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Not Leaving MSMEs Behind In The AI Race

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Introduction

This article is the second in KRI's AI Risk Series examining risks associated with artificial intelligence (AI). The first article[1] established the definition of AI used throughout this series, and busted myths about AI as a panacea and of its value-neutrality.

In this article, I consider the risk of uneven adoption of AI by firms, where smaller firms may adopt AI at lower rates or on smaller scales than larger firms. This risk is especially relevant in Malaysia where micro, small and medium-sized enterprises (MSMEs)[2] make up the majority of Malaysia's firms landscape.

Let us accept the premise that AI's benefits to the economy, such as productivity gains, are greater than the costs, such as its computational carbon footprint. If Malaysian MSMEs are unable to find appropriate use cases and resources to support AI adoption, there are two possible consequences for Malaysia's economy.

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[1] Tan (2024)

[2] MSMEs are classified according to their total annual turnover and number of employees (SME Corp Malaysia, 2024b).

First, there could be an enterprise-level digital divide between MSMEs that struggle to adopt AI and large national or multinational corporations that are able to benefit from AI adoption. Second, there could be a decline in Malaysia's global economic competitiveness if the majority of the firms in the country are not able to adopt AI[3].

Digital transformation of MSMEs continues to lag behind large enterprises

In 2023, MSMEs made up 97%[4] of Malaysia's commercial landscape. Research[5] suggests that small firms continue to lag behind large firms in terms of digital adoption, especially on the back-end. Small firms are more likely to experiment with customer-facing digital functions such as e-commerce and digital marketing, but less likely to digitalise their inventory or accounting systems.

Nonetheless, research[6] has also found that even front-end digitalisation has benefits for small firms. Micro-enterprises engaging in e-commerce and other forms of digital transformation of business practices and operations such as digital advertising have experienced gains due to technology adoption. Digital technologies enable the collection of data that MSMEs can analyse for better business insights, enabling them to refine strategies, expand market reach and increase competitiveness[7].

Previous research[8] has suggested that the digital divide between smaller and larger firms is due to smaller firms lacking resources, specifically funding for technology adoption and technological skills. MSMEs operating with narrow margins may be less motivated to direct their limited resources to technical training or upfront investments in digital technologies, especially since introducing new digital technologies and working processes may disrupt regular business operations. These challenges are likely to remain when considering AI adoption.

MSMEs face new challenges in adopting AI

Beyond limited funds and skills that constrain broader digital transformation, MSMEs could potentially face three more challenges in adopting AI. These are: a lack of relevant and scalable use cases, data-related limitations and difficulties complying with global AI standards and regulations when exporting.

[3] Alonso et al. (2020)
[4] SME Corp Malaysia (2024a)
[5] World Bank Group (2022); Holl and Rama (2023)
[6] Pfister and Lehmann (2021); Mohamad Yusman Ammeran et al. (2023)
[7] Mohamad Yusman Ammeran et al. (2023)
[8] Tong and Gong (2020)

Lack of relevant and scalable use cases

In 2023, over 80% of MSMEs in Malaysia were in the service sector[9]. The term "services" encompasses many different industries, such as wholesale and retail trade, food and beverage, transportation and storage, financial services and insurance, education, and human health and social work. MSMEs in the service sector made up 50.6% of the country's workforce and contributed 42.7% of its GDP[10]. At the time of writing, there is no publicly available repository or other data source systematically documenting AI adoption in the services sector in Malaysia but anecdotal evidence suggests that AI adoption is still very low.

The Deloitte AI Institute has compiled a list of over 60 use cases for generative AI in six major industries, including consumer services, financial services, government and public services, life sciences and healthcare and technology, media and telecommunications (the remaining industry being energy, resources and industrial). While this sounds promising, a review of its AI Dossier[11] suggests that these use cases are mainly theoretical rather than drawn from sustained deployment in the global market.

Furthermore, the use cases seem better suited to large corporations than to smaller firms. For example, Deloitte's use cases for AI in the life sciences and healthcare sector, such as integrated data flow for clinical trials, sensor use in drug manufacturing and predictive AI in hospital management are more likely to be adopted by large enterprises with adequate resources and investments in AI than by MSMEs.

