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Key Trends Driving Adoption of Generative Artificial Intelligence in Malaysian Banking Sectors

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Abstract

The financial sectors in Malaysia are being influenced by worldwide occurrences, like regulatory changes, financial reforms, technological disruptions and advancements, demographics, sociopsychological factors, healthcare developments, global trade dynamics, and geopolitical events. Consequently, banks are making substantial investments and ramping up funding, particularly in the field of Artificial Intelligence (AI), to mitigate the risk of disruptions. With the pandemic experiences, AI has been broken down for better management into Machine Learning (ML), Deep Learning (DL) and Generative AI. Tools and companies are proliferating at an astonishing rate evolving in the Banking ecosystem since 2021. In this research, the key trends currently driving adoption of Generative AI in the Malaysian Banking Sectors are investigated using a convenience survey method from 5 banks in Malaysia. The results show a variety of workforce transformations that will be critical to creating an agile and fit-for-future financial personnel.

Keywords

Technology, Generative Artificial Intelligence, Artificial Intelligence, Banking, Financial Sector, Malaysia

1. Introduction

Following the conclusion of the pandemic, global upheaval has been significant due to increased interconnectivity. This has given rise to various developments, including regulatory changes and financial reforms, technological disruptions, and advancements, shifts in demographics, sociopsychological and healthcare considerations, alterations in global trade, and geopolitical events. These events

have impacted the Malaysian Banking Sectors in all possible ways, which currently present key trends that require the Banks to determine how they impact their area to avoid risk disruption.

Within the realm of financial services, the increased utilization of AI/ML methodologies presents fresh opportunities to elevate customer experience and expand product offerings. This is particularly evident in the realm of large-scale product personalization, as well as the provision of faster and more convenient services. AI/ML also helps unlock insights that enable the Banking sectors to make better decisions, while also automating processes. In turn, these have the potential to help the Banking sectors better manage risks, improve operational efficiency and productivity, and reduce cost (BNM Financial Stability Review—Second Half, 2022).

The predicament faced by the Malaysian Banking Industry after the pandemic is to balance out the future investments towards the innovation of Generative AI through the AI/ML methodologies against stabilizing economic growth of their institutions, especially on the staff welfare. In theory, the more usage of Generative AI, the lower dependence on personnel required in the workplace. As Malaysia's digital economy undergoes continuous growth, we anticipate a hastening of digital transformation within the financial sector. This underscores the necessity for individuals capable of acquiring, applying, and implementing emerging business models and new technologies. It also calls for a workforce that is collectively more adept in digital skills, possessing the capacity to innovate and seamlessly integrate business concepts with technology and data.

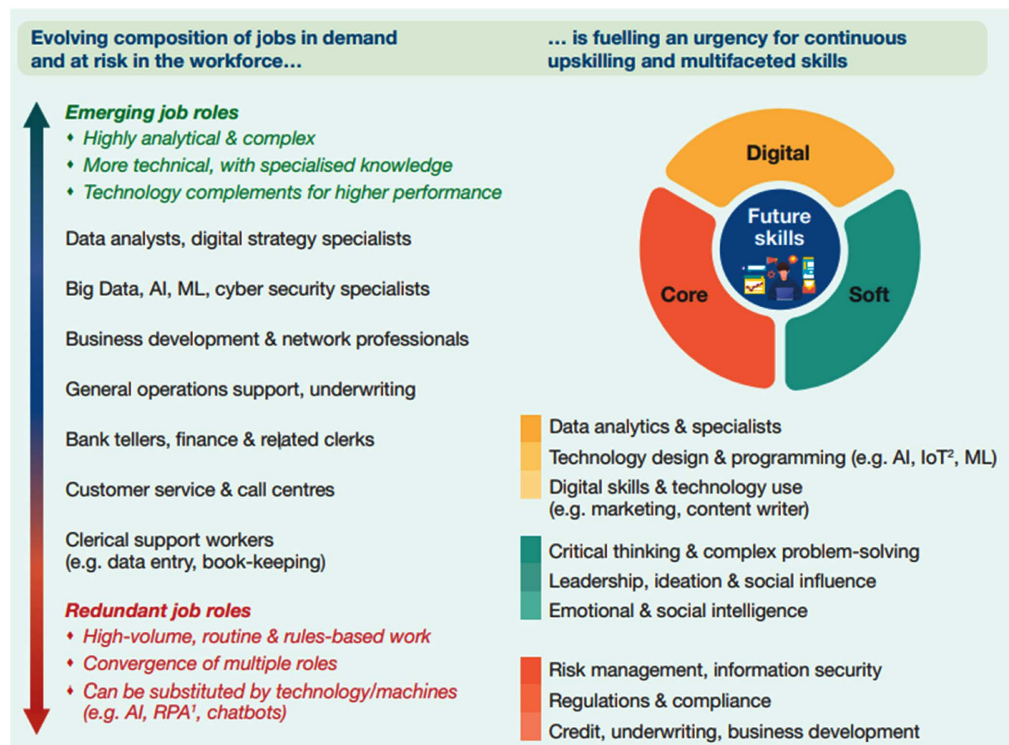## 2. Movements Impacting Financial Sectors

