DISCUSSION PAPER 02/26 | 27 APRIL 2026

From Survival to Scale:

Digital Empowerment for Malaysia's Micro and Small Enterprises

Shazrul Suhaimi and Maryam Halim

Khazanah Research Institute

The **KRI Discussion Papers** are a series of research documents by the author(s) discussing and examining pressing and emerging issues. They are stand-alone products published to stimulate discussion and contribute to public discourse. In that respect, readers are encouraged to submit their comments directly to the authors.

The views and opinions expressed are those of the authors and may not necessarily represent the official views of KRI. All errors remain the authors' own.

DISCUSSION PAPER 02/26 | 27 APRIL 2026

From Survival to Scale: Digital Empowerment for Malaysia's Micro and Small Enterprises

This discussion paper was prepared by Shazrul Suhaimi and Maryam Halim, researchers from the Khazanah Research Institute (KRI) and Malaysia Digital Economy Corporation (MDEC). The authors are grateful for valuable comments and feedback from Dr Avvari V. Mohan (Monash University Malaysia), Dr Rachel Gong and Dr Jun-E Tan. We would also like to extend our gratitude to Salbiah Idris for her support throughout the process.

The authors would also like to thank the management of MDEC for their insights and for reviewing this discussion paper. The team has benefitted tremendously from the data given in preparation for this discussion paper. Specifically, we would like to thank Allan Cheah Wei Ming, Wan Amiruddin bin Wan Omar, Mohamad Alif bin Abdul Latif, Har Yen Yen, Mohd Redzuan Affandi bin Abdul Rahim and Sivarao A/L Aparahu for their support throughout the writing process.

Furthermore, the team would also like to extend our appreciation to CPA Australia for providing the data obtained from its annual APAC Small Business Survey as well as presenting the findings during the roundtable. Their findings have provided further evidence of the needs and considerations of MSMEs in Malaysia and the wider APAC region. Specifically, we would like to express our gratitude to Gavan Ord, Priya Terumalay, Sashmeeta Vanimuthu and Azfar Asa'Ad for their guidance throughout the duration of the project.

Authors' email addresses:

shazrul.suhaimi@krinstitute.org and **maryam.halim@mdec.com.my**

Icons used in graphics are from http://www.flaticon.com/.

Information on Khazanah Research Institute publications and digital products can be found at **www.KRInstitute.org**.

Cover photo by Theodore Nguyen: https://www.pexels.com/photo/crowded-bazaar-with-numerous-market-stalls-26904193/

Abbreviations

AI	Artificial intelligence
BDAI	Business Digital Adoption Index (BDAI)
BDI	Business Digitalisation Initiative
BNM	Bank Negara Malaysia
CRM	Customer Relationship Management
CS	Customer Service
DMA	Digital Maturity Assessment
DOSM	Department of Statistics Malaysia
ECERDC	East Coast Economic Region Development Council
GDP	Gross Domestic Product
MD	Malaysia Digital
MDEC	Malaysia Digital Economy Corporation
MECD	Ministry of Entrepreneur and Cooperatives Development
MIDA	Malaysia Investment Development Authority
MITI	Ministry of Investment, Trade and Industry
MOSTI	Ministry of Science, Technology and Innovation
MSMEs	Micro, Small, Medium Enterprises
NMD	National MSME Digitalisation
NPSTI	National Science, Technology and Innovation Policy
OECD	Organisation for Economic Cooperation and Development
POS	Point of Sale
SIRIM	Standard and Industrial Research Institute of Malaysia

Glossary

Artificial intelligence (AI)	A machine-based system that, for explicit or implicit objectives, infers from the input it receives. It can generate outputs based on predictions, content, recommendations or decisions that can influence the physical or virtual environment. However, different AI systems vary in their levels of autonomy and adaptiveness after deployment.[1]
Business Digital Adoption Index (BDAI)	A top-down benchmark developed by MDEC that scores adoption of digital technologies across core business and operational processes e.g. digital presence, digital processes, digital marketing, digital transactions, and enabling infrastructure.[2]
Business Digitalisation Initiative (BDI)	A government initiative under the Ministry of Digital to drive the digital transformation of businesses, including MSMEs. It aims to increase digital adoption among businesses, enhancing their competitiveness, productivity and efficiency in the digital economy.[3]
Business function	A business function is an activity conducted by a firm in their daily operations. It is divided into two components, namely (1) core and (2) support functions. (1) Core functions are activities of firms that generate income: including activities like the production and sales of final goods or services intended for the market or for third parties. Typically, it would make up the primary activity of the firm but may only include other (secondary) activities if the firm determines them to be a core function. (2) Support business functions are activities carried out by firms to permit or facilitate the core function. The outputs of support business functions are not intended to be sold to the market or to third parties. Examples include distribution and logistics, marketing, administrative and management functions, etc.[4]
Digital adoption in business	Refers to the effective integration and use of digital technologies across business functions to support performance and operational objectives.[5]
Digital technology	Refers to different types of communication networks and systems, including information processing and compute capacity and the technologies used in them. These would include a 'physical layer' e.g. communication infrastructure and a 'digital layer' e.g. cloud and edge computing software, of technologies as well as goods and services that enable the digital technology ecosystem. This ecosystem encompasses

[1] OECD (n.d.)
[2] MDEC (2023)
[3] Ministry of Digital (2024)
[4] Eurostat (n.d.-a)
[5] OECD (2021)

	all forms of communication, information and computing technologies such as IoT, artificial intelligence systems, etc.[6]
Digital Maturity Assessment (DMA)	The Digital Maturity Assessment (DMA) is an assessment developed by MDEC to measure a business's level of digital maturity across five levels, based on front office, middle office, and back-office functions.[7]
e-invoice	A digital representation of a transaction between a supplier and a buyer, formatted in a structured, machine-readable manner. It is a file created in the format specified by the Inland Revenue Board Malaysia (IRBM) (e.g. in XML or JSON file format) and not in the form of a PDF, JPG, etc. All eligible taxpayers undertaking commercial activities in Malaysia are required to issue an e-invoice. For MSMEs, the IRBM will provide support to MSMEs that comply with the e-invoicing requirements through publicly available platforms via. MyInvois Portal and MyInvois Mobile App.[8]
Entrepreneurship	A dynamic process in identifying, creating, evaluating and exploiting business opportunities.[9]
Information and Communication Technologies (ICT)	Covers all technical means used to handle information and aid communication. This includes both computer and network hardware, as well as their software.[10]
Internet of Things (IoT)	Refers to devices with embedded sensors, processing ability, software and other technologies that allows to connect and exchange data with other devices and systems across the internet or other communication devices. These devices are also known as 'smart' devices.[11]
Micro, small, medium enterprise (MSME)	They are companies that are defined according to their sector, sales turnover and the number of full-time employees. For the manufacturing sector, MSMEs are defined as firms with a sales turnover not exceeding RM50 million or with a number of full-time employees not exceeding 200. Meanwhile, for the non-manufacturing sectors, they are defined as firms with a lower sales turnover of under RM20 million or the number of employees does not exceed 75 people.[12]

[6] OECD (2024a)
[7] MDEC (2025)
[8] IRBM (2025)
[9] MECD (2020)
[10] Eurostat (n.d.-b)
[11] Eurostat (n.d.-c)
[12] SMECorp (n.d.)

Summary

While Malaysia has made significant progress in expanding digital infrastructure and introducing a wide range of support programmes, this paper finds that digital adoption among micro and small enterprises remains relatively broad but shallow. Most firms have achieved basic levels of connectivity and digital presence, but fewer have progressed towards more integrated, data-driven, and productivity-enhancing use of digital technologies.

Evidence from the Digital Maturity Assessment (DMA), Business Digital Adoption Index (BDAI), and CPA Australia survey points to a consistent pattern of early-stage digitalisation among micro and small enterprises. Adoption is largely concentrated in front-facing and transactional activities, particularly in sales, marketing, and payments, while back-end processes remain less digitalised. Digital tools are often implemented in isolation, with limited integration across business functions, and adoption tends to be reactive, driven by immediate operational needs rather than longer-term strategic planning. As a result, the productivity and efficiency gains associated with digitalisation remain limited.

The findings suggest that the key constraints to deeper digitalisation are primarily structural rather than technological. Financial limitations, informal business practices, capability gaps, and limited access to advisory support constrain firms' ability to invest in and effectively utilise digital tools. At the same time, fragmentation across programmes and agencies creates additional barriers for micro and small enterprises in navigating available support. Spatial disparities further contribute to uneven digital adoption across regions.

Despite these challenges, there are emerging signs of progress. More recent evidence indicates increasing use of digital payments, growth in online sales, and rising interest in technologies such as artificial intelligence (AI), suggesting that digitalisation is becoming more closely linked to business performance. However, without targeted and sustained support, these gains may remain uneven across firms and locations.

This paper argues that Malaysia's approach to MSME digitalisation must evolve from expanding access to digital tools towards enabling progression along the digital maturity spectrum. This includes strengthening data infrastructure through a timelier and more accessible MSME digitalisation tracker, addressing spatial inequalities through targeted and place-based interventions, and providing tiered, capability-driven support aligned with firms' levels of digital readiness. In addition, expanding community-based and peer-led learning models, alongside improving inter-agency coordination through a more unified and user-friendly support ecosystem, will be critical in reducing fragmentation and improving access.

Unlocking the full potential of digitalisation for micro and small enterprises will require a more coordinated, capability-focused, and context-sensitive ecosystem. By supporting firms to move beyond survival-oriented adoption towards more integrated and strategic use of digital technologies, Malaysia can strengthen the role of micro and small enterprises as drivers of inclusive, resilient, and sustainable economic growth.

Table of Contents

1. Introduction

In the past decade, digital transformation has rapidly reshaped business landscapes worldwide. Integrating digital technologies into everyday business operations is no longer seen as optional but has instead become a critical factor for survival and competitiveness. From e-commerce and automation to cloud computing and artificial intelligence, digital technologies are enabling businesses to operate more efficiently, access wider markets, and respond more dynamically to changing consumer demands.

Micro and small enterprises account for the vast majority of businesses in Malaysia and play a central role in Malaysia's economic engine. At the same time, these enterprises are deeply embedded in local communities and niche markets, serving as key drivers of grassroots economic activity. Their digitalisation is crucial not only to strengthen Malaysia's economy and increase the country's competitiveness in the region, but also for promoting more inclusive growth by extending the benefits of digital transformation to other smaller businesses and the communities they support. Digitalisation offers a pathway for smaller businesses to address long-standing constraints related to scale, market access, and operational capacity due to limited financial and human resources.

For micro and small enterprises, even basic forms of digitalisation can deliver meaningful benefits (see Box Article 1). Simple tools such as digital payments, online sales channels, and basic record-keeping systems can improve cash flow management, reduce operational frictions, and expand customer reach beyond physical locations (see **Error! Reference source not found.**). Platforms such as social media and online marketplaces allow firms to access wider markets with relatively low upfront costs, while point-of-sale systems and bookkeeping applications support more efficient day-to-day operations.

By lowering barriers to participation in digital markets and services, digitalisation has the potential to narrow gaps between smaller firms and larger enterprises. Beyond efficiency and sales, digitalisation also strengthens business resilience. Enterprises with digital records and online channels are better able to adapt during periods of disruption, maintain continuity, and identify alternative revenue streams. Furthermore, digital records would further support MSMEs in their pursuit of accreditations/standards (especially for requirements for ESG) whilst also providing data evidence for grant applications.

2. Despite their importance, micro and small enterprises face persistent barriers to digitalisation, including limited financial capacity, constrained human resources with uneven digital skill levels, and challenges in accessing financing, advisory services, or structured training. Micro and small enterprises in Malaysia are often owner-operated firms with limited formal structures, which can further limit engagement with formal support systems. Their prevalence is also higher in lower-income states. These structural features shape how micro and small enterprises engage with digitalisation and highlight the need for approaches that account for differences in firm size, capability, and local context. Detailed micro, small, and medium enterprise (MSME) profile data are provided in Appendices

Appendix 1: Profile of MSMEs in Malaysia.

Publicly available analysis on micro and small enterprises remains limited, particularly in understanding how they adopt digital tools and whether these efforts translate into meaningful operational or growth outcomes. As such, this discussion paper seeks to answer four research questions, namely:

1. What is the current landscape of MSME digitalisation in Malaysia, and how supportive is the existing ecosystem?
2. What is the state of digitalisation among micro and small enterprises?
3. What are the key challenges preventing micro and small enterprises from achieving deeper and more effective digitalisation?
4. What measures are needed to encourage greater digitalisation among micro and small businesses?

To answer these questions, this paper utilises four main data sources, namely two from the Malaysia Digital Economy Corporation (MDEC), one from CPA Australia as well as insights obtained from a KRI-CPA Australia roundtable discussion with representatives from key stakeholders.

