structural model, on the other hand, defines the predicted relationships among latent constructs, offering a conceptual map of how the constructs interact.

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

4. Results

4.1 Model Fit

Model fit statistics assess the quality of a statistical model by reproducing observed data, with higher fit indicating greater model validity and less bias. To balance model complexity and data representation, Dey et al. (2025) recommend using key measures such as absolute fit (χ^2, SRMR, RMSEA), incremental fit (CFI and TLI), and parsimony fit (e.g., PGFI, PNFI). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) are prominent incremental fit indices in SEM that assess model performance by comparing the user-specified model to a null baseline model. Values vary from 0 to 1; values greater than 0.90 or 0.95 often indicate a strong model fit. This study's statistical analysis uses incremental fit. The data reveal that CFI = 0.91 and TLI = 0.96. As a result, it fits well. The Root Mean Square Error of Approximation (RMSEA), a prominent parsimony-adjusted fit indicator used in SEM to evaluate the discrepancy between a hypothesised model and the population covariance matrix, is reported as 0.05. Values < 0.06 indicate a strong fit of the model to the data (Comulada, 2021).

4.2 Path Analysis

Path analysis is a statistical approach that examines the direct and indirect links between observable variables, extending multiple regression to evaluate complicated causal chains. It examines hypothesised models by decomposing correlations into path coefficients, which are graphically depicted in path diagrams, to understand better how exogenous factors affect outcomes. To demonstrate the key concepts and components, Table 1 summarises the important principles required to justify the models for different routes. These ideas include route diagrams, path coefficients, direct versus indirect effects, and exogenous versus endogenous factors.

Table: 1 The key concepts of possible paths (Author Preparation)

Path	Tool and Purpose
Path Diagram	A visual model using rectangles for variables and arrows for hypothesized causal paths.
Path Coefficients	Standardized regression coefficients (β) that quantify the strength of relationships between variables.
Direct vs. Indirect Effects	Direct effects are direct arrows between variables, while indirect effects occur through one or more intervening (mediator) variables.
Exogenous vs. Endogenous	Exogenous variables are independent (no arrows pointing to them), while endogenous variables are dependent (at least one arrow pointing to them).

4.3 Statistical Analysis and Fit

Statistical analysis and model fit assessment are essential procedures for evaluating how well a proposed model represents observed data. In quantitative research, particularly in regression and structural modeling, model fit determines whether the theoretical framework is empirically supported. A well-fitting model indicates that the estimated relationships among variables closely reflect real-world observations, thereby enhancing the validity of the study's conclusions.

Several statistical techniques are commonly employed to assess model fit. One of the primary indicators is the goodness-of-fit (GOF), which evaluates the extent to which predicted values align with observed data. Measures such as the root mean square error (RMSE) provide a quantitative estimate of prediction error, where lower values indicate better model accuracy. Residual analysis further complements GOF by examining the discrepancies between observed and predicted values. Techniques such as Q-Q plots are frequently used to assess whether residuals follow a normal distribution, which is an important assumption in many parametric models.

In addition, parameter estimation methods play a critical role in determining model fit. Ordinary Least Squares (OLS) is widely used in linear regression to minimize the sum of squared residuals, whereas the maximum likelihood estimation (MLE) approach is more common in structural equation modeling and logistic regression. MLE identifies parameter values that maximize the likelihood of observing the given data under the specified model (Araya et al., 2021a; Araya et al., 2021b). These estimation methods also generate fit indices that assist in evaluating model adequacy.

Statistical significance testing is another key component of model evaluation. The chi-square (χ^2) test is frequently used to assess the discrepancy between the observed covariance matrix and the model-implied covariance matrix. A non-significant chi-square value suggests that the model fits the data well, as there is no substantial difference between observed and expected values (Chicco et al., 2021). Together, these techniques goodness-of-fit measures, residual analysis, estimation methods, and significance testing provide a comprehensive framework for assessing statistical fit, as summarized in Table 2.

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

Table: 2 Concepts in statistical fit (Author Preparation)

Type of Fit	Purpose
Goodness of Fit (GOF)	Measures how closely observed data corresponds to the fitted model. High GOF means the model's expected values are close to the actual observed values.
Residuals	Measures the difference between observed values and predicted values using residual analysis such as a QQ plot to check for model adequacy.
Maximum Likelihood Method	A statistical method used in regression and path analysis to estimate parameters, often yielding fit statistics to determine how well the model predicts data.
Significant Tests	Evaluates statistical tests using Chi-square (χ^2) to determine if the difference between observed data and model predictions is significant.