BNM stated in their *BNM Box Article: Futureproofing the Financial Sector Workforce* (2022) that with the ongoing evolution of the financial sector, there will be a concurrent transformation in jobs and skill requirements. The upcoming phase of Malaysia's financial development necessitates a workforce that is adaptable, agile, and possesses the skillsets of the future to effectively carry out their responsibilities.

From the events mentioned in **Figure 1**, movements impacting the Malaysian Banking Sectors are deliberated and listed below.

2.1. Customer Centricity

Customer centricity is defined as a business framework that fosters a positive customer experience at every stage of the customer journey (Open Library, 2021). The goal of a customer-centric business is to build customer loyalty and advocacy where it integrates all the customer needs, preferences and experiences into the financial services delivery and products. In the recent EY research on transformation within banks identified multiple reasons for failure, and one of them is a lack of commitment to customer centricity but, here is the difficulty: most banks think their transformation initiatives are customer-centric (EY, 2023).

According to Wang et al. (2024), their research summarizes that CX is a hot

Figure 1. Anticipated evolution of jobs and skills of the financial sector workforce (Source: *BNM Box Article: Futureproofing the Financial Sector Workforce*, 2022).

topic in business; business leaders believe that CX is the core of enterprise competitiveness and a critical determinant of business success (Sidaoui et al., 2020) due to its close relevance to customer engagement (Rahman et al., 2023), customer behavior (Chang & Li, 2022), word of mouth (Oliveira et al., 2023), revisit intention (Gibson et al., 2022), customer satisfaction (Chen et al., 2021), customer loyalty (Tuguinay et al., 2022; Manyanga et al., 2022).

2.2. Digital Transformation

Digital transformation is characterized by the adoption of innovative technologies to maintain competitiveness in the Internet era, where the delivery of services and products occurs through both online and offline channels (Leal Filho et al., 2024). The integration of digital technology into all areas of a business leverages technology to transform and enhance financial services, operations, and customer experience, fundamentally changing the financial operationalization and delivering value to customers. It is also considered as a cultural change that requires financial sectors to continually challenge the status quo, experiment, and get comfortable with failure. **Figure 2** shows the challenges of digitalizing Malaysian Banking Sectors.