The data provided by MDEC include a pilot of the Business Digital Adoption Index (BDAI) and findings from the initial deployment of the Digital Maturity Assessment (DMA), which is part of the Business Digitalisation Initiative (BDI). BDAI is a top-down benchmark that scores digital adoption across core domains, while the DMA is a bottom-up self-assessment for businesses that maps eight business functions to five maturity levels. Findings from CPA Australia are from their annual APAC Small Business Survey, which is a study on MSMEs across the Asia Pacific region. Lastly, qualitative data was also collected through a roundtable discussion held in May 2025. Further details on the methodology can be found in

Appendix 2: Methodology.

Box Article 1: Digital Platforms as a Growth Lever for Micro-Entrepreneurs

Khairul Amin Kamarulzaman, widely known as Khairulaming, illustrates how digital platforms can enable micro-entrepreneurs to overcome traditional constraints related to market access, scale, and capital. He first gained visibility in 2018 through short-form cooking videos on social media. His content-driven approach rapidly expanded his audience[13], demonstrating how digital platforms allow individuals to reach large consumer bases without physical storefronts or formal marketing budgets.

This digital presence later served as the foundation for his entry into business through the launch of 'Sambal Nyet'[14]. Rather than relying on conventional distribution channels, awareness and demand for his product were generated primarily through social media engagement. Direct consumer responses from his audience played a central role in product development, allowing improvements without high upfront costs. Much of the initial revenue was reinvested into the business, supporting gradual expansion.

As the business scaled, e-commerce and livestreaming became the primary sales channels. By 2024, the company recorded sales growth form RM20 million to RM42 million year-on-year, with approximately 70 percent of sales generated through livestream commerce[15], particularly through platforms such as TikTok. Livestreaming enabled real-time interaction with customers, reduced reliance on intermediaries, and significantly lowered customer acquisition costs.

While Khairulaming's enterprise has since grown beyond the scale of a micro-enterprise, its early trajectory highlights how digital tools can reduce entry barriers for micro-entrepreneurs. Low-cost platforms, algorithm-driven content discovery, and direct consumer engagement allow small businesses to reach markets beyond their immediately locality, test products rapidly, and scale operations incrementally. This case underscores how digitalisation, even at a basic level, can support revenue growth, operational resilience, and market expansion for micro-enterprises operating with limited resources.

[13] Misrani and Shadan (2020)
[14] Sabrina (2023)
[15] Khaw (2025)

Box Article 2: Why FinTech Adoption Matters for Micro and Small Enterprises

Financial technology (FinTech) adoption represents a critical dimension of MSME digitalisation. While digital transformation is frequently framed in terms of online marketing, e-commerce platforms, or social media presence, digital financial tools operate at a more structural level by embedding transparency, traceability, and data generation into core business processes.

International evidence indicates that digital financial services reduce information asymmetries between small firms and lenders, improve record-keeping practices, and facilitate more efficient allocation of credit.[16] For micro and small enterprises, which often operate with limited collateral and informal financial practices, the digitisation of transactions and accounting can generate verifiable financial histories that strengthen creditworthiness. Alternative financing models, including peer-to-peer lending and platform-based credit scoring, further expand access to capital by leveraging transaction data rather than traditional collateral requirements.

In Malaysia, broader financial inclusion and digital payments infrastructure have expanded substantially over the past decade. Bank Negara Malaysia's Financial Inclusion Framework highlights the increasing use of electronic payments and digital financial services across the population, creating an enabling environment for enterprise-level adoption.[17] However, connectivity and payments access do not automatically translate into integrated financial management practices at the firm level. Micro-enterprises, in particular, frequently rely on informal bookkeeping methods or commingle personal and business accounts, limiting the productivity and financing gains associated with digital adoption.

The phased implementation of mandatory e-invoicing further underscores the growing centrality of digital financial records within Malaysia's business ecosystem. Although smaller firms are initially exempt, voluntary adoption of digital invoicing and accounting systems may enhance compliance readiness, improve cash flow visibility, and support integration into formal supply chains. Beyond credit access, research also links digital financial tools to improved firm resilience. SMEs that adopt integrated digital payment and accounting systems demonstrate greater operational continuity during economic disruptions and are better positioned to participate in digital commerce ecosystems.[18]

Taken together, FinTech adoption should be understood not merely as a transactional convenience, but as a foundational layer of digitalisation that underpins formalisation, financing access, resilience, and scalable growth among micro and small enterprises.

[16] OECD (2021)
[17] BNM (2023)
[18] OECD (2024b)

3. Malaysia's MSME Digitalisation Policy Landscape

Recognising the importance of MSMEs as the backbone of the economy, Malaysia's national development policies consistently position MSMEs as key drivers of inclusive economic growth and resilience. In practice, this policy emphasis has translated into a broad range of government-led interventions delivered through multiple ministries and agencies, signalling strong public-sector commitment to MSME development.

As digitalisation has become central to MSME productivity and growth, digital support has been embedded across many of these interventions[19] (refer to Table 1). Five overarching themes are emphasised: enhancing digital talent, fostering public–private collaboration and knowledge networks, raising digital awareness, expanding market access and exports, and providing financial assistance for digital transformation.

Table 1: Government policies, blueprints and initiatives containing elements of business digitalisation (non-extensive)

Ministry	Key Agencies	Policy and Blueprints	Initiatives
Ministry of Digital	MDEC, MyDigital Corporation, MYNIC	• Malaysia Digital Economy Blueprint • National E-Commerce Strategic Roadmap 2.0 • National Digital ID Framework	• Malaysia Digital (MD) • Business Digitalisation Initiative (which includes the Digital Maturity Assessment) • e-Usahawan • National e-Invoicing Initiative (with the Inland Revenue Board of Malaysia) • My Digital ID • AI Untuk Rakyat • .MY domain registration
Ministry of Entrepreneur Development and Cooperatives	TEKUN, SMECorp	• National Entrepreneurship Policy 2030	• Micro Connector Programme • TEKUN Digital • Go Digital MADANI • MSME Digitalisation Grant • Digital Xccelerator
Ministry of Science, Technology and Innovation	MRANTI, MIMOS	• National Policy on Science, Technology and Innovation (NPSTI)	• Technology Innovation Sandbox • Research Commercialisation Grant
Ministry of Investment, Trade and Industry	MATRADE, MIDA, MPC, MARii, SIRIM	• New Industrial Master Plan 2030 • Industry4WRD • Malaysia Productivity Blueprint • National Trade Blueprint	• SME Exporters Digitalisation Programme • Regulatory Sandbox for Digitalisation
Ministry of Economy	N/A	• 13th Malaysia Plan • National 4IR Policy	

[19] Ministry of Economy (2021)

Source: Ministry of Economy (2021); MDEC (2021a); MyDigital ID (n.d.); MECD (2020); MOSTI (2022); MITI (2023); MITI (2018); EPU (2017); MITI (2021); EPU (2021)

The breadth of initiatives outlined in Table 1 underscores the extent to which digitalisation has become a central pillar of Malaysia's MSME development agenda. This emphasis has been reinforced through Malaysia's national plans. Under the 13th Malaysia Plan (RMK-13), MSMEs are expected to increase their contribution to GDP from 39.1 percent in 2023 to 50 percent by 2030, with digital adoption explicitly identified as a key driver of this growth.[20] Achieving this target is closely linked to productivity improvements, business upgrading, and the ability of micro and small enterprises to participate more effectively in higher value-added activities. RMK-13 further frames digitalisation, including wider AI adoption, as essential to enabling new business models, expanding access to digital platforms, and supporting scaling through more sustainable, tiered, and targeted financing mechanisms.

At the same time, while these priorities signal strong national commitment, the proliferation of programmes has reinforced coordination challenges, which may make it difficult for smaller businesses to navigate the business digitalisation landscape. These challenges are longstanding. A World Bank assessment found that between 2016 and 2019, more than 270 SME support initiatives were administered by over 80 agencies, with a strong emphasis on loans and grants.[21] For micro-enterprises with limited administrative capacity or operating informally, such complexity continues to constrain effective access to digitalisation-related support.

RMK-13's strategic direction represents a broader shift in Malaysia's MSME support strategy, from survival-oriented interventions centred primarily on financial assistance towards a more transformative agenda focused on productivity growth, innovation, and scaling. In 2025, the government sought to address persistent access and coordination challenges by introducing the Business Digitalisation Initiative (BDI) under the MADANI framework, spearheaded by MDEC. BDI adopts a public–private partnership model that brings together financing and expertise from financial institutions, digital banks, peer-to-peer lending platforms, and local service providers, with the aim of streamlining access to digitalisation support for MSMEs (see Box Article 3).

Against this policy and delivery context, the following section examines the current state of digitalisation among micro and small enterprises in Malaysia, drawing on firm-level data and stakeholder insights.

[20] Ministry of Economy (2025)
[21] World Bank (2022)

Box Article 3: Malaysia's Business Digitalisation Initiative

Introduction

The Business Digitalisation Initiative (BDI)[22] was introduced in March 2025 under the MADANI Government and spearheaded by the Malaysia Digital Economy Corporation (MDEC), an agency of the Ministry of Digital. It represents Malaysia's flagship effort to accelerate business digital adoption through a 'whole-of-nation' approach to ensure businesses of all sizes and across all states can access the necessary tools, financing, and guidance to enhance their competitiveness in a rapidly evolving digital economy.

Objectives

- To address key pain points among businesses in Malaysia when it comes to digitalisation.
- To accelerate digital adoption among businesses nationwide, including MSMEs.

Key Features

- **Public–private partnerships** with ecosystem stakeholders such as Ministries, Agencies, Industry Associations, Digital Solution Providers, Financial Institutions, Digital banks and Alternative financing platforms
- **Digital Maturity Assessment:** Enables businesses to assess and understand their readiness (Digital Maturity Level), and subsequently to access to tailored digital technology solutions, financing support, advisory services, and capacity-building programmes to accelerate digital adoption.

Intervention Areas

- **Digital solutions:** Credible and validated technology solution providers that offer practical, fit-for-purpose tools, solutions, and services to enable business digitalisation
- **Access to financing:** Financial institutions including alternative financing partners that facilitate funding opportunities for business digitalisation journey, and that could provide digital financing solutions to businesses.
- **Tech business advisory:** Industry experts and practitioners, and advisory firms to guide businesses in digital adoption, business digital transformation, and innovation - leveraging on various digital tools and models including AI and cloud, cyber security and having clear IT / digital policies and guidelines.
- **Capacity and capability building:** Capacity building institutions and professional bodies in digital skills enhancement, as well as other ecosystem enablers with guidance on leveraging of models such as gig and sharing economy for sharing of assets, skills and resources.

Significance

BDI reflects a shift from fragmented MSME digitalisation programmes toward a more cohesive, business-centric, and inclusive model. By integrating financing, advisory, and practical tools within one initiative, it positions MSMEs for greater productivity, efficiency, and competitiveness in the digital economy.

4. State of MSME Digitalisation in Malaysia

This section examines the current state of MSME digitalisation in Malaysia using a combination of official statistics and complementary firm-level evidence. Nationally representative data provide an overview of digital adoption patterns among MSMEs, while additional datasets offer more granular insights into how micro and small enterprises engage with digital tools in practice.

A key limitation of official statistics is that most indicators of digital adoption are not disaggregated by enterprise size, and therefore there is no direct assessment of micro and small enterprise digital readiness. Nevertheless, given that micro and small enterprises account for about 95% of firms in Malaysia, aggregate trends in areas such as internet usage, web presence, and adoption of basic digital tools provide a useful baseline for understanding the overall state of MSME digitalisation.[23]

These patterns are complemented in subsequent subsections by targeted datasets and qualitative insights that shed light on firm-level depth, maturity, and constraints, particularly among micro and small enterprises. Non-DOSM data is also more recent, providing better insights into adoption of recently popular digital tools such as generative AI.

4.1. Official Statistics of MSME Digitalisation

Official MSME digitalisation statistics from the Department of Statistics Malaysia (DOSM) are primarily drawn from the Economic Census. These data provide a nationally representative snapshot of access to and basic uptake of digital tools among MSMEs, including indicators related to internet usage, web presence, and selected forms of digital engagement.

However, as a periodic census focused on broad adoption, the data offer limited insight into the depth of digital integration, quality of use, or productivity impacts of digitalisation. Given the rapid pace of digital change and the five-year census cycle, with the latest wave in 2023, these data are unlikely to capture more recent developments, including the growing use of emerging tools such as generative AI among businesses in 2024. These aspects will be explored in more detail in Section 2.2.

Among MSMEs in Malaysia, internet access is near-universal. Internet and computer usage by MSMEs in 2022 was at 95.8%. (Figure 1). Web presence has also improved tremendously, from 20.1% in 2015 to 70.8% in 2022 (Figure 2). Social media is the most common type of web presence for MSMEs. These statistics imply that most MSMEs can be reached online, which lowers the cost of outreach and support.