4.4 Results and Interpretation

The evaluation of model fit in this study was conducted using several widely accepted indices, including the chi-square statistic, the root means square error of approximation (RMSEA), and comparative fit indices such as CFI and TLI. A non-significant chi-square value indicates good model fit, while RMSEA values below 0.08 suggest acceptable approximation error. Similarly, CFI and TLI values greater than 0.90 indicate that the proposed model provides a substantial improvement over a null model.

The results demonstrate that the model achieved an adequate fit, with RMSEA = 0.05, CFI ≈ 0.91, TLI ≈ 0.96, and NFI = 0.90. These values collectively confirm that both the measurement model and the structural model are well specified and consistent with the observed data. To further refine the model, modification indices were examined to identify potential improvements, such as adding theoretically justifiable paths that could enhance explanatory power.

The structural relationships among variables were evaluated through path coefficients, as presented in Table 3. The findings reveal that infrastructure has a strong and statistically significant effect on digitalisation ($\beta = 1.34, p < 0.001$), while knowledge also exerts a significant positive influence ($\beta = 0.94, p < 0.01$). These results indicate that both technical and human capital factors are critical drivers of digital transformation. The path coefficients can be summarised as shown in Table 3.

Table: 3 Testing direct paths

Direct Path	β	Significance	Decision
Infrastructure → Digitalisation	1.34	$p < 0.001$	Accepted
Knowledge → Digitalisation	0.94	$p < 0.01$	Accepted

Furthermore, the analysis provides evidence of partial mediation, where individual motivation acts as an intermediary mechanism linking technological factors to digitalisation outcomes. Specifically, technology influences digitalisation both directly and indirectly through motivation (Technology → Motivation → Digitalisation). This finding aligns with prior research emphasizing the importance of behavioural and organizational readiness in enhancing the effectiveness of technological adoption (Araya et al., 2022; Araya & Miras, 2015).

The model explains approximately 68% of the variance in digitalisation, indicating a substantial level of explanatory power. This suggests that the included variables capture key determinants of digital transformation within the studied context. Notably, infrastructure emerges as a foundational element, serving as the operational backbone that enables digital systems to function effectively. Without adequate infrastructure, even highly skilled personnel may be unable to successfully implement digital solutions, highlighting the interdependence between technological resources and human capabilities.

5. Discussion

The findings support infrastructure as the best predictor, which is consistent with Bharadwaj (2000). The mediating effect broadens UTAUT by including organisational context. The findings indicate that SMEs should link technical investments with human competencies. The results provide support for the TOE and UTAUT frameworks by demonstrating the importance of technical preparedness and the role of human variables in mediating its influence. The larger influence of infrastructure is consistent with previous studies highlighting the relevance of IT skills in SMEs. In practice, SMEs may invest in reliable digital infrastructure, improve staff technical skills, and boost motivation through training and incentives.

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

The findings recommended that the Malaysian government's actions should focus on subsidising digital infrastructure, offering training programs, and supporting the development of the digital ecosystem.

The theoretical implications significantly extend and integrate two major theoretical frameworks: the Technology-Organisation-Environment (TOE) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The research first emphasises the relevance of technical elements in the TOE framework by experimentally proving that both technological expertise and technological infrastructure are significant drivers of effective digitalisation. However, the discovery that technical infrastructure has a greater effect gives a complex view that contradicts previous research, which often treats technological preparedness as a single construct. Second, the research extends the UTAUT model by including individual motivation as a mediating variable rather than treating behavioural intention as a direct predictor. This demonstrates that digital transformation is not just dependent on technical availability, but also on people's psychological preparedness and participation. Third, the merging of technical and behavioural views creates a comprehensive model of digitalisation, filling a significant gap in the literature, where previous research investigated these elements separately. This helps to advance theory by proving that technology-human interaction is critical to digital transformation success.

The infrastructure's impact on expanding technological knowledge can be demonstrated through its dominance in three areas: providing ongoing staff training, boosting digital literacy, and supporting knowledge-sharing activities. Individual motivation plays a mediating role, meaning that individuals should be encouraged to use digital technologies, organisations should offer incentives and support, and leadership should promote a pro-digital culture. Without motivated people, technology expenditures may not provide the intended results. To achieve the research objectives, this research sought to investigate the influence of technical elements on effective digitisation in malaysian smes. the results successfully address and meet the suggested study goals as follows:

Objective 1: Investigate the Link Between Technological Knowledge and Successful Digitalisation in Malaysian SMEs.

