



A RELIABILITY TEST OF THE IMPACT OF TECHNOLOGICAL CONTEXTS ON THE ADOPTION OF DIGITAL ENTREPRENEURSHIP

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ABSTRACT

Digital entrepreneurship is a highly dynamic approach that holds significant potential for societal transformation and advancement. The concept under consideration has a strong correlation with private sector development, small and medium-sized enterprise (SME) policies, job creation, innovation, and competitiveness. There is a need to research the utilisation of digital entrepreneurship among SMEs. Considering the geopolitical ramifications of the COVID-19 pandemic, this research has the potential to establish a contemporary economic model. Hence, the primary objective of this research is to assess the dependability of employing digital entrepreneurship, particularly within the realms of social media platforms and technological contexts. In order to ensure the validity of this investigation, a limited number of 43 samples were employed for the assessment of reliability. The results indicate that the five variables examined consistently demonstrate the assessed construct. Hence, the measurement items that have been modified demonstrate a high level of reliability, making them suitable for utilisation in subsequent research endeavours.

INTRODUCTION

The digital economy has emerged as a prominent phenomenon in industrialised nations, namely the United States and China, which collectively contribute to 40% of the global Gross Domestic Product (GDP) and have a prominent position in several domains of digital technology advancement (UNCTAD, 2019). This transformation has led to the expansion of the market and a subsequent reduction in associated costs (Murthy et al., 2021). According to Elia et al. (202), integrating novel technologies is crucial to digital technology's business models and operational frameworks. Thus, this digital-based entrepreneurship is a process of innovation towards the transformation of existing businesses (European Commission, 2015) with new ways of value creation (Pagani, 2013; Vendrell-Herrero et al., 2017), which is a driver of innovation development (Ardolino et al., 2017; Martín-Peña et al., 2018; Hinings et al., 2018; Satalkina & Steiner, 2020).

The progress above has led to the emergence of a novel business framework that encompasses various industries. This framework revolves around the virtualisation of administrative, financial, and storage systems and the digitalisation of fundamental business operations, including procurement, distribution, manufacturing, and communication. The advent of technology has led to the emergence of a novel paradigm commonly referred to as the digital economy (Asliturk et al., 2016).

The current situation necessitates the prioritisation of enhancing the digitalisation of the economy, particularly for small and medium-sized enterprises (SMEs). The government has enacted a range of initiatives and programs aimed at catering to the distinct requirements of SMEs and entrepreneurs. These efforts encompass the provision of financial aid, the enhancement of human capital development, and the facilitation of market access support. The involvement of SMEs in Malaysia is not a recent phenomenon. The introduction of this phenomenon has occurred over several centuries, and it has emerged as a crucial resource in facilitating and augmenting the nation's economic revenue expansion (Omar et al., 2019), particularly in emerging economies (Srinivasan & Venkatraman, 2018; Ng et al., 2020; Chatterjee et al., 2021). Furthermore, the advent of digital entrepreneurship has facilitated the expansion of SMEs by using information and communication technology (ICT).

Specifically, the utilisation of social media platforms and the Internet has empowered SMEs to compete with more giant enterprises effectively (Jere & Ngidi, 2020). A significant portion of the existing body of literature on digitalisation and its effects mainly focuses on management and marketing information systems, with limited attention given to the broader realm of business, particularly in digital entrepreneurship (Jere & Ngidi, 2020). Hence, it is imperative to undertake and substantiate research on digital entrepreneurship within the context of



SMEs. This necessity arises from the potential ramifications of ongoing global pandemics and geopolitical factors, which can engender novel economic frameworks, including digital business models (Chatterjee et al., 2020). Additionally, it is crucial to investigate technology adoption among SMEs in Malaysia.

In the contemporary technology adoption landscape, as enterprises progressively rely on developing inventive products, services, and operational strategies to maintain their competitiveness, possessing advanced cognitive abilities and creative problem-solving aptitude becomes imperative. The achievement of transformation is contingent upon human culture and cognition, as well as ethical ideals and deliberations, particularly those individuals who spearhead the advancement of this alteration. (Kooskora, 2021). According to (Göcke Meier, 2021), entrepreneurs face distinct challenges when building and validating business models for social media platforms inside technological contexts.