[22] MDEC (2025)
[23] SMECorp (2025a)

Figure 1: Internet usage, computer usage, and web presence by MSMEs, 2015 & 2022

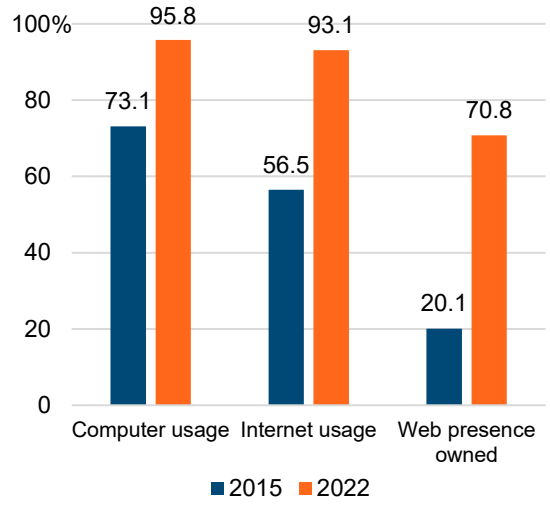
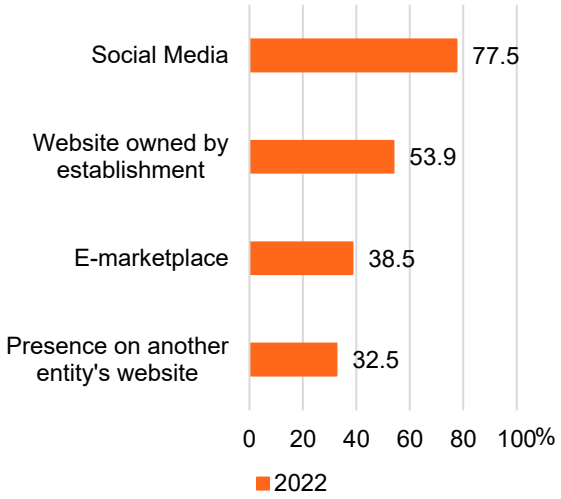


Figure 2: Types of web presence for MSMEs, 2022

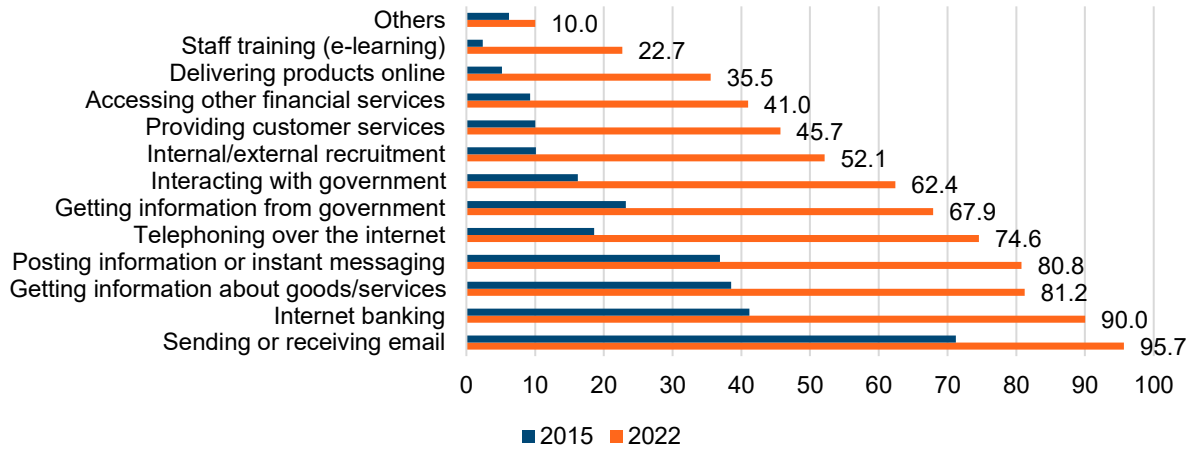


Source: DOSM (2024b)

MSMEs' use of the internet is concentrated on administrative and payment–related activities, while engagement in capability-building remains limited. The most common uses are sending or receiving emails and internet banking, reported by 95.7% and 90% of MSMEs respectively (Figure 3). Other frequently cited activities include obtaining information from government organisations (67.9%) and interacting with government services (62.4%). In contrast, self-training via e-learning has the lowest usage, at 22.7%.

Taken together, these patterns suggest that MSMEs primarily use the internet to support day-to-day operations and regulatory compliance, rather than to invest in longer-term capability development such as workforce training.

Figure 3: Purpose of internet usage by MSMEs, 2015 & 2022



Source: DOSM (2024b)

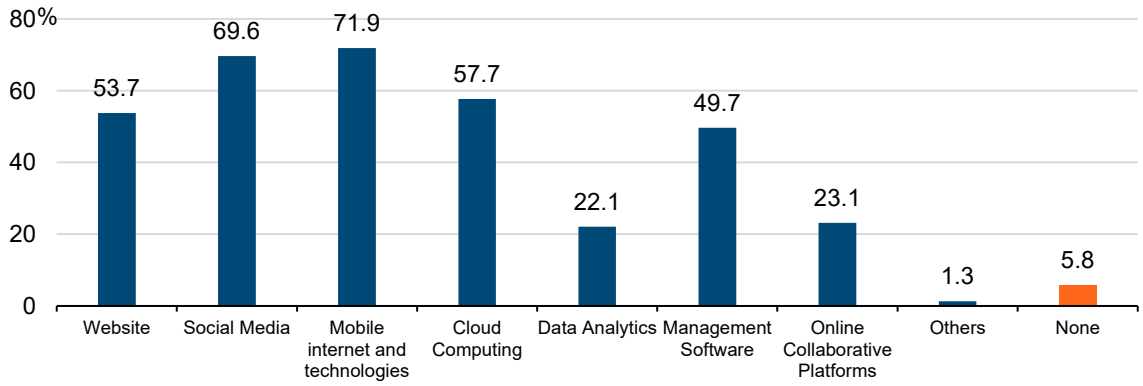
Note: Others include downloading software, entertainment and online storage space.

Technology uptake among MSMEs is broad at the surface but remains limited for advanced tools. The highest usage of digital technologies was for mobile internet and technologies (71.9%), followed by social media (69.6%) and cloud computing (57.7%) (Figure 4). By contrast, usage is lowest in the 'Others' category, at 1.3%, which includes technologies such as Internet of Things (IoT) and AI.

It should be noted that these data predate the widespread diffusion of generative artificial intelligence tools in 2024. As such, reported AI usage likely reflects adoption of more traditional or enterprise-oriented AI applications, rather than the newer generation of low-cost, user-friendly tools that have recently become more accessible to smaller firms.

Lastly, 5.8 percent of MSMEs report not using any form of digital technology. These represent a gap that needs further investigation to understand why they are opting out of using digital technology in their daily business operations.

Figure 4: Usage of digital technology by MSMEs (2022)



Source: DOSM (2024b)

Note: Others include digital tools such as digital payments (e.g. DuitNow QR), artificial intelligence (AI) and the Internet of Things (IoT).

As for e-commerce, participation among MSMEs remains relatively modest. According to the Economic Census, only 70,463 MSMEs (Figure 5) were reported as being involved in e-commerce activities, equivalent to 6.6 percent in 2022 (Figure 6). This underscores the gap between widespread internet access and web presence, and the ability of firms to translate connectivity into actual digital transactions and revenue generation.

For micro and small enterprises, limited financial and human resources, uneven digital skills, and continued reliance on informal or offline sales channels are likely to constrain deeper engagement with e-commerce.

Figure 5: Number of MSMEs involved in e-commerce, 2015 & 2022

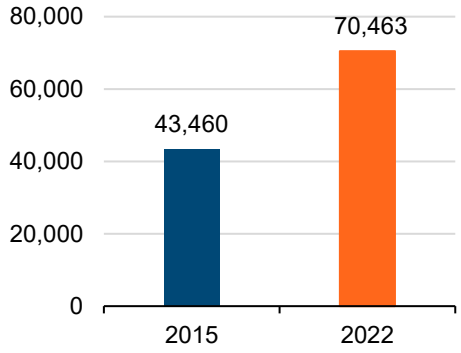
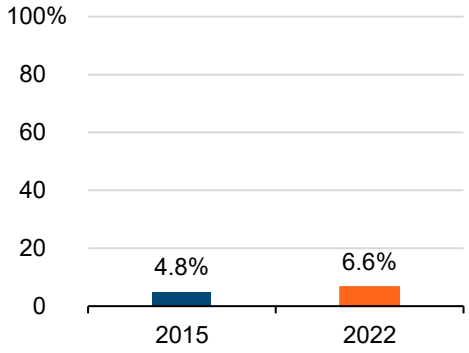


Figure 6: Percentage of MSMEs involved in e-commerce, 2015 & 2022



Source: DOSM (2024b)

The official statistics show that while MSMEs are increasingly connected and digitally visible, far fewer are transacting online or using digital tools to support core business decisions.

It should be noted that these findings are based primarily on Economic Census data from 2022 and may not fully reflect more recent shifts in digital practices. The following section therefore draws on complementary data sources to examine how this gap manifests among micro and small enterprises, and to assess the depth of digitalisation beyond basic adoption.

4.2. Other Measurements of Business Digitalisation

We use two complementary measures developed by MDEC to assess MSME digitalisation. The **Digital Maturity Assessment (DMA)** is a bottom-up self-assessment available with the Business Digitalisation Initiative (BDI) that maps eight business functions to five maturity levels. The **Business Digital Adoption Index (BDAI)** is a top-down benchmark that scores adoption across core domains, for example digital presence, digital processes, digital marketing, digital transactions, and enabling infrastructure.

The two datasets triangulate a consistent picture of early-stage, fragmented digitalisation among micro-enterprises, while revealing sectoral and spatial differences that aggregate statistics may hide. These findings are from pilot studies of both approaches, so their results are indicative rather than nationally representative. The following pages summarise what they reveal about micro and small enterprises in Malaysia. The last section also touches upon a survey by CPA

Australia that provide additional evidence on small businesses in Malaysia and is the most recent dataset examined in the paper.

Data from the Business Digitalisation Initiative: Digital Maturity Assessment (DMA) Workshops

As part of the Business Digitalisation Initiative, the Digital Maturity Assessment (DMA)[24] was developed. The DMA is a self-administered assessment performed by businesses to evaluate how far a business has digitalised or adopted digital tools across eight business functions under three categories:

1. **Back Office:** IT management
2. **Middle Office:** Accounting and finance, talent management, legal, product innovation, supply chain
3. **Front Office:** Sales and marketing, customer service

Assessing digital maturity across eight business functions enables the DMA to capture a more comprehensive picture of a business's digital adoption. This approach moves beyond front-office digitalisation alone and emphasises the importance of embedding digital tools and practices across internal operations, management functions, and customer-facing activities to support more balanced and sustainable business growth.

The DMA then classifies firms into five maturity levels, namely from Level 1: Unaware to Level 5: Advanced. A matrix of the five levels of digital maturity and business functions used within the DMA, alongside technology examples, can be seen in

[24] MDEC (2024)

Table 2.[25] As a self-assessment tool, businesses can answer structured questions related to their digital behaviours, systems in use, and strategic capabilities. Responses are mapped against a scoring rubric to assign each business a maturity level.

[25] MDEC (2025)

Table 2: Digital maturity levels and business functions according to the Digital Maturity Assessment

Level	Back Office[26]	Middle Office[27]	Front Office[28]	Examples of Technology Used
Level 1 Unaware ***Not using digital tools in business functions***	Absence of IT infrastructure and function	Operations are still exclusively conducted in paper-based format	Sales methods are fixed, with limited utilisation of social media	• Messaging apps • Social media
Level 2 Basic ***Using basic digital tools in some parts of the company***	Minimal digital capabilities Absence of digital risk awareness	Limited knowledge of digital and innovation Lack of data-driven decision-making	Minimal understanding of Customer Service (CS) and Customer Relationship Management (CRM) tools	• Office productivity applications (e.g. Microsoft Office, Google Workspace) • Online delivery services
Level 3 Developing ***Using more comprehensive digital tools with advanced features***	Certain functions use digital solutions Ad-hoc and basic digital risk assessment	Basic data collection Minimal collaboration with IT team	Usage of digital marketplace Use of basic CS and CRM tools	• E-Commerce platforms • Standalone, unintegrated digital tools (e.g. tax management, CRM, digital marketing, finance tools)
Level 4 Established ***Executing a proper plan that drives digital solutions across the business***	Partial digital process automation Periodic digital risk assessment	Usage of data analytics tools Regular alignment between IT and other functions	Enhanced digital channels to increase customer engagement Integrated CS and CRM platforms	• Dedicated software for all or most business functions, integrated functions
Level 5 Advanced	Automation of digital processes	Data-driven decision-making	Enhanced digital channels	• Integrated AI, IoT, and frontier technologies

[26] Refers to functions such as IT management.
[27] Refers to functions such as accounting and finance, talent management, legal, product innovation, and supply chain management.
[28] Refers to functions such as sales and marketing, and customer service.