The study's findings demonstrate a favourable and statistically significant association between technical expertise and effective digitalisation. SMEs with greater levels of digital skills, technical knowledge, and personnel expertise are better positioned to embrace and use digital technology effectively. However, the data show that although technological knowledge is significant, its impact is minimal compared to technological infrastructure. This finding implies that knowledge alone is inadequate unless the requisite technical mechanisms are in place. This is consistent with previous research, which has emphasised the need to combine knowledge with enabling resources to produce significant results. Thus, this goal is met by proving that technological knowledge contributes positively to digitalisation, but its success depends on the organisation's overall technological environment.

Objective 2: Evaluate the Impact of Technological Infrastructure on Successful Digitalisation.

According to the findings, technical infrastructure is the biggest predictor of effective digitisation in Malaysian SMEs. The SEM findings reveal a high path coefficient, which indicates a significant direct influence. This research demonstrates that infrastructure (hardware, software, connectivity, and digital platforms) is the foundation of digital transformation. Small and medium-sized enterprises with well-developed infrastructure are better positioned to adopt digital technologies effectively, integrate business processes, and grow their operations. The findings substantially support this goal, demonstrating that without proper infrastructure, digital transformation initiatives are severely limited, regardless of personnel capabilities.

Objective 3: Examine the Mediating Role of Individual Motivation.

The research discovers that person motivation has an important mediating role in the interaction between technical elements and effective digitalisation. Employees' confidence and desire to utilise digital tools increase as their technology expertise grows, along with the simplicity of use and accessibility. Both things indirectly impact digitisation by increasing motivation. The mediation study reveals partial mediation, indicating that technical variables affect digitalisation both directly and indirectly through motivation. This conclusion emphasises the relevance of human elements in digital transformation. Even with modern technology, digital success depends on workers' willingness to adopt and use these tools.

Objective 4: Make Practical Recommendations to Improve Digitalisation in Malaysian SMEs.

Based on the empirical data, the paper makes numerous important suggestions. Among these suggestions are that SMEs prioritise investment in technical infrastructure as a basic necessity and that businesses improve their technological expertise through training and upskilling. Management should focus on increasing employee engagement through supportive leadership and incentives, while politicians should create integrated support programs that address both technological and human factors. These guidelines ensure that the study not only adds theoretical value but also provides practical, policy-relevant insights.

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

5.1 Recommendations for Future Work

Based on the study's results, various suggestions are made for SMEs, managers, and governments to improve the effectiveness of digitisation. For SMEs, smart investments in technological infrastructure will influence successful digitisation. In this circumstance, SMEs should prioritise investments in high-speed, reliable internet access, cloud computing platforms, integrated corporate systems (such as ERP and CRM), and cybersecurity solutions.

The second recommendation could be achieved by Strengthening Technological Knowledge and Skills, which assists SMEs in improving their employees' digital competencies by implementing continuous training and upskilling programmes, expanding workshops on emerging technologies, and promoting internal knowledge-sharing systems. To summarise, promoting digital literacy across all organisational levels ensures that technology investments are used efficiently.

The proposal for managers focuses on connecting technology with corporate strategy by implementing digital projects that are aligned with organisational objectives. Technology should be used to increase efficiency, improve the customer experience, and promote innovation.

It is also suggested that government agencies provide subsidies or grants for digital infrastructure, expand national broadband access, and encourage the use of cloud and digital platforms. The government should promote cooperation between SMEs and technology suppliers, establish innovation centres and incubators, and broaden knowledge-sharing networks.

5.2 Future Research Directions

While this research offers useful information, numerous areas need additional exploration. To begin, future research should include additional characteristics, such as organisational culture, leadership support, competitive pressure, and the regulatory environment. These measurements would provide a more comprehensive picture when combined with the full TOE framework. Second, future research should use a cross-sectional approach, including longitudinal studies that examine digital change across time and analyse causal linkages. Third, future studies might compare SMEs from other nations and examine sector-specific disparities, such as those between manufacturing and services, to improve the generalizability of findings.