Data-related limitations

AI works best when it is able to draw on large amounts of data. AI models first need to be trained to find relevant patterns in large amounts of data. The richer the training data, the higher the quality of the output[12].

MSMEs in Malaysia face two data-related limitations. First, Malaysian firms that do adopt and deploy AI are likely to be using models developed elsewhere in the world. These models would have been trained on data drawn from a different culture and context. It should not be taken for granted that these models will produce accurate and relevant outputs when applied in a Malaysian context. For example, many large language models (LLMs) are primarily trained using the English language and may not be able to analyse casual speech patterns in Bahasa Melayu well enough to generate natural-sounding sentences.

Second, even if local training datasets are available, they are likely to be in the hands of larger corporations, for example e-commerce platforms, than of smaller firms such as the individual vendors listed on e-commerce platforms. As such, larger firms will be better placed to train, adopt and deploy AI, leaving MSMEs struggling to compete in terms of data.

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[9] SME Corp Malaysia (2024a)
[10] DOSM (2024)
[11] Deloitte (2024)
[12] Roh et al. (2021)

In general, improvements to data collection, storage and management processes would enable MSMEs to maximise the benefits of digital transformation. For example, implementing a machine-readable database to track billing enables more comprehensive data analysis than scanning PDFs of paper bills, which serves mainly as a digital record. Admittedly, these improvements will cost more than basic digitisation, and rising costs are a constant challenge for MSMEs.

Difficulties complying with global standards and regulations when exporting

Governments around the world are developing standards and regulations to govern AI systems, training data and AI outputs. Different regions in the world have varying policies and requirements for AI products and services within their jurisdictions. For example, the European Union's (EU) AI Act[13] governs not just deployers of AI systems within the EU, but also AI outputs that enter the EU market.

The AI Act has specific definitions of high-risk [14] AI systems, including those that perform customer profiling within industries such as employment and talent recruitment. Businesses that use high-risk AI systems have to comply with obligations under the Act if they want to operate in the EU market. They may request an exemption to classify their AI system as non-high risk, but that entails another registration and documentation process.

Given their limited resources, MSMEs that export AI-related goods and services may find it a challenge to maintain compliance with evolving global standards and regulations. This may hinder their ability to expand their markets and be globally competitive.

During KRI's AI Impact and Governance workshop held earlier this year, industry stakeholders highlighted the need for government support to support local MSMEs, especially AI startups, in their efforts to comply with global standards and regulations. These startups may find compliance especially challenging as they may deploy AI developed in one part of the world, and thus subject to AI regulations there, in another part of the world, where the AI regulations may be different.

AI policies and strategies should not neglect MSMEs

If Malaysia is to realise its aim of becoming the AI hub of Southeast Asia, then steps need to be taken to ensure that the MSMEs are not left behind in the AI race. It is important that any AI policies and strategies, including the recently released AI Governance and Ethics guidelines[15], include practical considerations for MSMEs.

As a start, it would benefit MSMEs to scale up their baseline digital adoption, such as digitalising back-end databases and digitally integrating business operations systems and workflows. This will enable them to expand their data analysis to gain greater insights into their business and prepare them better for further technological adoption, including AI.

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[13] European Parliament and Council of the European Union (2024)
[14] European Parliament and Council of the European Union (2024), art. 6 and annex III
[15] MOSTI (2024)

As the central national agency charged with implementing Malaysia's AI strategy, the National AI Office (NAIO) could consider establishing an AI readiness checklist for MSMEs. For MSMEs engaging or considering engaging in international trade, such a checklist could include compliance with global AI and data regulations and standards to promote global competitiveness.

The NAIO could also establish systematic data collection to track AI adoption. This could take the form of an AI repository documenting what sort of AI models are being adopted and/or deployed by firms in Malaysia as well as a directory of firms whose primary products or services are AI-centric. This would facilitate better categorisation and governance of AI models used in Malaysia, and improve assessments of Malaysia's AI ecosystem needs and the contribution of AI to Malaysia's economy.

The NAIO might also consider facilitating networks of sectoral MSMEs across ASEAN to pool and share resources, from hardware to training, to support AI adoption[16]. This could help establish Southeast Asia as an economic bloc and voice for global AI governance while improving regional MSMEs' ability to benefit from AI.

[16] AI Advisory Body (UN) (2024)

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