

Foresight Study on the Adoption of Artificial Intelligence (AI) in Employee Wellness Program in Malaysia

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Abstract

Artificial Intelligence (AI) technology makes it possible for machines and computers to resemble human intelligence and problem-solving skills. Artificial intelligence in employee wellness programs is the proper use of corporate wellness software and technology, which has become essential to technological advancements, creating a solid basis in a wide range of industries. Few studies have been conducted on AI adoption in Employee Wellness Programs in Malaysia. Therefore, this research intends to identify the issues, challenges, and trends of AI in employee wellness programs, study the key drivers of AI in employee wellness programs in Malaysia, and identify the future image of AI in employee wellness programs in Malaysia. 384 questionnaires were distributed to the employees in HRM in Malaysia, with a response rate of 60%. The study found that wellness technology, accessibility, and engagement have the highest impact and uncertainty. Four scenarios were proposed at the end of the study. The four scenarios were the thriving of AI, the sluggishness of AI technology, the scarcity of AI, and the scepticism of AI technology

1. Introduction

The technology known as artificial intelligence (AI) enables computers and machines to mimic human intelligence and problem-solving abilities. Among the specific applications of AI are machine vision, speech recognition, natural language processing, and expert systems. Business, society, and the global economy are all significantly impacted by artificial intelligence (AI). Recent years have witnessed significant developments in artificial intelligence (AI), both in the workplace and in business. Data entry and document management are just two examples of the administrative tasks that artificial intelligence (AI) can automate by simulating human interaction with computer systems (Laskowski, 2023).

Human resource management, is the process of finding, selecting, assigning, and overseeing workers inside a company. Human resources (HR) are another common term used to refer to HRM. The HR department of a business or organization is often in charge of developing, implementing, and monitoring policies that control workers and the relationship between employers and employees. (Barney, 2023). AI lessen the bias in hiring, identifies employee analytics to determine strengths, and relieves the human resources department of additional workload. With a native digital workforce already in place, artificial intelligence is effectively paving the way to take over the labour. (HRMS, 2023). Implementing a wellness program is one of the important tasks in HR. A wellness program can promote employee health and assist individual employees in resolving specific health-related issues. The employer can provide staff seminars, mandatory employee training, or even partner with a third-party company that offers a range of wellness initiatives. Any company's most significant asset is its

workforce, and keeping them in excellent physical and mental health helps them work at their best (Reddipalli, 2023).

Artificial Intelligence in employee wellness programs is the proper use of corporate wellness software and technology in employee wellness programs, which has become the essential result of technology's advancements, creating a solid basis in a wide range of industries (Reddipalli, 2023). An additional tool HR teams can use to help uncover potential health hazards among employees is predictive analytics, a subset of AI. Predictive algorithms are able to anticipate possible health problems in the future by examining patterns in employee health data. By preventing long-term health issues, this proactive strategy can lower absenteeism and increase overall productivity (Magazine, 2024). The future of AI in employee wellness initiatives will be significantly impacted by the growing sophistication of artificial intelligence (AI). By evaluating individual data and activity patterns, AI may further customize wellness programs, which could result in notable gains in overall employee health outcomes. AI can, for instance, make personalized workout recommendations based on dietary limitations or target healthy food suggestions depending on a user's fitness level. Employee data privacy is still a major hazard to be aware of, though. To resolve employee issues and foster trust, we must make sure that the data gathered through wellness initiatives is secure and handled appropriately (Ally Crowe, 2024).