6. Conclusion

This research examined the relationship between technical parameters and effective digitisation among Malaysian SMEs. The findings indicate that both technical knowledge and infrastructure have a positive influence on digitalisation, with infrastructure exerting a more significant impact. Furthermore, individual motivation serves as a crucial mediating factor, emphasising the necessity to align technical investments with the development of human resources.

These insights suggest that policymakers should prioritise initiatives aimed at enhancing both infrastructure and training programmes for personnel. By fostering an environment that supports technical growth, SMEs can better navigate the challenges of the digital landscape and improve their overall competitiveness.

Effective digitisation necessitates a holistic approach, integrating not only advanced technologies but also fostering a culture of continuous learning and adaptability within the workforce. This alignment ensures that SMEs are well-equipped to navigate the evolving digital landscape and enhance their competitive advantage. itates a holistic strategy that encompasses technology, personnel, and organisational processes.

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/

References

Agustian, K., Mubarok, E. S., Zen, A., Wiwin, W., & Malik, A. J. (2023). The impact of digital transformation on business models and competitive advantage. Technology and Society Perspectives (TACIT), 1(2), 79-93.

Al-Hawary, S. I. S., & Al-Fassed, K. J. (2022). The impact of social media marketing on building brand loyalty through customer engagement in Jordan. International Journal of Business Innovation and Research, 28(3), 365-387.

Alnaser, A., Saeed, M., & Alrawashedh, N. (2018). Adoption of e-commerce by SMEs and its impact on customer satisfaction. Journal of Advanced Social Research, 8(01), 01-14.

Araya, A., Dahalan, J., & Muhammad, B. (2021a). Blockchain Technology and Regression Methods: A Case of Conceptual Framework. International Journal of Business Society (ijo-bs), 5(11), 450-463. doi:10.30566/ijo-bs/2021.11.66

Araya, A., Dahalan, J., & Muhammad, B. (2021b). Model of Heterogeneous Agents and Noise Traders' Risk: A Case of Conceptual Framework. International Journal of Business Society (ijo-bs), 5(12), 493-502. doi:10.30566/ijo-bs/2021.12.70

Araya, A., Dahalan, J., & Muhammad, B. (2022). The Relationship Between Financial Patterns and Exogenous Variables: Empirical Evidence from Symmetric and Asymmetric ARDL. International Journal of Business Society, 6(6), 638-661. doi:10.30566/ijo-bs/2022.06.90

Araya, A., & Miras, H. (2015). Determinant Risk Factors on Valuation of Banks' Stock Return. International Journal of Accounting and Business Management, 3(1), 353-367. doi:10.24924/ijabm/2015.04/v3.iss1/353.367

Bharadwaj, A. S. (2000). A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation1. MIS quarterly, 24(1), 169-196.

Canton, H. (2021). Organisation for economic co-operation and development—OECD. In The Europa directory of international organizations 2021 (pp. 677-687). Routledge.

Chicco, D., Warrens, M. J., & Jurman, G. (2021). The coefficient of determination R-squared is more informative than SMAPE, MAE, MAPE, MSE and RMSE in regression analysis evaluation. Peerj computer science, 7, e623.

Comulada, W. S. (2021). Calculating level-specific SEM fit indices for multilevel mediation analyses. The Stata Journal, 21(1), 195-205.

Dey, D., Haque, M. S., Islam, M. M., Aishi, U. I., Shammy, S. S., Mayen, M. S. A., ... & Uddin, M. J. (2025). The proper application of logistic regression model in complex survey data: a systematic review. BMC Medical Research Methodology, 25(1), 15.

Dwivedi, Y. K., Ismagilova, E., Rana, N. P., & Raman, R. (2023). Social media adoption, usage and impact in business-to-business (B2B) context: A state-of-the-art literature review. Information Systems Frontiers, 25(3), 971-993.

Dwiwijaya, K. A. (2024). E-Business and digital marketing: Integrating management information systems for competitive advantage. Journal of Innovative Research, 2, 6.

Ghobakhloo, M. (2020). Industry 4.0, digitization, and opportunities for SMEs. Journal of Manufacturing Technology Management, 31(8), 1579–1604.

Harrigan, M., Feddema, K., Wang, S., Harrigan, P., & Diot, E. (2021). How trust leads to online purchase intention founded in perceived usefulness and peer communication. Journal of Consumer Behaviour, 20(5), 1297-1312.