Hence, within the framework of this study, digital entrepreneurship is centred on utilising social media platforms. Bejjani et al. (2023) state that social media serves as a valuable tool for effectively navigating the increasing complexities of the modern market, fostering interaction, and establishing connections among various organisations. Nambisan (2017) states that social media can be defined as technical tools and systems that facilitate innovation and entrepreneurship by enabling communication, collaboration, and computational functionalities. This facilitates organisations in acquiring substantial insights and experience from these firms.

This study examines the correlation between the adoption of digital entrepreneurship and the technological context of relative advantages, compatibility, and complexity in utilising social media platforms among SMEs in Malaysia. According to (Tornatzky & Klein (1982), the adoption of a particular innovation is influenced by factors such as relative advantages, compatibility, and complexity. This study also underscored the importance of interactivity in developing a connection between companies and consumers who may interact with the digital platform. Interactivity refers to the extent to which several individuals or groups can engage with one another through technological means, such as social media platforms (Qalati et al., 2020). The results indicate that the variable functions as a statistically significant predictor. Nevertheless, there exists further research that demonstrates contradictions and warrants further investigation (Ainin et al., 2015; Odoom et al., 2017; Ahani et al., 2017; Tajudeen et al., 2018; Ahmad et al., 2019; Chatterjee & Kar, 2020; Rahman et al., 2020); Qalati et al., 2020; Eze et al., 2021b; Abbasi et al., 2022; Abdullahi et al., 2022; Miniesy et al., 2022; Patil et al., 2022; Qalati et al., 2022)

METHODOLOGY

This study employed a survey methodology, with a sample size of only 43 respondents, to assess the dependability. The data in this study were obtained using a self-administered questionnaire distributed among small and medium-sized firms in Malaysia. A Likert-type scale was employed to assess the elements of all technological contexts, including digital entrepreneurship adoption. The assessments used to assess the adoption of digital entrepreneurship consisted of nineteen items that were derived from prior studies conducted by Tajudeen et al. (2018)

The variable of the technological context comprises several factors, including relative advantage, compatibility, complexity, and interactivity. The relative advantage and compatibility assessment was conducted using a measurement consisting of seven items. This measurement was derived from previous studies by Ahmad et al. (2019). Ifinedo (2011) included eight measurement items to assess complexity. The assessment of interactivity was conducted using a measurement consisting of five items. This measurement was derived from previous studies conducted by (Ahmad et al., 2019).

RESULTS

The examination of Cronbach's Alpha in this study will examine the small sample size or the minimum variation among the study respondents. In studies that involve a substantial number of samples or substantial variability among participants, it is appropriate to employ research instruments with relatively low coefficients, namely r values more than 0.60 (Cates, 1990). Table 1 presents the reliability coefficients for all variables examined in the study. Furthermore, the concept of dependability can be described as the degree to which an experiment, test, or other measurement process produces consistent results when performed multiple times (Carmines & Zeller, 1979, p. 11; Jaganathan & Ishak, 2019)

**Table 1: Reliability assessment for variables**

Variable	Cronbach Alpha	No. of items
Digital Entrepreneurship Adoption	0.975	19
Relative Advantage	0.971	7
Compatibility	0.960	7
Complexity	0.846	8
Interactivity	0.968	5

According to the results, the Cronbach Alpha for digital entrepreneurship adoption exhibits the highest value, precisely 0.975. The reliability of the system, as measured by its relative advantage value (0.971), compatibility (0.960), complexity (0.846), and interactivity (0.968), is found to be higher than the minimum acceptable level of reliability, as established by McMillan and Schumacher (2006). Furthermore, there are no deleted items to increase the reliability of the design. Therefore, it can be inferred that using a questionnaire is advantageous and dependable for subsequent analysis.

CONCLUSION

The primary aim of this study is to assess the dependability of utilising digital entrepreneurship adoption within social media platforms and the conceptualisation of technological contexts. The findings of this study unequivocally demonstrate that all assessed constructs exhibit robust internal consistency, which remains stable across many research endeavours. Hence, the obtained results demonstrate a high level of appropriateness and reliability within the research context.