In today's work environment, monitoring employees' physical and mental well-being is a top concern for all companies. There is more to good physical and emotional health at work than just being free of illness. It includes all aspects of overall health, such as mental toughness, mental stability, and physical fitness. Artificial Intelligence offers an alternative approach to monitoring and improving general well-being. The essential components of physical, mental, and emotional wellness need to be included in a comprehensive wellness plan. AI can track these records, analyse them, and provide data-driven insights to personalize the strategy (Sood, 2024). Encouraging increased wellness and mental health support in the workplace is a moral and financial necessity for organisations. Encouraging macro trends for HR include the use of AI to start mental health conversations in the workplace and promote wellbeing through software. HR professionals are more suited to see the opportunities presented by technology (Srinivasan, 2021). Businesses may develop complete wellness programs that enable staff members to make long-lasting improvements to their health and well-being by utilising innovation, modification, and a user-focused approach. These initiatives help the organisation by helping the workforce become healthier and more productive, in addition to benefiting the individual employees (Ally Crowe, 2024).

Artificial intelligence (AI) technologies offer businesses both new and unique opportunities as well as new and significant challenges. Globally, companies have challenges with employee engagement, a critical aspect of their business's well-being & efficiency. Introducing and incorporating new technology, including artificial intelligence (AI), into the company worsens these challenges. Therefore, it is essential to focus on best practices and solutions that allow individuals to contribute their mental, emotional, and physical energies to their work (Srinivasan, 2021). A lack of studies has been conducted to explore AI's benefits in managing mental health from a Malaysian perspective. Thus, this study aims to study the future image of AI adoption in wellness program. Therefore, to achieve the research objectives, the issues, challenges, trends and key drivers of AI adoption in employee wellness programs are determined. Consequently, the future image of AI adoption in employee wellness programs in Malaysia is identified.

The focus of the study is to identify the future image of Artificial Intelligence (AI) adoption in employee wellness program in Malaysia. The researcher chose to study Human Resource Management in Malaysia to know more about their acceptance in Artificial Intelligence in employee wellness program. The respondents to this research study are the employees who were in the Human Resources (HR) department. To identify the future image of Artificial Intelligence (AI) adoption in employee wellness program among Human Resource Management in Malaysia, information for this study was acquired from books, journals, blog, newspapers, and other relevant materials that were examined and assessed. The questionnaire had been created and distributed to HR staff members in Malaysian HR departments.

2. Literature Review

2.1 Definition of Artificial Intelligence

Artificial intelligence (AI) refers to computer systems that can do complicated activities formerly only performed by humans, such as reasoning, decision-making, and problem-solving (Staff, 2024). AI in HR refers to the application of machine learning (ML), natural language processing (NLP), and other AI technologies to automate human resource processes and decision-making. It offers a data-driven strategy for talent acquisition, employee growth, and retention that aims to reduce bias and improve job searchers' and workers' experiences.

With the growing understanding of mental health's importance, AI-powered platforms and chatbots are being used to provide quick mental health support. AI's future in HR and health holds enormous potential. Consider a workplace where AI-powered virtual reality programs help with stress management or wearable technology monitors health in real time, sending timely alarms to prevent serious health issues. Such convergence of AI,

automation, and wellness is poised to transform our workplaces, making them healthier, happier, and more efficient (Corporate, 2024).

2.2 Benefits of Artificial Intelligence in Employee Wellness Programs

The benefits of AI on employee wellness program is AI can create specific suggestions and solutions for employees. For example, AI-powered wellness platforms can recommend personalized exercise routines, nutrition programs, stress management approaches, and sleep optimisation measures based on a person's specific health profile and goals. This specific strategy not only boosts engagement but also raises the likelihood of excellent outcomes for employees (Erin, 2024). AI is also capable of analyzing a person's heart rate and activity tracking to identify potential health risks. By doing so, companies can take early action and provide their staff members preventive measures to improve their overall wellness (HRMS, 2024).

AI-powered initiatives for employee well-being can also lower the price of employee health-related expenses. AI can assist in spotting possible health hazards before they develop into serious problems. Artificial intelligence (AI) can identify possible health issues by evaluating employee data and notify staff members to take preventative action, including making an appointment for a check-up with their physician or changing their diet and exercise regimen. By taking a proactive stance on employee health, employers may reduce future medical costs and foster a happier, more productive staff (HealthBoxHR, 2020).