The Malaysian central bank, BNM has issued digital banking licenses to five consortiums after receiving 29 applications, as the country seeks to embrace online financial services amid an e-commerce boom. Three out of five consortiums are majority-owned by Malaysians: first, mobile carrier Axiata's fintech unit Boost
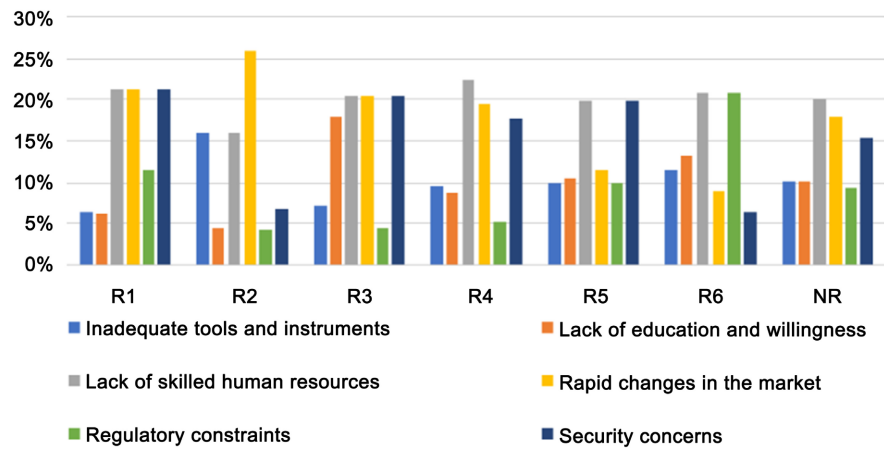
Figure 2. The challenges of digitalizing Malaysian Banking Sectors (Source: Mohsin et al., 2022).

Holdings; second, Kuok Brothers which partners with ride hailing and food delivery giant Grab Holdings, and third, a group led by Shopee owner Sea Group and a unit of YTL Corp., a Malaysian conglomerate. Groups led by KAF Investment Bank and AEON Financial Service were also granted the permits (BNM, 2022).

2.3. Generative AI

Generative artificial intelligence (generative AI, GAI, or GenAI) is artificial intelligence capable of generating text, images, synthetic data, or other media, using generative models (Griffith & Metz, 2023). Integration of deep learning applications to generate new and original contents leveraging patterns observed in existing data. In other words, Generative AI models learn the patterns and structure of their input "training" data and then generate new data that has similar characteristics. Generative AI can be a great human-aid in relevancy identification, especially on process level and, also give indications and consideration ideas for the relevance judgment of the more detailed aspects of a process (Sai et al., 2024).

2.4. Cyber Security

Cyber security in banking is needed to protect customers from money loss and data breaches. By providing clients with a safe financial environment, banking organizations can maintain a good reputation and improve customer experience. The application of technologies, processes, and controls to protect systems, networks, programs, devices, and data from cyber-attacks. It aims to reduce the risk of cyber-attacks and protect against the unauthorized exploitation of systems, networks, and technologies. The goal is to provide a totally secure mobile based internet banking environment which is continuing to be a moving target exacerbated by the free and readily available flow of information on the Internet at the disposal of would-be attackers (Panja et al., 2013). Some of the most com-

mon types of cybersecurity threats in 2023 include phishing, ransomware, insider attacks, among others (Möller, 2023; Mijwil et al., 2023).

2.5. Sustainable Finance

Sustainable finance refers to any form of financial process which supports economic growth and incorporates Environmental, Social and Governance (ESG) considerations to drive sustainable development outcomes (Malaysian Sustainable Finance Initiative, 2023) and it incorporates ESG factors into financial decision and business activities, with an aim of supporting sustainable economic growth and development. In this article we focus on Generative AI because the uptrends on venture capital investment are up by 425% as of late 2022 and continuing to surge (PitchBook, 2022, Forbes). The three types of sustainable financial products that are more widely seen in Malaysia are green Sukuk or bonds, social bonds, and sustainability bonds shown in Table 1. As of June 2020, a total of 12 green Sukuks, two social bonds and three sustainable bonds were issued in Malaysia.

3. Upward Growth of Generative AI

It all started with ChatGPT which has pushed the market onto new adoption. In January 2023, ChatGPT users reached 100 million users which is the fastest user growth of any application in history. According to the Gartner's (2023) report visualized in Figure 3, generative AI topped the hype cycle. Research and awareness of generative AI skyrocketed after the launch of ChatGPT in November. As a result, many valuable and transformative breakthroughs for generative AI applications have been made, earning the technology its number-one spot.