This study holds significance in guaranteeing the inclusion of digitisation as a pivotal approach by the government in the 12th Malaysia Plan (2021-2025) to enhance the digital economy, particularly in addressing the enduring and immediate repercussions of the COVID-19 epidemic. The COVID-19 pandemic that occurred from 2020 to 2021 has had a detrimental impact on the global economy, resulting in significant repercussions for the realm of digital entrepreneurship as it grapples with this unprecedented problem (Iivari et al., 2020; Modgil et al., 2022; Secundo et al., 2021).

REFERENCES

1. Abdullahi, I. N., Husin, M. H., Baharudin, A. S., & Abdullah, N. A. (2022). Determinants of Facebook adoption and its impact on service-based small and medium enterprise performance in northwestern Nigeria. *Journal of Systems and Information Technology*, 24(3), 246–267. <https://doi.org/10.1108/JSIT-11-2020-0249>
2. Ahani, A., Rahim, N. Z. A., & Nilashi, M. (2017). Forecasting social CRM adoption in SMEs: A combined SEM-neural network method. *Computers in Human Behavior*, 75, 560–578. <https://doi.org/10.1016/j.chb.2017.05.032>
3. Ahmad, S. Z., Abu Bakar, A. R., & Ahmad, N. (2019a). Social media adoption and its impact on firm performance: the case of the UAE. *International Journal of Entrepreneurial Behaviour and Research*, 25(1), 84–111. <https://doi.org/10.1108/IJEBR-08-2017-0299>
4. Ahmad, S. Z., Abu Bakar, A. R., & Ahmad, N. (2019b). Social media adoption and its impact on firm performance: the case of the UAE. *International Journal of Entrepreneurial Behaviour and Research*, 25(1), 84–111. <https://doi.org/10.1108/IJEBR-08-2017-0299>
5. Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N. I., & Shuib, N. L. M. (2015). Factors influencing the use of social media by SMEs and its performance outcomes. *Industrial Management and Data Systems*, 115(3), 570–588. <https://doi.org/10.1108/IMDS-07-2014-0205>
6. Ali Abbasi, G., Abdul Rahim, N. F., Wu, H., Iranmanesh, M., & Keong, B. N. C. (2022). Determinants of SME's Social Media Marketing Adoption: Competitive Industry as a Moderator. *SAGE Open*, 12(1). <https://doi.org/10.1177/21582440211067220>
7. Ardolino, M., Rapaccini, M., Saccani, N., Gaiardelli, P., Crespi, G., & Ruggeri, C. (2017). The role of digital technologies in the service transformation of industrial companies. <https://doi.org/10.1080/00207543.2017.1324224>, 56(6), 2116–2132.
8. Asliturk, E., Cameron, A., & Faisal, S. (2016). *Skills In The Digital Economy Information And Communications Technology Council*.
9. Bejjani, M., Göcke, L., & Menter, M. (2023). Digital entrepreneurial ecosystems: A systematic literature review. *Technological Forecasting and Social Change*, 189(January). <https://doi.org/10.1016/j.techfore.2023.122372>
10. Chatterjee, S., Chaudhuri, R., Vrontis, D., & Basile, G. (2021). Digital transformation and entrepreneurship process in SMEs of India: a moderating role of adoption of AI-CRM capability and strategic planning. *Journal of Strategy and Management*. <https://doi.org/10.1108/JSMA-02-2021-0049>
11. Chatterjee, S., Dutta Gupta, S., & Upadhyay, P. (2020). Technology adoption and entrepreneurial orientation for rural women: Evidence from India. *Technological Forecasting and Social Change*, p. 160.