Hasan, N. A., Abd Rahim, M., Ahmad, S. H., & Meliza, M. (2022). Digitization of business for small and medium-sized enterprises (SMEs). Environment-Behaviour Proceedings Journal, 7(19), 11-16.

Huat, O. C. (2022). Digital Business Model Innovation and SMEs' Competitiveness: Insights from Malaysian SMEs. Global Business and Management Research: An International Journal Vol. 14, No. 3s.

Iqbal, M. S., Abdul Rahim, Z., Alshammari, A. M. K., & Iftikhar, H. (2024). Innovative strategies for overcoming barriers to technology adoption in small and medium-sized enterprises. Journal of the International Council for Small Business, 5(4), 331-344.

Jafari-Sadeghi, V., et al. (2021). Digital transformation in SMEs. Technological Forecasting and Social Change, 173, 121074.

Kapoor, K. K., & Dwivedi, Y. K. (2020). Sustainable consumption from the consumer's perspective: Antecedents of solar innovation adoption. Resources, Conservation and Recycling, 152, 104501.

Markus, A. F., Kors, J. A., & Rijnbeek, P. R. (2021). The role of explainability in creating trustworthy artificial intelligence for health care: a comprehensive survey of the terminology, design choices, and evaluation strategies. Journal of biomedical informatics, 113, 103655.

Martinez-Sanchez, A., Perez-Perez, M., & Vicente-Oliva, S. (2019). Absorptive capacity and technology: influences on innovative firms. Management Research: Journal of the Iberoamerican Academy of Management, 17(3), 250-265.

Mohamad, A., Mustapa, A. N., & Razak, H. A. (2021). An overview of Malaysian small and medium enterprises: contributions, issues, and challenges.

Pfister, P., & Lehmann, C. (2023). Returns on digitisation in SMEs—a systematic literature review. Journal of Small Business & Entrepreneurship, 35(4), 574-598.

Rahman, M. M. (2023). Sample size determination for survey research and non-probability sampling techniques: A review and set of recommendations. Journal of Entrepreneurship, Business and Economics, 11(1), 42-62.

Rialti, R., & Zollo, L. (2023). New Technologies and SMEs' Business Model:'Marketization 4.0'. In Digital Transformation of SME Marketing Strategies: Innovating for the 4.0 Era (pp. 45-79). Cham: Springer Nature Switzerland.

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. Contemporary educational psychology, 61, 101860.

Saeed, M. A. Y., & Bekhet, H. A. (2018). Influencing factors of mobile marketing among young Malaysian customers. Australian Journal of Basic and Applied Sciences, 12(9), 63-72.

Sangosanya, T. A., Salleh, S. S. M. M., & Saraih, U. N. (2025). Bridging the Digital Divide: A TOE Assessment of Factors Driving Digital Entrepreneurship in Malaysian SMEs. International Journal of Business and Technology Management, Vol. 7, No. 6, 29-44. https://asianscholarsnetwork.com/asnet-journals.

Sharma, V., Ramachandran, M., Chinnasamy, S., & Saravanan, V. (2021). A review on structural equation modeling and its classification. REST Journal on Emerging trends in Modelling and Manufacturing, 7(4), 135-142.

Sinha, R. (2024). Internet of Things technology skills enhancement in the digital era: absorptive capacity driven solutions. Journal of Information Technology, 39(1), 44-61.

Stofkova, J., Poliakova, A., Stofkova, K. R., Malega, P., Krejnus, M., Binasova, V., & Daneshjo, N. (2022). Digital skills as a significant factor of human resources development. Sustainability, 14(20), 13117.

Tajudeen, F. P., Moghavvemi, S., Thirumoorthi, T., Phoong, S. W., & Bahri, E. N. B. A. (2025). Digital Transformation of Malaysian Small and Medium Enterprises. Emerald Group Publishing.

Trenerry, B., et al. (2021). Preparing workplaces for digital transformation. Human Resource Management Review, 31(2), 100–115.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of IT. MIS Quarterly, 36(1), 157–178.

Zulkifli-Muhammad, M., Char, A. K., bin Yasoa, M. R., & Hassan, Z. (2021). Small and medium enterprises (SMEs) competing in the global business environment: A case of Malaysia. International Business Research, 3(1).

https://dx.doi.org/10.30566/ijo-bs/2026.03.151
Received 10 January 2026; Accepted 28 March 2026; Available online 31 March 2026 2600-8254/