Looking into Generative AI Tools and companies' education level, they are proliferating also at an astonishing rate where they use AI to create intelligent machines capable of tasks requiring human intelligence then using ML—as subfield of AI to imitate human behavior. Next, they go deeper into DL which is a subset of ML leveraging a neural network and the end game changer is Generative AI which they create new content based on the data it has been trained on from multiple sources. According to a report by Accenture, 70% of the Malaysian financial services executives believe that AI and virtual assistants are the future of customer service in the industry, enhancing the overall customer experience (Juristech, 2023). Figure 4 shows some of the evolving ecosystem from 2022 to 2023 which focuses on 5 categories of tooling.

Table 1. Sustainable financial products widely seen in Malaysia.

Bonds/Sukuks	Amount (in US$ million)	No. of deals
Green bonds/Sukuks	1181	12
Social bonds	51	2
Sustainability bonds	858	3
Total	**2090**	**17**

Source: Malaysian Sustainable Finance Initiative (2023).

Hype Cycle for Emerging Technologies, 2023
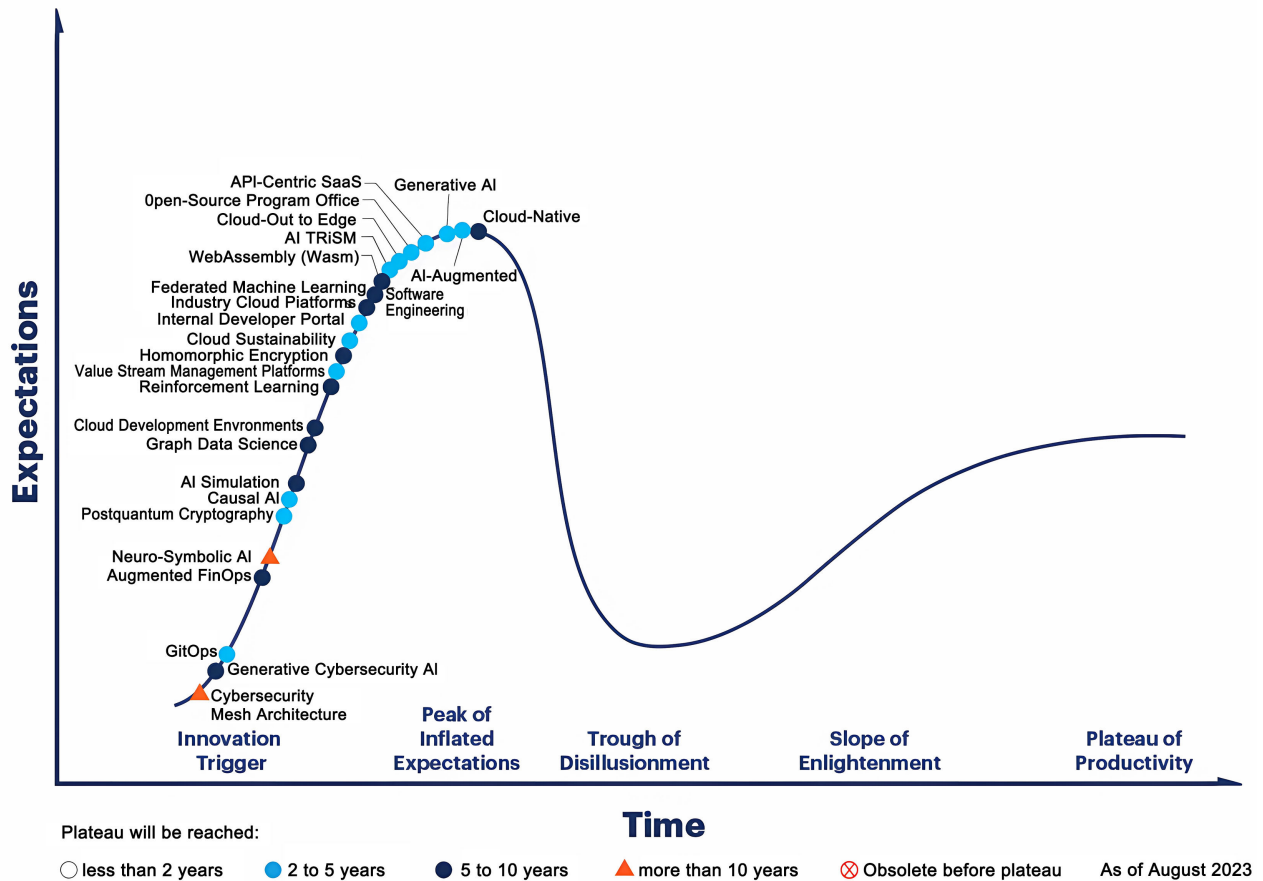
Figure 3. Generative AI on the peak of inflated expectations on the 2023 hype cycle for emerging technologies (Source: Gartner, 2023).