- <https://doi.org/10.1016/J.TECHFORE.2020.120236>
12. Chatterjee, S., & Kumar Kar, A. (2020). Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India. *International Journal of Information Management*, 53(February), 102103. <https://doi.org/10.1016/j.ijinfomgt.2020.102103>
 13. Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change*, 150(October 2019), 119791. <https://doi.org/10.1016/j.techfore.2019.119791>
 14. European Commission. (2015). Report: Digital Transformation of European Industry and Enterprises | Internal Market, Industry, Entrepreneurship and SMEs. https://ec.europa.eu/growth/content/report-digital-transformation-european-industry-and-enterprises_en
 15. Eze, S. C., Chinedu-Eze, V. C. A., & Awa, H. O. (2021). Key Success Factors (KSFs) Underlying the Adoption of Social Media Marketing Technology. *SAGE Open*, 11(2), 1–15. <https://doi.org/10.1177/21582440211006695>
 16. Göcke, L., & Meier, P. (2021). Development and Validation of Platform Businesses in Digital Entrepreneurship. *Springer*, 87–102. https://doi.org/10.1007/978-3-030-53914-6_5
 17. Hinings, B., Gegenhuber, T., & Greenwood, R. (2018). Digital innovation and transformation: An institutional perspective. *Information and Organization*, 28(1), 52–61. <https://doi.org/10.1016/J.INFOANDORG.2018.02.004>
 18. Ifinedo, P. (2011). An empirical analysis of factors influencing internet/e-business technologies adoption by SMEs in Canada. *International Journal of Information Technology and Decision Making*, 10(4), 731–766. <https://doi.org/10.1142/S0219622011004543>
 19. Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020). Digital transformation of everyday life – How the COVID-19 pandemic transformed the basic education of the young generation and why information management research should care? *International Journal of Information Management*, 55(June), 102183. <https://doi.org/10.1016/j.ijinfomgt.2020.102183>
 20. Jaganathan, M., & Ishak, K. A. (2019). The Influence of Environmental Pressure on Information and Communication Technology: A Reliability Test. *IOSR Journal of Business and Management (IOSR-JBM) Journal of Business and Management (IOSR-JBM)*, 21(4), 47–49. <https://doi.org/10.9790/487X-2104034749>
 21. Jere, J. N., & Ngidi, N. (2020). A technology, organisation, and environment framework analysis of information and communication technology adoption by small and medium enterprises in Pietermaritzburg. *SA Journal of Information Management*, 22(1). <https://doi.org/10.4102/SAJIM.V22I1.1166>
 22. Kooskora, M. (2021). The Role of an Entrepreneurial Mindset in Digital Transformation-Case Study of the Estonian Business School. 143–164. https://doi.org/10.1007/978-3-030-53914-6_8
 23. Martín-Peña, M. L., Díaz-Garrido, E., & Sánchez-López, J. M. (2018). The digitalisation and servitisation of manufacturing: A review on digital business models. *Strategic Change*, 27(2), 91–99. <https://doi.org/10.1002/JSC.2184>
 24. Miniesy, R., Shahin, M., & Fakhreldin, H. (2022). The Determinants of Digital Entrepreneurship by Informal Micro and Small Enterprises (MSEs) in Egypt. *World Journal of Entrepreneurship, Management and Sustainable Development*, 18(4), 425–445. <https://doi.org/10.34190/EIE.21.103>
 25. Modgil, S., Dwivedi, Y. K., Rana, N. P., Gupta, S., & Kamble, S. (2022). Has COVID-19 accelerated opportunities for digital entrepreneurship? An Indian perspective. *Technological Forecasting and Social Change*, p. 175, 121415. <https://doi.org/10.1016/j.techfore.2021.121415>
 26. Murthy, K. V. B., Kalsie, A., & Shankar, R. (2021). Digital economy in a global perspective: Is there a digital divide? *Transnational Corporations Review*, 13(1), 1–15. <https://doi.org/10.1080/19186444.2020.1871257>
 27. Nambisan, S. (2017). Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship. *Entrepreneurship: Theory and Practice*, 41(6), 1029–1055. <https://doi.org/10.1111/etap.12254>
 28. Ng, H. S., Kee, D. M. H., & Ramayah, T. (2020). Examining the mediating role of innovativeness in the link between core competencies and SME performance. *Journal of Small Business and Enterprise Development*, 27(1), 103–129. <https://doi.org/10.1108/JSBED-12-2018-0379>
 29. Odoom, R., Anning-Dorson, T., & Acheampong, G. (2017). Antecedents of social media usage and performance benefits in small- and medium-sized enterprises (SMEs). *Journal of Enterprise Information Management*, 30(3), 383–399. <https://doi.org/10.1108/JEIM-04-2016-0088>
 30. Omar, F. I., Ahamd, N., Sheikh Kahiruddin, S. M. N., & Ahmad Dimyati, H. (2019). ICT Usage and Digital Inclusion among Entrepreneurs of Small and Medium Enterprises. *Journal of Management and Muamalah*, 9(1), 3–12.
 31. Pagani, M. (2013). Digital Business Strategy and Value Creation: Framing the Dynamic Cycle of Control Points. *MIS Quarterly: Management Information Systems*, 37(2), 617–632. <https://misq.org/digital-business-strategy-and-value-creation-framing-the-dynamic-cycle-of-control-points.html>
 32. Patil, A. S., Navalgund, N. R., & Mahantshetti, S. (2022). Digital Marketing Adoption by Start-Ups and SMEs. *SDMIMD Journal of Management*, 13, 47. <https://doi.org/10.18311/sdmimd/2022/29677>
 33. Qalati, S. A., LI, W., Vela, E. G., Bux, A., Barbosa, B., & Herزالah, A. M. (2020). Effects of Technological, Organisational, and Environmental Factors on Social Media Adoption. *Journal of Asian Finance, Economics and Business*, 7(10), 989–998. <https://doi.org/10.13106/jafeb.2020.vol7.no10.989>