Innovating new digital solutions and adopting frontier technologies	Comprehensive digital risk management	Active collaboration between IT and other functions	Integrated CRM and CS platforms across business functions	

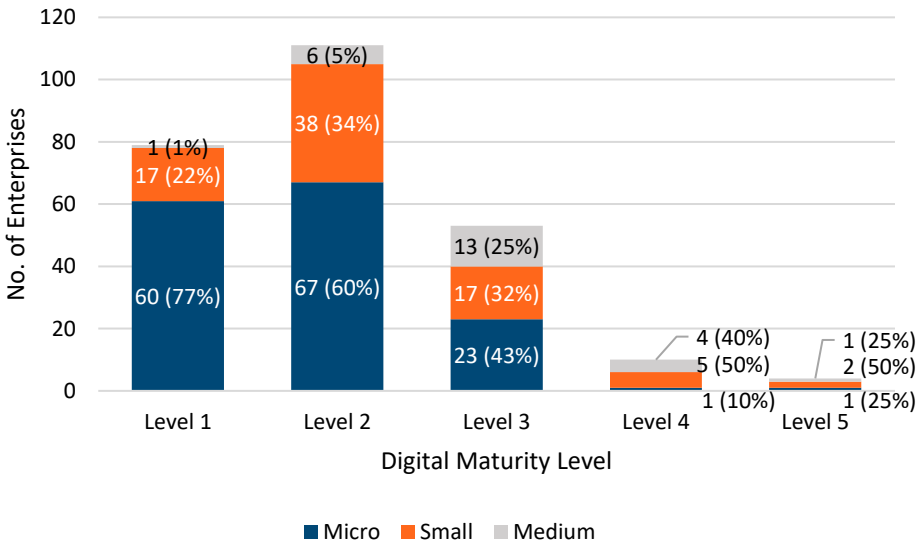
Source: MDEC (2025)

The DMA has since been made publicly accessible through the Business Digitalisation Initiative (BDI). The findings presented in this section are based on data collected prior to BDI's public launch, drawing from six regional workshops conducted by MDEC across Malaysia between September 2023 and April 2024. These workshops involved a total of 256 MSME participants, all of whom were required to complete the DMA as part of the programme to assess their level of digital maturity (

Appendix 2: Methodology).

The findings indicate that MSMEs at the lower levels of digital maturity are predominantly micro and small enterprises. The majority of MSMEs assessed were clustered at Digital Maturity Levels 1 (Unaware) and 2 (Basic), with micro-enterprises comprising the largest share at these levels, accounting for 77 percent and 60 percent respectively (Figure 7). This suggests that smaller firms are more likely to remain at the early stages of digitalisation, where adoption is limited in scope and oriented towards immediate operational needs.

Figure 7: Surveyed MSMEs in Malaysia, by digital maturity level



Source: MDEC (2024)

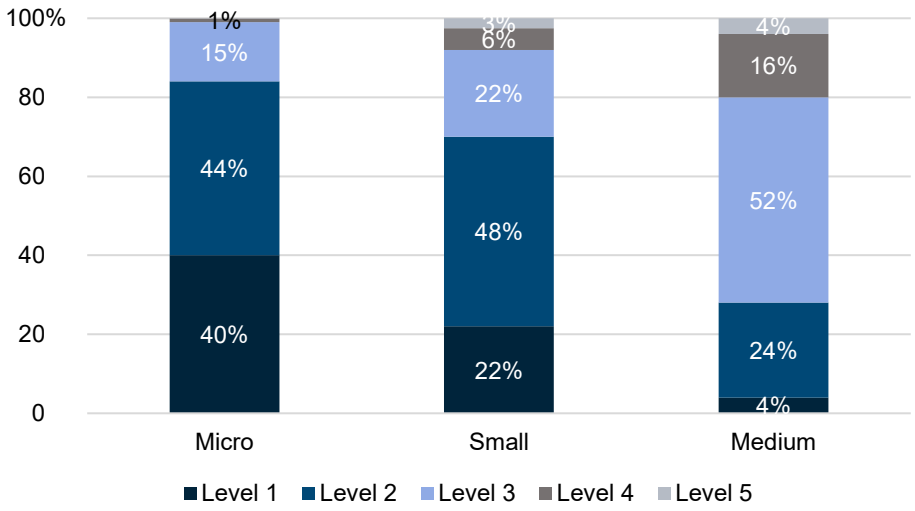
For micro and small enterprises at Level 1 and Level 2, digitalisation is largely front-loaded and transactional in nature. Adoption is concentrated in front-office and essential mid-office functions, particularly sales and marketing, customer service, and accounting and finance. Common practices include the use of social media or messaging applications for customer engagement, digital payment systems at the point of sale, and basic spreadsheets for financial tracking. However, these tools are often implemented in isolation, with limited integration across business functions and minimal use of data for performance monitoring or decision-making. Adoption is frequently driven by short-term survival needs, peer influence, or prevailing trends rather than structured business planning.

Across Digital Maturity Levels 1 and 2, digitalisation challenges are primarily structural rather than technological. Financing emerges as the most critical constraint, closely intertwined with limited awareness, knowledge gaps, and basic operational readiness. Many micro and small enterprises struggle with poor bookkeeping practices, incomplete documentation, and reliance on personal bank accounts, which restrict their ability to apply for financing (e.g. grants) or justify more comprehensive digital investments. According to respondents, unclear pricing structures for digital solutions and uncertainty around upfront costs further discourage adoption, reinforcing cautious and piecemeal digitalisation behaviour. As a result, digitalisation among micro and small enterprises remains largely superficial, with relatively few progressing towards more integrated and strategic use of digital tools across their operations.

Figure 8 presents the proportional distribution of MSMEs across digital maturity levels by firm size. The results show a clear maturity gradient as firm size increases, with micro-enterprises heavily concentrated at Levels 1 and 2, reflecting limited and basic digital adoption. Small enterprises display a more balanced distribution, with a larger share progressing to Level 3 and beyond compared to micro firms, suggesting greater capacity to experiment with and sustain more structured digital practices. Medium enterprises are predominantly clustered at Level 3, with a growing presence at Levels 4 and 5, indicating a shift towards more established and integrated digital adoption supported by stronger organisational and investment capacity.

At the same time, the proportional breakdown shows that digital advancement is not exclusive to larger enterprises. A non-negligible share of micro and small firms has reached intermediate maturity levels, demonstrating that progression beyond basic digital use is achievable even at smaller scales. This supports the view that while firm size is strongly associated with higher digital maturity, it does not constitute a hard barrier. Targeted interventions can therefore play a critical role in enabling smaller firms to progress along the digital maturity spectrum.

Figure 8: Distribution of MSMEs by Digital Maturity Level and Firm Size (%)



Source: MDEC (2024)

Overall, the DMA results indicate that MSME digitalisation in Malaysia remains concentrated at basic levels, particularly among micro and small enterprises, reflecting structural constraints rather than a lack of technological availability. While firm size increases the likelihood of higher digital maturity, it does not preclude smaller firms from progressing beyond basic digital use. The findings underscore the need for targeted, capability-driven interventions that support MSMEs in moving from isolated, survival-oriented digital adoption towards more integrated and strategic digital practices across business functions.

Data from the Business Digital Adoption Index (BDAI) Pilot

The Business Digital Adoption Index (BDAI), developed by MDEC, is a national baseline index that measures the level of digital adoption among businesses in Malaysia across three dimensions: **technology**, **digital investments**, and **enablers**. The technology dimension covers digital infrastructure and connectedness, digital processes and applications, digital experience, data,

digital innovation, and cybersecurity. Digital investments capture firms' digital investment strategies, while enablers assess people and talent, as well as governance structures.

The BDAI produces scores on a scale from 1 to 5, indicating the overall level of digital maturity across the business landscape or within specific segments such as firm size, sector, or region. Lower scores reflect nascent and fragmented adoption, typically confined to basic tools and isolated processes, while higher scores indicate more established, integrated, and strategically driven use of digital technologies supported by sustained investment and enabling conditions. Detailed scoring definitions are provided in

Appendix 2: Methodology, Table 4.

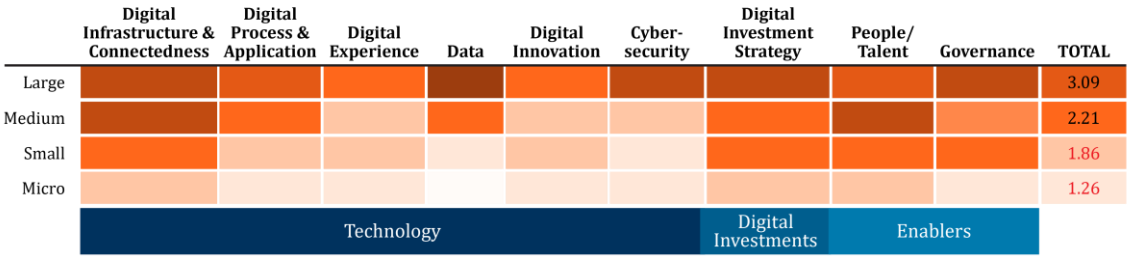
Although both the BDAI and the Digital Maturity Assessment (DMA) use five-level maturity frameworks, they serve distinct analytical purposes. The DMA is a firm-level diagnostic tool that captures how digital tools are adopted and integrated across **business functions** within individual enterprises. By contrast, the BDAI functions as a benchmarking index, offering an **aggregate view of digital adoption** across firms by combining technology use, investment behaviour, and enabling factors such as talent and governance.

The BDAI was piloted in Q4 2022 through a survey of 1,000 businesses across Malaysia. While the pilot findings are not nationally representative, they provide indicative insights into digital adoption patterns across firm sizes, particularly among micro and small enterprises.

Figure 9 shows a clear digital maturity gradient by firm size. Micro-enterprises record the lowest average BDAI score at **1.26**, followed by small enterprises at **1.86**, indicating that digital adoption among smaller firms remains concentrated at early stages. At these levels, digital use is typically limited to basic infrastructure and front-facing applications, with weak integration, limited data use, and minimal investment in talent or governance. Medium enterprises score higher at **2.21**, reflecting more consistent adoption and early movement towards structured digital use, though still short of widespread automation or advanced integration.

Large enterprises achieve the highest average score at **3.09**, suggesting more established digital practices supported by greater organisational capacity and investment. However, average scores across all firm sizes remain below the advanced levels defined by the BDAI framework, indicating that digital transformation challenges persist across the economy, albeit with differing intensity.

Figure 9: Heatmap of BDAI Pilot Findings



Source: MDEC (2023)

This next subsection explains some findings from the pilot regarding micro and small enterprises in technology, digital investments, and enablers.

Technology

Across the technology dimension, both micro and small enterprises remain concentrated at basic levels of digital adoption, with micro-enterprises lagging most significantly. Adoption is largely limited to foundational infrastructure and connectivity, typically involving one or two end-user devices. Only 28 percent of micro-enterprises report having a local area network, dedicated

servers are rare, and 92 percent are not using any form of cloud services. Small enterprises perform modestly better, particularly in maintaining websites, formal social media pages, and basic digital applications, but usage across both groups remains fragmented and weakly integrated. Data, cybersecurity, and enterprise-level applications continue to represent major gaps, limiting the ability of firms to move beyond basic digital presence towards more structured and data-driven operations.

Digital Investments

Digital investment patterns among micro and small enterprises are narrow and short-term in nature. Spending is primarily directed towards devices and connectivity rather than back-end systems, process automation, or analytics capabilities. Enterprise software such as ERP, CRM, or CMS remains uncommon, especially among micro firms, with lack of awareness and cost cited as the main barrier. Automation, where present, is typically confined to discrete functions such as invoicing or order processing. Overall, digital investments tend to be reactive and incremental, focused on immediate operational needs rather than longer-term capability-building or integration across business functions.

Enablers

Weak enabling conditions further constrain digital adoption. Both micro and small enterprises allocate only a small share of revenue, typically between 1 and 5 percent, to digital technologies and rely heavily on external support, including government incentives. Structured digital training is rare, particularly among micro-enterprises, and digital adoption is seldom guided by formal planning or governance structures. While scepticism towards emerging technologies such as AI (non-generative AI) and IoT remains high, most firms are not actively resistant to digitalisation, suggesting latent openness if barriers related to skills, confidence, and affordability can be addressed. Geographic factors also shape outcomes, as enterprises located in urban areas or embedded within platform ecosystems demonstrate higher levels of adoption than those in underserved regions.

Overall

Taken together, the BDAI pilot findings indicate that micro and small enterprises in Malaysia have achieved basic digital connectivity and visibility but remain constrained by fragmented adoption, limited integration, and weak investment in advanced capabilities. While small enterprises show early signs of progression beyond foundational digital use, sustained advancement along the digital maturity spectrum will require targeted, phased interventions that strengthen technological depth, align digital investments with business needs, and reinforce enabling conditions such as skills, governance, and access to support.

The BDAI pilot findings predate the widespread adoption of generative AI. As a result, the findings capture digital adoption patterns shaped by pre-gen-AI constraints and may not fully reflect recent shifts driven by accessible generative tools. Subsequent BDAI waves will be important in assessing whether generative AI changes adoption pathways for micro and small enterprises. The next section provides an overview of small businesses after the proliferation of generative AI using the CPA Australia Small Business Survey.