4. Method and Results

For the purpose of this paper, Generative AI is focused on based on Gartner's (2023) Hype Cycle for Emerging Technologies and based on the observation all throughout Malaysian Banking Sectors. Methodologically, a convenience sampling survey was conducted on 5 selected banks in Malaysia in reference to the 5 licenses issued by BNM.

The full questionnaire was designed to collect general information and ensure that details were anonymous. In line with procedures in Malaysian Banking, the survey was not subject to ethical approval. Participants were fully informed about the confidentiality of the study and provided an informed consent for participation in the survey.

A questionnaire with 14 questions has been developed which is composed of demographic Section 5 questions for sample description (gender, age, educational level, and role in their project at their banks), followed by 9 questions on fundamental aspects of Generative AI as shown in Figures 5-8.
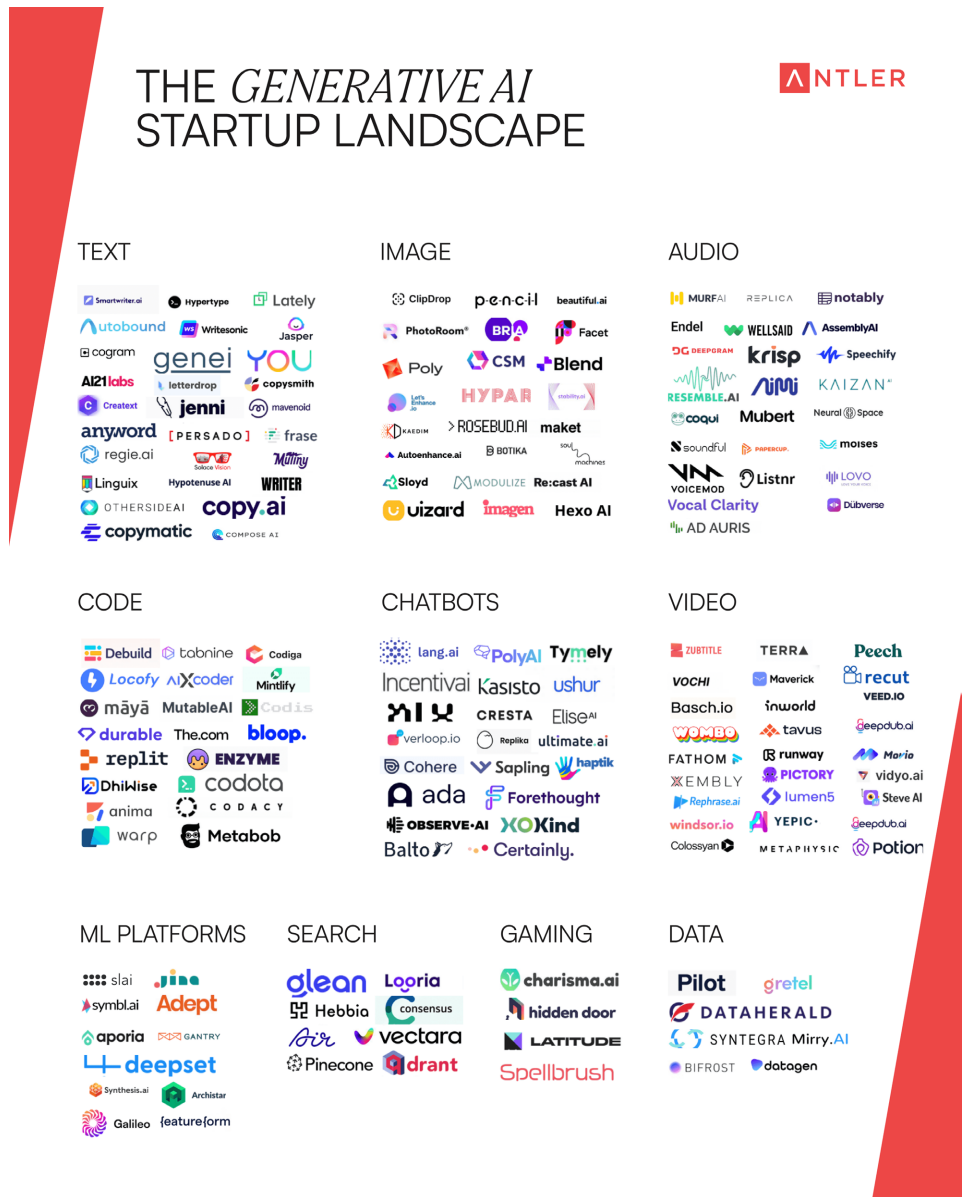
Figure 4. Evolving ecosystem in 2022-2023 which focuses on 5 categories of tooling—pretrained language models, image, video, code and audio generation (Source: Antler, 2022).
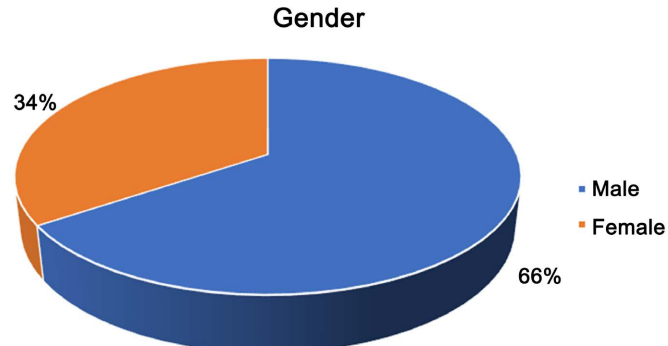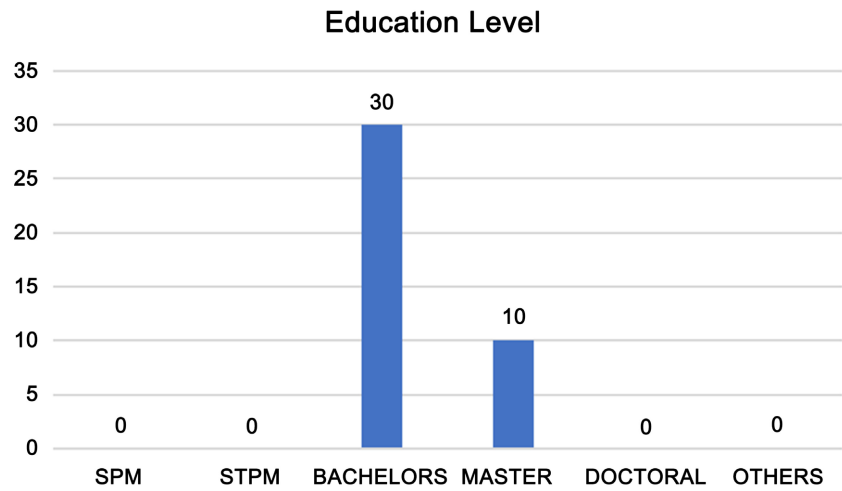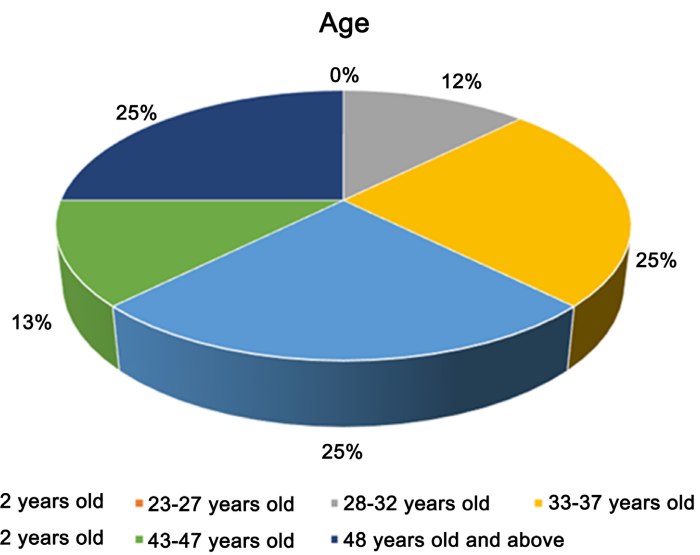