34. Qalati, S. A., LI, W., Vela, E. G., Bux, A., Barbosa, B., & Herzallah, A. M. (2020). *Effects of Technological, Organisational, and Environmental Factors on Social Media Adoption*. *Journal of Asian Finance, Economics and Business*, 7(10), 989–998.
35. Qalati, S. A., Ostic, D., Sulaiman, M. A. B. A., Gopang, A. A., & Khan, A. (2022). *Social Media and SMEs' Performance in Developing Countries: Effects of Technological-Organizational-Environmental Factors on the Adoption of Social Media*. *SAGE Open*, 12(2). <https://doi.org/10.1177/21582440221094594>
36. Rahman, R. U., Shah, S. M. A., El-Gohary, H., Abbas, M., Khalil, S. H., Altheeb, S. Al, & Sultan, F. (2020). *Social media adoption and financial sustainability: Learned lessons from developing countries*. *Sustainability (Switzerland)*, 12(24), 1–26. <https://doi.org/10.3390/su122410616>
37. Satalkina, L., & Steiner, G. (2020). *Digital Entrepreneurship and its Role In Innovation Systems: A Systematic Literature Review as a Basis For Future Research Avenues For Sustainable Transitions*. *Sustainability (Switzerland)*, 12(7). <https://doi.org/10.3390/su12072764>
38. Secundo, G., Mele, G., Vecchio, P. Del, Elia, G., Margherita, A., & Ndou, V. (2021). *Threat or opportunity? A case study of the digital-enabled redesign of entrepreneurship education in the COVID-19 emergency*. *Technological Forecasting and Social Change*, 166(January), 120565. <https://doi.org/10.1016/j.techfore.2020.120565>
39. Srinivasan, A., & Venkatraman, N. (2018). *Entrepreneurship in digital platforms: A network-centric view*. In *Strategic Entrepreneurship Journal* (Vol. 12, Issue 1). <https://doi.org/10.1002/sej.1272>
40. Tajudeen, F. P., Jaafar, N. I., & Ainin, S. (2018a). *Understanding the impact of social media usage among organisations*. *Information and Management*, 55(3), 308–321. <https://doi.org/10.1016/j.im.2017.08.004>
41. Tajudeen, F. P., Jaafar, N. I., & Ainin, S. (2018b). *Understanding the impact of social media usage among organisations*. *Information and Management*, 55(3), 308–321. <https://doi.org/10.1016/j.im.2017.08.004>
42. Tornatzky, L. G., & Klein, K. J. (1982). *Innovation Characteristics and Innovation Adoption-Implementation: A Meta-Analysis of Findings*. *IEEE Transactions on Engineering Management*, EM-29(1), 28–45. <https://doi.org/10.1109/TEM.1982.6447463>
43. UNCTAD. (2019). *Digital Economy Report 2019 : Value Creation and Capture - Implications for Developing Countries*.
44. Vendrell-herrero, F., Bustinza, O. F., Parry, G., & Georgantzis, N. (2017). *Servitisation, digitisation, and supply chain interdependency*. *Industrial Marketing Management*, 60, 69–81. <https://doi.org/10.1016/j.indmarman.2016.06.013>