Additional Evidence on Micro and Small Businesses: CPA Australia's Small Business Survey

The CPA Australia Small Business Survey[29] offers a complementary perspective on digitalisation trends among micro and small enterprises in Malaysia. While definitions of "small business" vary across countries, the Malaysia sample (n=308) likely includes some micro-enterprises, and the findings should be read as indicative of broader trends affecting smaller firms. This survey was also the most recent data sample which gave us the opportunity to examine current trends across different countries.

The 2024–2025 results[30] point to a strong year for Malaysia's small businesses. About 71 percent reported growth in 2024, with optimism remaining high for 2025 as 82 percent expect further expansion and 81 percent anticipate improvements in the local economy. Compared to regional peers, Malaysia ranked among the most confident markets in Asia-Pacific, outperforming Singapore and trailing only Indonesia, the Philippines, and Vietnam.

Digitalisation featured prominently in these outcomes. Nearly three-quarters of businesses generated more than 10 percent of revenue from online sales in 2024, up from 62 percent in the previous year, while 78 percent reported that digital payments accounted for at least 10 percent of sales. Half of respondents indicated that recent technology investments improved profitability. AI adoption rose sharply, with 27 percent identifying it as their top technology investment, more than double the previous year. This data point indicates a rising need for AI as businesses seek to leverage AI tools in their business operations. Social media use was near universal, and around half of firms reported reviewing their cybersecurity protections within the past six months.

The survey also highlights strong momentum in employment and innovation. Around 35 percent of small businesses expanded their workforce in 2024, and more than half plan to hire in 2025. Malaysia ranked highest among surveyed countries in innovation intent, with 37 percent planning to introduce a new product, service, or process that is novel to the market or beyond. Respondents commonly attributed performance gains to improved business strategies, customer loyalty, and technology adoption.

However, structural constraints persist. While two-thirds of businesses sought external funding in 2024, fewer than four in ten found it easy to obtain. Rising input costs, particularly materials, rent, utilities, and taxes, were cited as the main pressures on business performance. The sample also skews young, with nearly 70 percent of respondents under 40 years old and most firms less than 11 years old, a profile associated with greater openness to digital tools and innovation.

Overall, the CPA Australia survey underscores the growing role of digital tools as drivers of revenue, resilience, and competitiveness among Malaysia's smaller firms. At the same time, ongoing challenges related to financing, cost pressures, and uneven access to support highlight the need for targeted interventions according to firm size to ensure that digital gains are sustained and inclusive as adoption accelerates.

---

[29] CPA Australia (2025b)
[30] CPA Australia (2025a)

5. Lessons Learned

5.1. Barriers on the digital path

Evidence from the DMA, BDAI, and CPA Australia survey converges on a consistent pattern of digitalisation among micro and small enterprises: while access to digital tools has expanded, progression beyond basic and fragmented use remains constrained by structural and behavioural barriers rather than technology availability alone. This was further corroborated by a roundtable held with MSME stakeholders (see Box Article 4).

A central lesson is that financial capacity and informality jointly shape digital outcomes. Limited margins and cautious lending conditions restrict firms' willingness to invest beyond front-facing tools, while informal practices, such as weak record-keeping or reliance on personal bank accounts, further limit access to financing and public support. These constraints reinforce a cycle of short-term, risk-averse digital adoption that prioritises immediate operational needs over longer-term capability-building.

Digitalisation is also hindered by reactive adoption pathways. Many micro and small enterprises adopt tools incrementally in response to immediate pressures rather than through structured planning. This results in a "computerisation trap", where customer-facing functions may be digitised while back-end processes remain manual and disconnected. Without integration across functions, digital tools generate limited productivity gains and do not translate into sustained improvements in efficiency or decision-making.

Enabling conditions matter as much as access to tools. Skills gaps, time constraints, and the absence of dedicated digital roles reduce firms' ability to experiment, integrate systems, or make effective use of data. Concerns over complexity and operational disruption further discourage deeper adoption, particularly among smaller firms with limited buffers to absorb failure.

External context compounds these challenges. Location and ecosystem effects influence exposure to digital solutions, as firms operating in urban areas or platform-based ecosystems benefit from stronger infrastructure, peer learning, and service availability. At the same time, reliance on digital platforms introduces new vulnerabilities, including exposure to changes in fees, algorithms, or account access, while uneven cybersecurity practices heighten operational risk.

These lessons suggest that digitalisation among micro and small enterprises is not constrained by awareness or willingness alone, but by the interaction of financing, capability, informality, and ecosystem conditions. While recent advances, including generative AI, may lower entry barriers for certain tasks and accelerate early-stage adoption, they do not eliminate underlying constraints related to financing, integration, governance, or sustained capability development. Addressing these barriers requires interventions that move beyond tool provision towards sustained capability-building, integration, and institutional support that enable firms to progress along the digital maturity spectrum.

It should also be noted that a further constraint shaping this analysis is the absence of timely, granular, and integrated data on micro and small enterprises. In the absence of a single, live dataset capturing digital behaviour at the micro and small firm level, this study necessarily draws on multiple surveys and administrative sources, each offering partial and time-bound insights.

While these datasets collectively reveal consistent patterns in access, adoption, and barriers, they differ in coverage, definitions, and update cycles, limiting the ability to track firm-level progression or real-time shifts in digital behaviour.

This fragmentation reflects a broader structural gap in the measurement of micro and small enterprise digitalisation, where informality, firm churn, and limited reporting capacity constrain data availability. As a result, current assessments of digital adoption rely on triangulation rather than continuous observation, reinforcing the need for improved data infrastructure to support more responsive, evidence-based interventions.

Box Article 4: Insights from the Roundtable

In May 2025, KRI and CPA Australia held a roundtable discussion in which key stakeholders within the MSME ecosystem were invited to give their personal assessments on the current state of MSME digitalisation, the key challenges facing MSMEs, and offer suggestions for government agencies to consider. These stakeholders included representatives from ministries, government agencies, academia as well as MSME associations and private companies representing the private sector.

As highlighted previously, financial constraints remain a significant factor that prevents digitalisation, particularly for smaller businesses. The discussants outlined that the difficulties for MSMEs to obtain funding is largely due to their lack of credit history, collateral requirements, and complex application processes. Furthermore, some participants also highlighted the balance that business owners have to contend with, the need to maintain a steady stream of revenue for daily operations, with the need to invest in equipment to improve productivity. For example, AI adoption remains at a nascent stage, as businesses may not realise the benefits that its adoption would entail with regard to automating tasks or gaining valuable insights into their customers.

In addition, many small businesses also lack adequate knowledge and are unaware of the abundant government programmes that are catered to them. These programmes are often overlapping and offered by multiple ministries and agencies. They lamented the lack of a centralised platform or a one-stop portal that would have all the necessary programmes applicable to them. Concerns were raised as to the actual effectiveness of the programmes that are offered, as measurable outcomes are kept internal within government agencies and are not often disclosed to the public.

Interestingly, some participants highlighted their relationship with the banking sector, whereby the bank officers themselves provided information on funding opportunities for MSMEs offered by institutions like BNM. Another participant offered a suggestion with the increased use of experts in a ‘contract-for-service’ arrangement where they could help with tasks such as securing loans, accounting, etc. The ‘contract-for-service' arrangement would encompass external firms being contracted to conduct specific tasks for the company based on their technical expertise in a subject such as digital technologies, accounting, or tax policy. These would be more feasible for small- or medium-sized businesses as compared to micro-businesses that may not have sufficient capital for the cost of hiring.

5.2. Recommendations

The findings point to a clear direction for Malaysia's micro and small enterprise digitalisation efforts. Firstly, there is a significant gap in latest data regarding micro and small enterprise digitalisation that must be addressed. Effective support must also reduce complexity, align with existing business behaviours, and be delivered through trusted and accessible channels. The following section translates these lessons into targeted policy and programme recommendations. While the recommendations apply to both micro and small enterprises, they should also account for differences in the specific firm's digital maturity, capacity, and readiness.

1. Build a **publicly accessible live tracker** of MSME data (e.g. industry, size, location, employees, level of digitalisation).

Currently, MSME statistics are primarily compiled by DOSM through the Malaysian Statistical Business Register (MSBR), censuses, surveys, and administrative data. While robust, this approach results in time lags between data collection and policy response. As seen in this paper, the analysis was subject to different sets of data from varying years which highlight the information gap that exists when examining MSMEs.

Therefore, a publicly accessible live tracker would enable timely, evidence-based interventions by providing near real-time insights into MSME activity. This transparent, readily available information can then be accessible for use by all relevant stakeholders to make informed decisions, whether they are from a government agency, an individual business or academia.

Core data could include the number of active MSMEs by industry, size, location, and employment, as well as level of digitalisation. This would support targeted programme design, continuous monitoring of MSME progress, and more systematic impact assessment of government interventions. The tracker could also be linked to public support programmes, allowing businesses to identify eligibility more easily and reducing fragmentation across ministries and agencies.

To enhance value, the platform could integrate selected datasets currently held across government systems, including business registration and licensing information, into a secure but user-friendly interface. Building on Malaysia's OpenDOSM initiative, such a tracker would improve transparency, reduce information asymmetry, and strengthen data-driven policymaking across the MSME ecosystem.

2. Address **digitalisation inequalities across locations** to ensure more equitable development between states.

A live data tracker would enable more precise identification of districts and localities with lower digital uptake or weaker MSME participation. State governments could then allocate resources more effectively through local implementing partners, including district-level offices and state digital economy agencies, which typically have stronger visibility of on-the-ground conditions.

Targeted, location-based interventions could include subsidised starter digital tools, localised training, simplified onboarding into e-commerce and logistics platforms, and targeted grants to strengthen area-specific industries. As Malaysia shifts towards a whole-of-government, place-aware approach, tailoring interventions to local economic structures and constraints will be

critical to ensuring that digitalisation contributes to both firm-level productivity and more balanced regional development.

3. Provide **tiered and tailored support** for micro and small entrepreneurs beyond financing grants, ensuring sustainability and growth opportunities.

While financing remains important, grants and loans alone are insufficient to support sustained digitalisation, particularly for micro-enterprises with limited documentation or confidence to invest in unfamiliar technologies. A support model tied to digital maturity level, progressing from basic digital readiness to operational integration and growth-stage adoption, would better align assistance with firms' maturity levels.

Non-financial interventions such as structured mentoring, peer-learning circles, and networking platforms can help build confidence and practical capability over time. Evidence from the BDAI and DOSM's Economic Census 2023 indicates that many micro-enterprises still lack basic digital infrastructure and rely on informal processes, constraining decision-making and growth potential.

Although micro-enterprises earning below RM500,000 annually are exempt from the initial phase of mandatory e-invoicing, voluntary adoption offers clear benefits, including improved financial visibility and easier access to microfinancing. Embedding e-invoicing within simple, mobile-first tools and commonly used platforms can lower barriers, while framing it as a business enabler rather than a compliance requirement may encourage uptake and support gradual formalisation.

A structure for periodic monitoring and evaluation is needed to ensure success in these support programmes. These businesses would need consistent support as they progress through the prescribed interventions, to create feedback loops between the agency responsible and the businesses involved.

4. Expand **community-based and peer-led learning models** through local trainers and ambassadors.

Community-based and peer-led approaches are effective in reaching micro and small enterprises because they leverage trusted local actors who understand business realities and constraints. Local trainers, ambassadors, and business champions can bridge the gap between policy intent and day-to-day practice by sharing relatable examples and guiding peers through real-world use cases.

To maximise impact, these models should be structured and replicable, supported by standardised modules, simple diagnostic tools, and feedback mechanisms that channel insights back to policymakers. Existing initiatives, such as SMECorp's SME Hub, provide a useful foundation. Expanding similar models through mobile hubs, state agencies, district-level trainers, or partnerships with local associations would improve access for rural and underserved businesses.

5. Strengthen **inter-agency coordination** to reduce duplication and simplify navigation for businesses.

Programme fragmentation remains a persistent challenge, with overlapping grants, training schemes, and advisory services offered across multiple ministries and agencies. This creates high search and compliance costs for micro and small enterprises, many of which lack the capacity to navigate complex support landscapes.

MECD, also known as KUSKOP, should lead the establishment of a unified, user-friendly one-stop portal that consolidates federal and state-level MSME initiatives thus simplifying access and improve programme uptake. Incorporating a basic profile-matching function could help businesses identify relevant programmes based on firm size, sector, location, and digital readiness. Achieving this will require stronger data-sharing arrangements and interoperable systems across agencies, underpinned by clear governance standards.

Improved coordination would not only reduce duplication but also enhance policy coherence, delivery efficiency, and the overall user experience for MSMEs.

6. Conclusion

Digitalisation holds significant promise for transforming Malaysia's micro and small enterprises into more resilient, competitive, and future-ready contributors to the economy. Over the past decade, concerted efforts by government, industry players, and ecosystem partners have laid important groundwork, including national strategies, digitalisation roadmaps, and targeted support programmes. Tools such as the Digital Maturity Assessment (DMA) and the Business Digital Adoption Index (BDAI) provide structured ways to assess progress and identify gaps, while recent surveys point to growing optimism and digital engagement, particularly among younger and more digitally active micro and small enterprises.