Figure 5. The percentage of respondent's gender—66% male and 34% female (Source: own compilation).

Education Level

Figure 6. Educational level of the respondents where 30 of the respondents have bachelor's degree and 10 has master's degree (Source: own compilation).

Age

Figure 7. Age group. 28 - 32 years old 12%; 33 - 37 years old 25%; 38 - 42 years old 25%; 43 - 47 years old 13%; 48 years old and above 25% (Source: own compilation).

Role in Project Structure
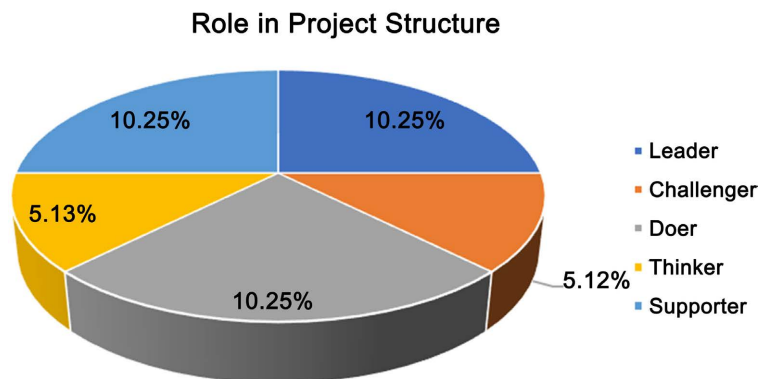
Figure 8. The pie chart shows the respondents role in their projects (Source: own compilation).

5. The Findings: Key Trends Driving Adoption of Generative AI

What are the key trends that are currently driving the adoption of Generative AI thus resulting in a proliferation of use cases in Malaysian Banking Sectors?

5.1. Promising Abilities Found in Extra-Large Models

The potential of executing a task through few-shot prompting becomes promising as a language model demonstrates random performance until reaching a certain scale, beyond which its performance significantly surpasses randomness supported in Figure 9. This advancement is propelled by the adoption of novel language modeling techniques and scaling, now embraced by the banking sector. Examples include applications in sales and customer services, where sentiment analysis and request interpretation are vital components.

5.2. Broadening Access of AI

The democratization of AI is a key driver of digital transformation and a catalyst for innovation, efficiency, and growth in the enterprise (The Enterprisers Project, 2022). The shift towards democratizing AI technologies across various industries, from aviation to finance, aims to make them more accessible, affordable, and user-friendly for a broader audience, irrespective of their formal technological background shown in Figure 10 on the Top Generative AI Projects in Malaysian

Actively Using Gen AI Project
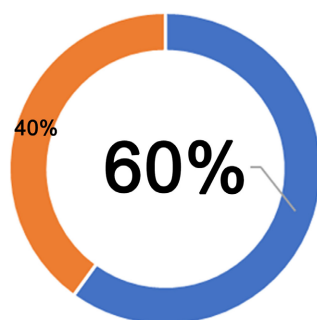
40%
60%

3 out 5 surveyed Banks in Malaysia taken from respondents representing the Banks have at least 1 Generative AI project actively in use