Despite this progress, substantial challenges persist. Micro and small enterprises, which make up the largest share of Malaysia's MSMEs, remain concentrated at the lowest levels of digital maturity, constrained by limited access to financing, capability gaps, informality, and fragmented support structures. Small enterprises are generally better positioned and increasingly able to capture tangible benefits from digitalisation, including higher online sales and productivity gains, but many still lack the integration, planning, and enabling conditions required for sustained digital transformation. As a result, digital adoption across both groups remains uneven and often shallow.

Looking ahead, Malaysia's MSME digitalisation strategy must continue to evolve beyond expanding access to digital tools alone. Priority should be placed on building long-term digital capabilities, simplifying and coordinating support mechanisms, and strengthening linkages between technology adoption, market access, and financing. An ecosystem that is more responsive to the realities of both micro and small enterprises will be critical to unlocking digitalisation as a driver of inclusive, resilient, and sustainable economic growth.

7. Appendices

Appendix 1: Profile of MSMEs in Malaysia

MSMEs in Malaysia represent the backbone of the national economy. There are currently over 1.08 million MSMEs in the country as of 2024, accounting for 96.1 percent of total businesses.[31] Collectively, these enterprises contribute to 39.5 percent of Malaysia's GDP, 48.7 percent of national employment and 14.3 percent of total exports as of 2024.[32] Given this scale, strengthening MSME digital adoption is not only important for firm performance, but also integral to national productivity and resilience.

Malaysia defines MSMEs by sector, using sales turnover and employment thresholds that differ between manufacturing and non-manufacturing activities (see Table 3).

Table 3: Definition of MSMEs, by manufacturing and non-manufacturing sectors

	Manufacturing Sector		Non-manufacturing Sector	
	No. of Employees	Sales Turnover (RM)	No. of Employees	Sales Turnover (RM)
Micro	<5	<300k	<5	<300k
Small	5<75	300k<15 mil	5<30	300k<3 mil
Medium	75<200	15 mil < 50 mil	30<75	3 mil < 20 mil

Source: SMECorp (n.d.)

Micro-enterprises constitute the largest segment, accounting for 70.1 percent of MSMEs in 2024 (Figure 10). Most are small, owner-run or family-run businesses, sometimes informal, and many operate from homes or shared premises. They often lack separate business banking and structured systems. These characteristics can place micro firms outside standard eligibility for financing and digitalisation grants that require formal documentation. At the same time, they make micro-enterprises particularly responsive to targeted, simple, and low-cost policy support.

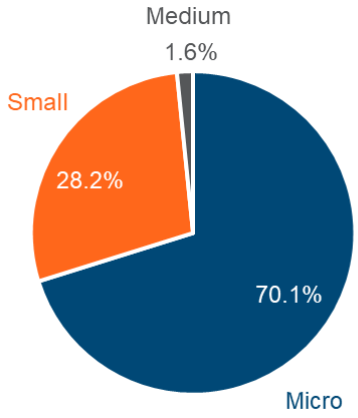
Wages are also lowest in this segment. Average monthly pay in micro-enterprises is RM1,541 compared with higher levels in larger firms (Figure 11). This suggests many workers in micro-enterprises earn near or below Malaysia's prevailing statutory minimum wage.[33]

In the data obtained from DOSM, we have identified the geographical distribution of businesses through employment according to firm size, all around Malaysia (refer to Appendix 3). The share of state employment in micro-enterprises is highest in Kelantan and Perlis at about 45 percent, and Terengganu at 41 percent. These are lower-income states with fewer large employers. Household businesses and micro-entrepreneurship therefore play a bigger role. In 2023, GDP per

[31] SMECorp (2025).
[32] DOSM (2024a)
[33] Readers should note that minimum wage rates are periodically revised, so comparisons should reference the applicate rate in the year of analysis. In 2022, the minimum wage was RM1,500. It has been revised to RM1,700 in August 2025. Source: BERNAMA (2025)

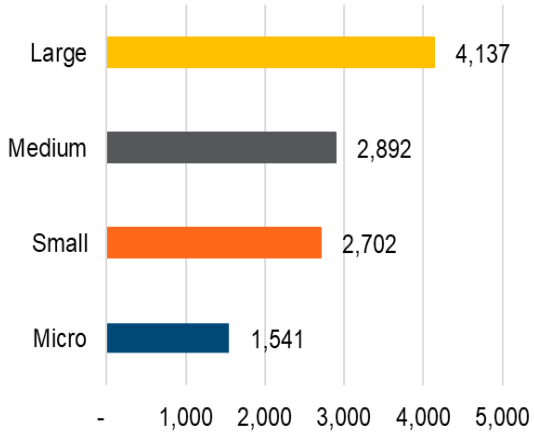
capita was RM16,836 in Kelantan and RM24,004 in Perlis, compared with RM64,492 in Selangor and RM72,586 in Penang. Regional plans such as the ECERDC Master Plan focus on community-level enterprise growth for this reason. By contrast, the employment share in large firms is highest in Penang (43 percent), WP Kuala Lumpur (39 percent), and Putrajaya (40 percent). These hubs host higher value-added activities and attract multinational investment.

Figure 10: Profile of MSMEs in Malaysia, by size (2024)



Source: SMECorp (2025)

Figure 11: Average monthly wages (in RM) for Malaysian workers, by firm size (2022)



Source: DOSM (2024a)

Appendix 2: Methodology

This paper utilised quantitative data from two organisations, namely MDEC and CPA Australia, collected independently through the NMD2030 study and BDAI Pilot (MDEC) as well as the APAC Small Business Survey (CPA Australia). Furthermore, we have also included qualitative data through input collected in the roundtable discussion held in May 2025. The survey methodology, approach and sample of each study is as follows.

1. NMD2030 Study (Digital Maturity Assessment Pilot)

The National MSME Digitalisation (NMD) 2030 Study, conducted between September 2023 and April 2024, uncovers key insights into the digitalisation landscape of Malaysia's MSMEs, providing a comprehensive understanding of their progress and challenges along the digital transformation journey. To support this study, six regional workshops were organised across Peninsular and East Malaysia, involving a total of 256 participants (Figure 12).

Figure 12: Total participants of NMD2030 Workshop (includes Digital Maturity Assessment pilot)

31	43	24*	51	52	55
Central Region Participants	Northern Region Participants	Eastern Region Participants	Southern Region Participants	East Malaysia (Sarawak)	East Malaysia (Sabah)
256 Total Participants					

Note: Participant numbers include both workshop and on-site survey participants.

The workshop agenda for MSME participants comprised a Digital Maturity Awareness session and three breakout sessions focusing on digitalisation challenges, priorities, and areas of assistance required. All participants completed a pilot version of the Digital Maturity Assessment (DMA) (Figure 13), which classified them into specific Maturity Levels based on their level of digital maturity (see

Table 2).

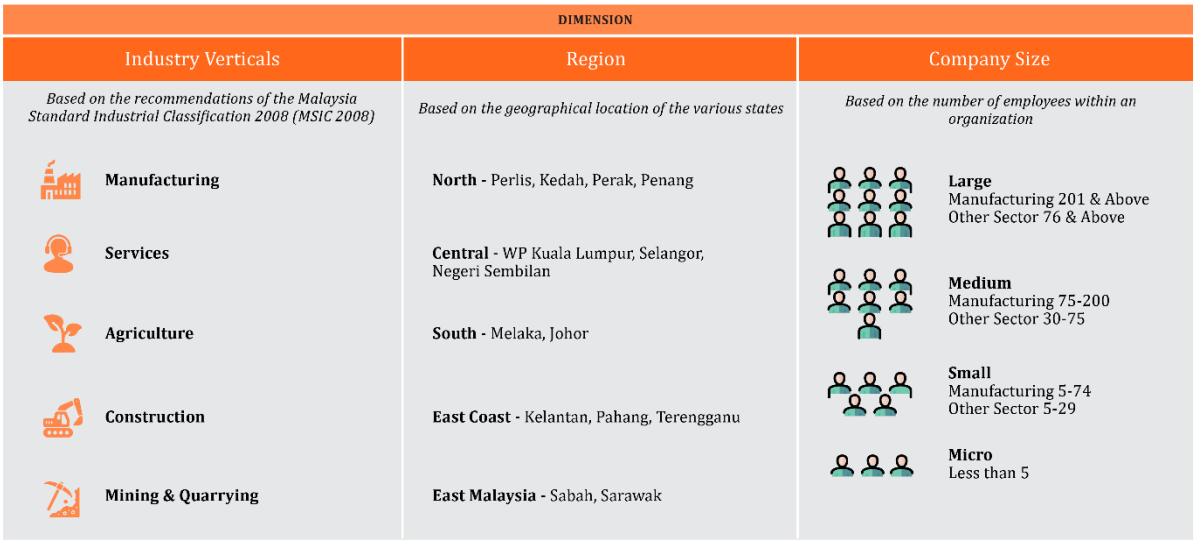
Figure 13: Contents of the DMA pilot

2. BDAI Pilot

The MDEC Business Digital Adoption Pilot Study was conducted in Q4 2022. It looks at the current landscape of digital adoption within businesses operating in Malaysia, specifically take up on digital technologies, it's investment and enablers. The survey polled 1,000 Malaysian businesses nationwide to get a better understanding of business digital adoption trends. The survey fieldwork execution is conducted via both online e-survey platforms and offline face-to-face or computer-assisted telephony interviews (CATI).

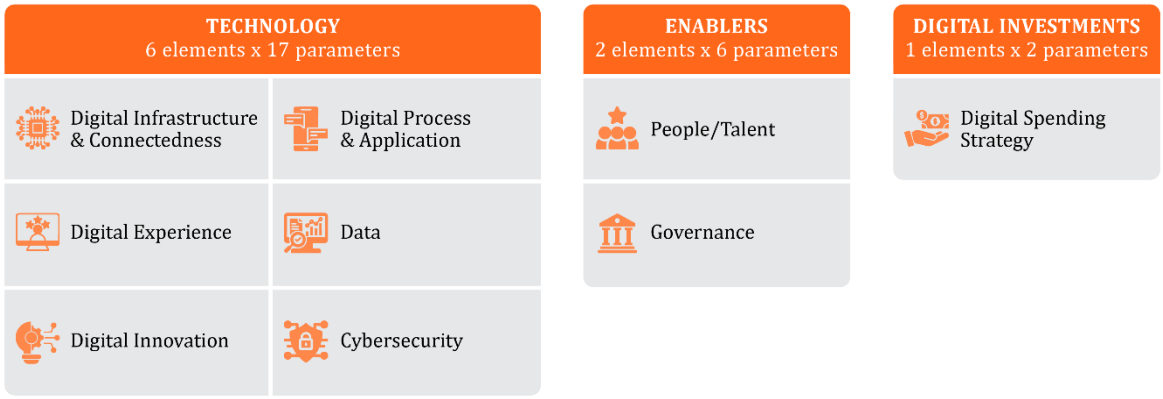
The survey was conducted across these dimensions: a) Industry Verticals, b) Region, and; c) Company Size (Figure 14).

Figure 14: Dimensions of the BDAI



Based on the approach undertook through the review of past and current digital initiatives in Malaysia, as well as the insights generated from case studies and benchmarking of other leading economies and nations, a framework for BDAI was developed. This framework consists of 25 parameters across 9 elements over 3 broad categories (Figure 15).

Figure 15: Elements and Parameters of the BDAI Framework



Inputs gathered from the pilot survey were analysed through a Level 3 heatmap analysis to visualise business digital adoption maturity across the categories, elements and parameters (Figure 16). The BDAI Scoring Definition can be found in Table 4.

Figure 16: Dimensions considered in the BDAI pilot

Level	Description				
	Overall Malaysia Index Score	Heatmap by			No. of Dimension
		Category	Element	Parameters	
L1	✓	✓			1
L2	✓	✓	✓		1
L3	✓	✓	✓	✓	1

Table 4: BDAI Scoring Definition

Score	Description
1: Initial	• Nascent stage of digital adoption. • Usage, scale and technology investments are for fundamental and basic IT and business processes. • May incorporate legacy technology and limited use of newer technology like the cloud. • Digital culture and talent competency are largely not present.
2: Progressing	• Expansion of the usage, scale and investments across more IT or business processes. • May involve web-based technology and digital platforms.

	• Progressive awareness towards digital culture and digital talent is situated within IT departments.
3: Established	• Digital adoption is developed and established. • Uses an expanded set of digital technologies and services to generate higher business value and improved operational efficiency • Digital investments focus on best-in-class technology and platforms with an expanded use of newer capabilities. • Digital culture and competent digital talent are developed and established within business units. • The usage and scale of usage of an expanded set of digital technology and services have generated higher business value and improved operational efficiency across business units and functions.
4: Advanced	• Advanced level of digital adoption. • Usage and scale of use go beyond established technology. • Investments are made into emerging technology such as AI, IoT, Blockchain, and embedded software. • Digital culture is at an advanced stage, and businesses often deploy organisation-wide programmes to embellish digital competence across key functions.
5: Leading	• Leaders in digital technology adoption with ICT at the core of their business. • Makes extensive use of digital capabilities across their infrastructure, business application, automation, data analytics, and business intelligence. • The scale of technology usage is extremely wide, and investment focuses on cutting-edge technology. • Digital culture and digital talent competency are key characteristics at all staff levels and functions.

3. APAC Small Business Survey

The APAC Small Business Survey is an annual survey conducted online among a random sample of small business owners or senior managers from organisations with fewer than 20 employees. It was conducted in November-December 2024. The findings of the overall survey come from over 4200 businesses in 11 markets across Australia, Mainland China, Hong Kong, India, Indonesia, Malaysia, New Zealand, the Philippines, Singapore, Taiwan and Viet Nam. In total, there were 501 respondents from Australia, 753 from Mainland China, 324 from Hong Kong, 505 from India, 302 from Australia, 308 from Malaysia, 303 from New Zealand, 303 from the Philippines, 302 from Singapore, 311 from Taiwan and 310 from Viet Nam.

Regarding the sample selection, every year, these surveys are sent out to a list of respondents who fit the criteria stipulated above. The panel partner involved will then ask a list of pre-survey questions to exclude those that are ineligible and will then be transferred to the questionnaire and its contents. From the commencement of the survey in 2009, CPA Australia has surveyed over 43,000 small businesses across the region, with the support of an external panel partner.

4. KRI-CPA Australia Roundtable Discussion (May 2025)

For the roundtable discussion, the insights obtained through the MDEC and CPA Australia studies, as well as preliminary analysis of the discussion paper were shared to each participant to ensure validity and to highlight any inconsistencies with the stakeholders' lived experiences. The discussion was conducted physically at the KRI office in May 2025, attended by (n=14) experts from representatives of government ministries/agencies, the private sector, associations and members of academia. These include: MITI, KUSKOP, SMECorp, MDEC, CPA Australia, Infosyte Sdn Bhd, PWC Malaysia, SME Association, Monash University, Universiti Kebangsaan Malaysia, and Curtin University. The main objectives of the discussion were namely:

a. Provide an assessment on the formation and the rationale behind government policies
b. As a knowledge sharing opportunity for discussants to share their experience on the digitalisation process and share how the programmes have impacted them

The discussion was then driven by a set of guiding questions to comment on the current landscape or state of MSME digitalisation as well as potential obstacles that hinder digitalisation efforts. The list of questions can be seen below:

Current landscape / state of digitalisation in Malaysia

1. The MSME Digital Grant MADANI provides up to 50% matching grant or up to RM5,000 for businesses to purchase digital services and systems. Which sectors are the recipients primarily in and what kind of technologies have they adopted (e.g. e-POS system, digital marketing, e-commerce) with the use of the grant?
2. Micro-entrepreneurs make up nearly 70% of MSMEs in Malaysia. What targeted strategies are being used to locate and support these micro businesses? What has the reception been for training and mentorship services offered by KUSKOP?
3. The current trend in MSME digitalisation is often limited to front-end business operations such as sales and marketing and customer service. What measures can we take to increase investments in the back-end of business processes?
4. In 2022, the World Bank conducted a SME Programme Efficiency Review and highlighted that a large number of SME support programmes had similar scope and intervention mechanisms, with differences being the target group. Are there any steps undertaken by the government to consolidate some of these programmes to avoid redundancies and increase monitoring efficiency?
    a. Does the SME Association or SMECorp know how many programmes are known to SMEs and how do they assess which programmes are of greater interest/relevance?
5. According to latest estimates, over 890,000 MSMEs have embraced e-commerce platforms as a means to sell their goods to a wider audience, with aspirations of having 1.1 million MSMEs utilising e-commerce platforms by the end of the year. What are the strategies being employed to increase e-commerce adoption, and what have been the limiting factors cited by MSMEs?

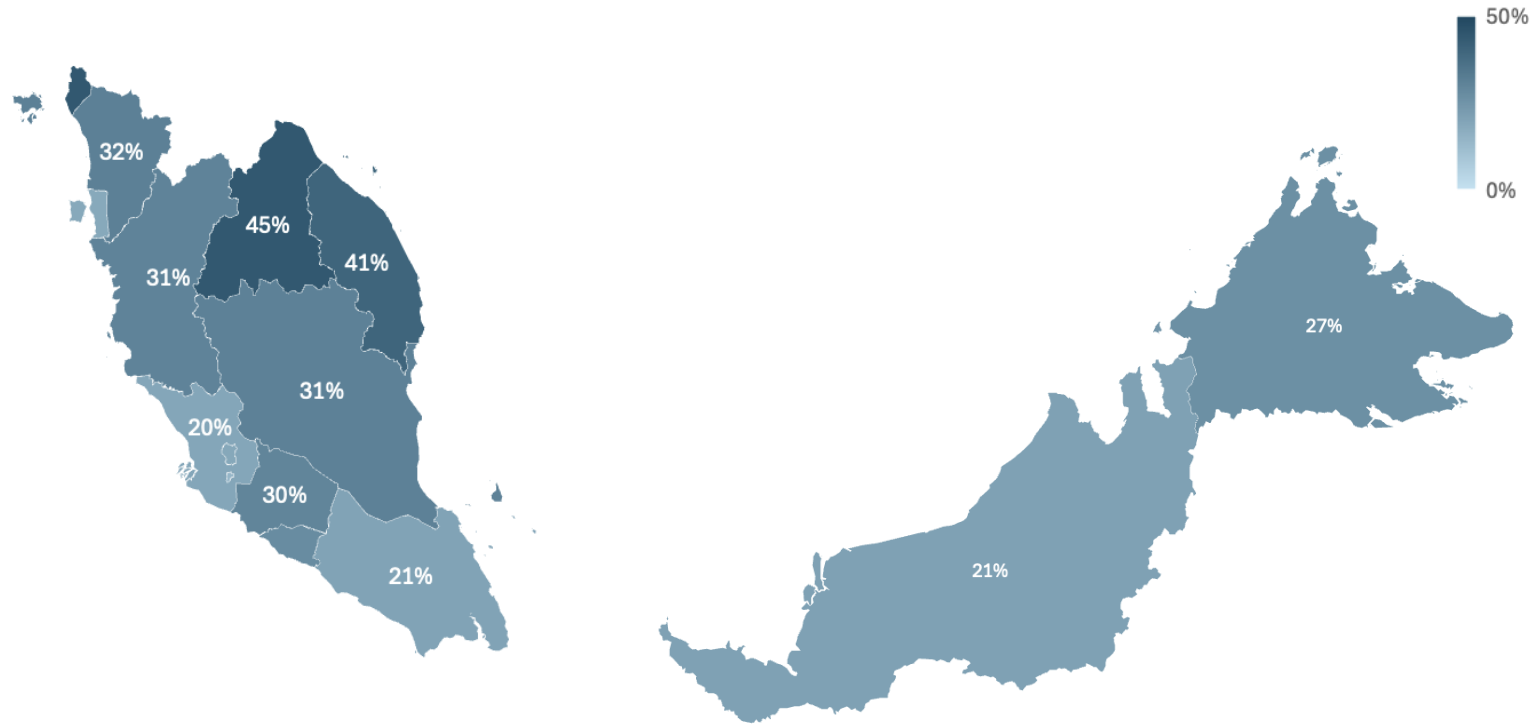
6. What mechanisms are there in place to evaluate businesses from end-to-end in order to identify which component of the business process can be optimised for higher productivity via digitalisation efforts?

Challenges to digitalisation

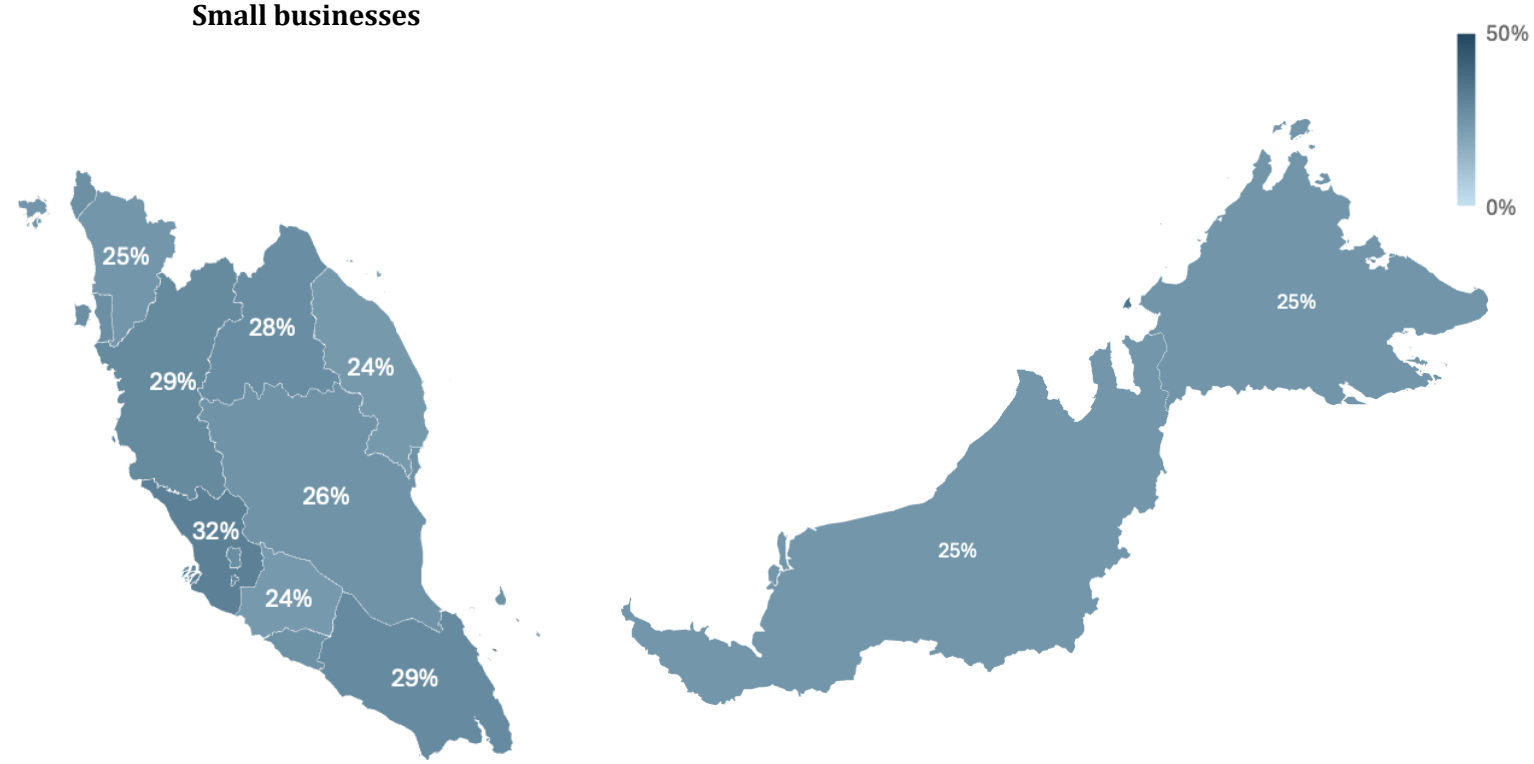
1. According to the Digital Minister, over 60% of MSMEs, or an equivalent to more than 650,000 MSMEs are still at the basic level of digitalisation. Are these sufficient for MSMEs? Are they limited by financial constraints?
2. Micro-entrepreneurs often find it difficult to seek additional sources of finance through traditional banks due to a lack of credibility or credit history. Could you share your experience in dealing with programmes such as BNM's Skim Pembiayaan Mikro and SMECorp's Micro Business Grant?
3. MSMEs often have a limited window of opportunity to stay competitive in the market in their first couple of years of establishment. How do MSMEs strike a balance between more tangible, short-term returns and long-term investments in digitalisation?
4. Program fragmentation has led to a lack of awareness of available programmes, as there is no one-stop centre that MSMEs can refer to. What strategies are being employed to address this, as it could lead to increased disparity between new, smaller businesses and more established firms?