Developing Gen AI Projects
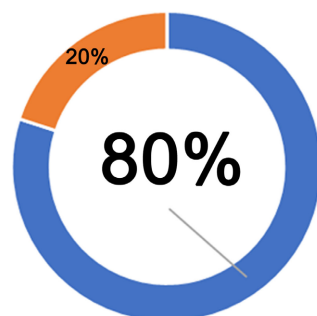
20%
80%

4 out 5 surveyed Banks in Malaysia taken from respondents representing the Banks have at least 1 Generative AI project in development

Figure 9. Most Malaysian banks surveyed are actively using generative AI or developing generative AI projects (Source: own compilation).

Top Gen AI Projects	No of Banks by Use Case Areas
AML/CFT & Fraud	3
e-KYC/ Digital On-Boarding	5
Customer Analytics	5
People/ Human Capital	4
Technology Risk Management	3

Figure 10. Top generative AI projects in Malaysian banks based on use case area (Source: own compilation).
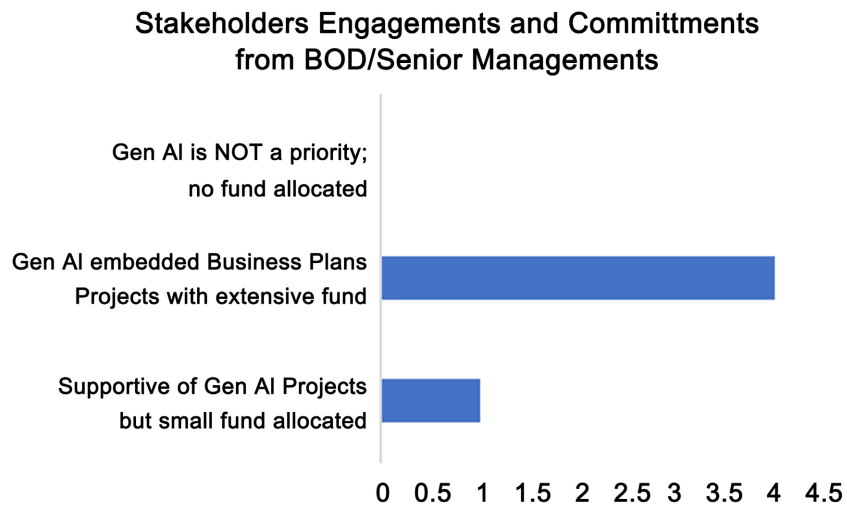
Figure 11. Interest and commitment of BOD/senior managements toward Gen AI Project in Malaysian Banking Sectors (Source: own compilation).

Banks based on Use Case Area. Presently, several banks have initiated the adoption of new tools and techniques, streamlined for ease of use through publicly accessible interfaces like the Next Generation Financial Advisor. This platform offers automated investment recommendations that extend beyond the customer's portfolio.

5.3. Accelerated Funding in AI

Enhanced investment in Generative AI aims to spearhead Genomics research, which delves into analyzing the complete or partial genetic or epigenetic sequence data to comprehend the structure and function of these sequences. An instance of its application involves identifying sequences and patterns derived from the DNA of specific bank customers. With the interest and commitment from Board of Directors and Senior Managements toward Gen AI Project in Malaysian Banking Sectors as shown in Figure 11, funding in AI is likely to be accelerated.

6. Conclusion

In conclusion, workforce transformation will be critical to creating an agile and

fit-for-future financial workforce.

- Cultivating essential competencies: Recognizing emerging and non-technical skills as vital capabilities for achieving industry and organizational objectives.
- Embracing innovative work methods: Enabling talent pools to adapt swiftly to the rapid and dynamic shifts in the workforce landscape.
- Reimagining talent management and employee experience: Introducing personalized career trajectories and embracing a flexible workforce model to enhance talent management and enrich the employee experience.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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