Appendix 3: Percentage distribution of employees in Malaysia, according to firm size (2022)

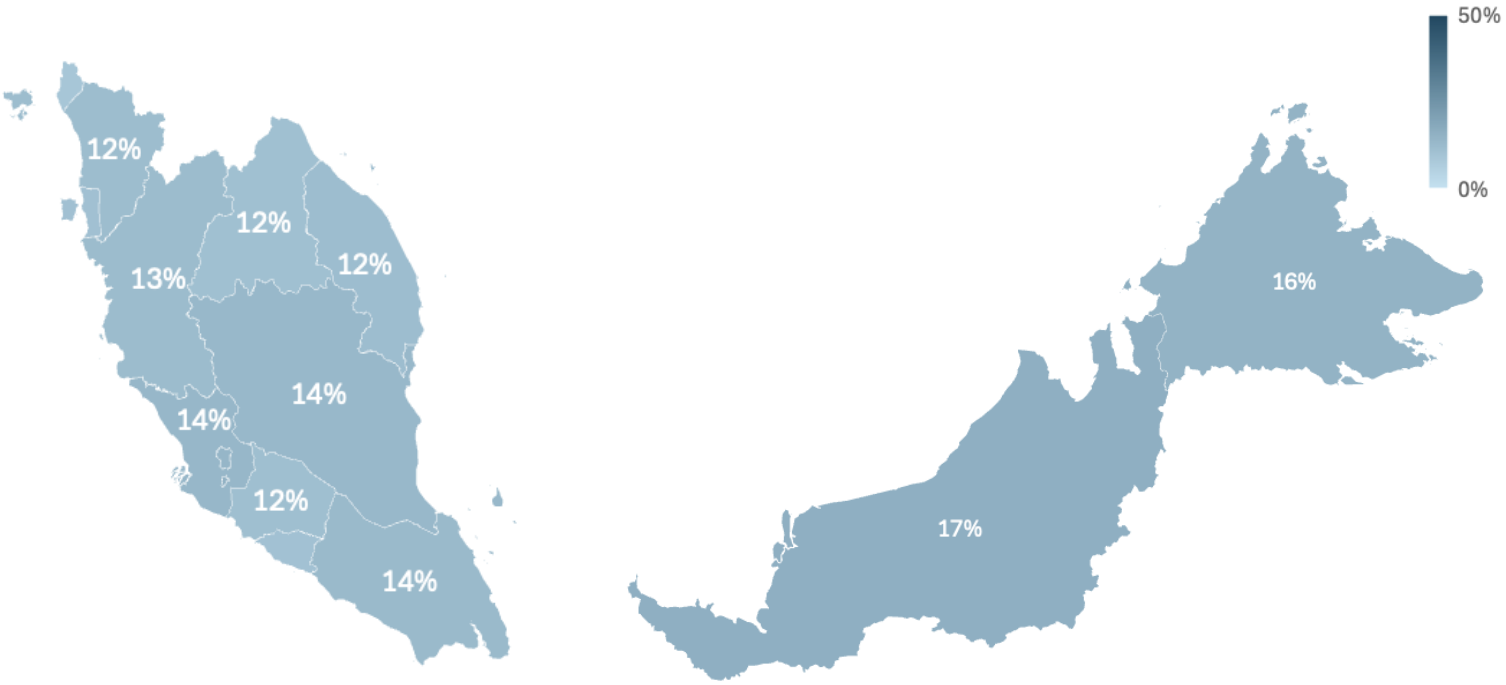
Micro-businesses



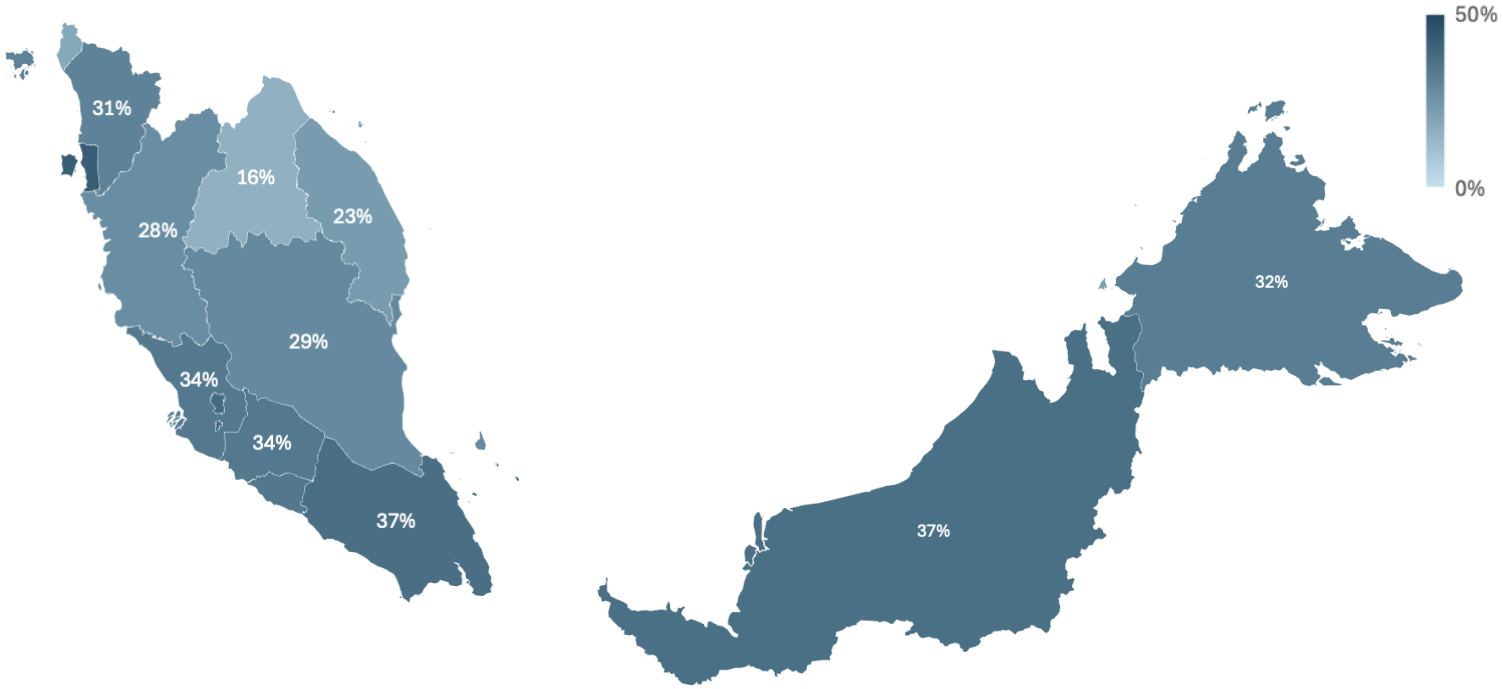
Small businesses



Medium businesses



Large businesses



Source: DOSM (2024a)

8. References

BERNAMA. 2025. 'RM1,700 Minimum Wage Order To Be Fully Enforced On Aug 1 – KESUMA'. News. *BERNAMA*, July 22. https://www.bernama.com/en/news.php?id=2447878.

BNM. 2023. 'Financial Inclusion Framework (2023–2026) Strategy Paper'. Bank Negara Malaysia.

CPA Australia. 2025a. 'CPA Australia Small Business Survey Dataset'.

CPA Australia. 2025b. 'CPA Australia's Asia-Pacific Small Business Survey'. Asia-Pacific Small Business Survey, CPA Australia, March 3. https://www.cpaaustralia.com.au/tools-and-resources/business-management/small-business-resources/small-business-survey.

DOSM. 2024a. *Economic Census 2023 Profile of Micro, Small and Medium Enterprises*. Department of Statistics Malaysia.

DOSM. 2024b. *Economic Census 2023 Usage of ICT and E-Commerce by Establishment*. Department of Statistics Malaysia.

EPU. 2017. 'National Productivity Blueprint'. Economic Planning Unit. https://irp.cdn-website.com/4e78759a/files/uploaded/MPB_Full_0.pdf.

EPU. 2021. 'National 4IR Policy'. Economic Planning Unit. https://ekonomi.gov.my/sites/default/files/2021-07/National-4IR-Policy.pdf.

Eurostat. n.d.-a. 'Glossary:Business Functions'. Accessed 27 August 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Business_functions.

Eurostat. n.d.-b. 'Glossary:Information and Communication Technology (ICT)'. Accessed 27 August 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Information_and_communication_technology_(ICT).

Eurostat. n.d.-c. 'Glossary:Internet of Things (IoT)'. Accessed 27 August 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Internet_of_Things_(IoT).

IRBM. 2025. 'IMPLEMENTATION OF E-INVOICE IN MALAYSIA FREQUENTLY ASKED QUESTIONS (FAQs)'. IRBM. https://www.hasil.gov.my/media/0xqitc2t/lhdnm-e-invoice-general-faqs.pdf.

Khaw, Claudia. 2025. '5 Years, 2 Products, and RM42 Million: Khairulaming Achieved 110% Increase in Sales Last Yr'. *Vulcan Post*, March 20. https://vulcanpost.com/883667/khairul-aming-malaysia-sambal-dendeng-nyet-sales-2024/.

MDEC. 2021a. 'National E-Commerce Strategic Roadmap 2021-2025'. MDEC. https://mdec.my/static/nesr/e-book.html.

MDEC. 2021b. *SME Digital Quick Guide Retail*. MDEC. https://mdec.my/static/pdf/100-godigital/SME-Digital-Quick-Guide_Retail.pdf.

MDEC. 2023. *National Business Digital Adoption Index 2022*. MDEC. https://platform.mdec.com.my/cmscdn/v1.aspx?GUID=cf39ff90-6bd1-4884-9ac1-ca55c021c4f0&file=BDAI%20Booklet.pdf.

MDEC. 2024. 'Digital Maturity Assessment Dataset'.

MDEC. 2025. 'Business Digital Maturity Level & Assessment Guide'. MDEC. https://mdec.my/bdi/business-digital-maturity.

MECD. 2020. *National Entrepreneurship Policy 2030*. Ministry of Entrepreneur Development and Cooperatives. https://www.kuskop.gov.my/admin/files/med/image/portal/NEP2030-Final.pdf.

Ministry of Digital. 2024. *DIGITAL FRONTIER: A Year of Transformation*. Ministry of Digital. https://www.digital.gov.my/api/file/file/Kementerian%20Digital_Annual%20Report_ENG_FINAL-3.pdf.

Ministry of Economy. 2021. 'Malaysia Digital Economy Blueprint'. Ministry of Economy. https://ekonomi.gov.my/sites/default/files/2021-02/malaysia-digital-economy-blueprint.pdf.

Ministry of Economy. 2025. 'Rancangan Malaysia Ketiga Belas (RMK13) – Melakar Semula Pembangunan'. Ministry of Economy. https://rmk13.ekonomi.gov.my/.

Misrani, Sairul Zamri, and Muhamad Adham Shadan. 2020. 'Tiga perkara yang ditekankan Khairulaming sebelum bikin video masakan'. *Kosmo Digital*, October 19. https://www.kosmo.com.my/2020/10/19/tiga-perkara-yang-ditekankan-khairulaming-sebelum-bikin-video-masakan/.

MITI. 2018. 'Industry4WRD'. https://www.miti.gov.my/index.php/pages/view/4832.

MITI. 2021. 'National Trade Blueprint 2021-2025'. Ministry of Investment, Trade and Industry. https://www.matrade.gov.my/documents/ebook/ntbp/2/.

MITI. 2023. 'National Industrial Master Plan NIMP2030'. Ministry of Investment, Trade and Industry. https://www.nimp2030.gov.my/.

MOSTI. 2022. 'NATIONAL SCIENCE, TECHNOLOGY AND INNOVATION POLICY 2021-2030'. Ministry of Science, Technology and Innovation. https://www.mosti.gov.my/wp-content/uploads/2022/03/National-Science-Technology-and-Innovation-Policy-2021-2030.pdf.

MyDigital ID. n.d. 'MyDigital ID'. Accessed 27 August 2025. https://www.digital-id.my/.

OECD. 2021. *The Digital Transformation of SMEs*. OECD Studies on SMEs and Entrepreneurship. OECD Publishing. https://doi.org/10.1787/bdb9256a-en.

OECD. 2024a. *OECD Digital Economy Outlook 2024 (Volume 2): Strengthening Connectivity, Innovation and Trust*. OECD Digital Economy Outlook. OECD Publishing. https://doi.org/10.1787/3adf705b-en.

OECD. 2024b. *SME Digitalisation to Manage Shocks and Transitions: 2024 OECD D4SME Survey*. OECD SME and Entrepreneurship Papers No. 62. Vol. 62. OECD SME and Entrepreneurship Papers. https://doi.org/10.1787/eb4ec9ac-en.

OECD. n.d. 'AI Principles Overview'. Accessed 27 August 2025. https://oecd.ai/en/principles.

Sabrina, Sarah. 2023. '7 Things That Prove Why Khairul Aming Deserves His Success as an Influencer & Entrepreneur'. *Vulcan Post*, May 30. https://vulcanpost.com/828439/khairul-aming-popular-food-influencer-entrepreneur-malaysia-reasons/.

SMECorp. 2025. 'Profile of MSMEs in 2015-2024'. https://www.smecorp.gov.my/index.php/en/policies/2020-02-11-08-01-24/profile-and-importance-to-the-economy.

SMECorp. n.d. 'SME Corporation Malaysia - SME Definition'. Accessed 27 August 2025. https://smecorp.gov.my/index.php/en/policies/2020-02-11-08-01-24/sme-definition.

World Bank. 2022. *Malaysian SME Program Efficiency Review*. World Bank. https://documents1.worldbank.org/curated/en/099255003152238688/pdf/P17014606709a70f50856d0799328fb7040.pdf.