Tracking and evaluating the results of wellness initiatives is another benefit of AI-driven employee well-being programs. Data on program results, employee participation, and the overall effect on their health and well-being can all be gathered and analyzed by AI algorithms. This information can be used to show the return on investment for wellness efforts, pinpoint areas that need improvement, and modify programs to suit the requirements of employees better. Employers may optimise wellness programs and maximise benefits for workers and the firm overall by utilising data-driven insights (HealthBoxHR, 2020).

Artificial Intelligence as a knowledge enhancer. AI has a vast knowledge-sharing network and analytical algorithm. AI platforms offer a shared place where co-workers may discuss their experiences and difficulties to provide insight into the jobs that are trending and the difficulties that come with them. Additionally, it would assist the staff members in preparing ahead of time and developing their skills to the fullest. In real time, it offers useful information from mentors and professionals. This enables them to complete the work they are provided on schedule and prevents the build-up of unfinished business and missed deadlines (HRMS, 2024).

2.3 Challenges in Artificial Intelligence

Challenges in AI is privacy concerns. Gathering and analysing employee health and well-being data. Businesses need to ensure that employee data is safe and secure because this might give rise to many privacy concerns. Understanding the overall health of the company is crucial for HR professionals but doing so should not come at the expense of seeing personal information. It is immoral and frequently against the law. Failing to do so may result in privacy violations and mistrust among staff members against the program (Nicholls, 2023). Health information is sensitive. With gadgets constantly gathering information, there is always the potential of data breaches, which can cause various problems for consumers (Harris, 2023).

Moreover, AI has a high initial cost. While AI can be cost-effective at scale in the long term, there can be significant upfront expenses associated with adopting AI-powered well-being programs. AI has a strong appetite for data, and training an AI to learn about your workers and organisation before launch can be time-consuming and resource-intensive. The budget required to launch an AI product in your company. Companies will require at least cross-functional collaboration from procurement, human resources, and information technology. This can be a hurdle for many firms, especially for smaller businesses or those with restricted funds (Nicholls, 2023).

Furthermore, AI lacks a personal touch. AI technology can make customised suggestions. However, it lacks the personal touch that some employees want to feel fully supported in their well-being journey. Some people prefer to communicate with a real person to share information and plan their next steps. Others may want to confirm that they are following an expert rather than a machine-generated program, regardless of how intimate it feels. Running a software entirely powered by AI may result in a lack of faith in the whole program (Nicholls, 2023).

2.4 STEEPV Analysis

The identification of issues, challenges, and trends related to Artificial Intelligence (AI) in talent management involved gathering information from various sources, including journals, government-related articles, the internet, and reports from non-governmental organisations. These sources were analysed and categorised into social, technological, environmental, economic, political, and values factors. The STEEPV analysis was then conducted to identify the key drivers of AI technology in employee wellness programs, specifically in Malaysia. The analysis results are summarized in Table 1, which provides an overview of the identified issues, challenges, and trends. Table 6 provides the output of STEEPV.

Table 1 Output of STEEPV

| Factors | Total |
|---------------|-------|
| Social | 18 |
| Technological | 31 |
| Economic | 15 |
| Environmental | 8 |
| Political | 11 |
| Values | 19 |
| Total | 102 |

2.5 Merges Issues, Challenges, and Trends

Based on Table 2, the total of 10 merged issues, challenges, and trends were found through STEEPV analysis. These merged issues, challenges, and trends will be further examined by distributing questionnaires to the employees in Human Resource (HR) departments.

Table 2 shows the Merges Issues, Challenges, and Trends

| Issues, challenges, and trends | Drivers |
|--|---------------------------|
| 1. Rules and regulations enforcement, protect security systems and protect sensitive data, reduce risk of potential legal issues, adaptability for law enforcement needs, government involvement and benefits for rural and remote areas | Rules and regulations |
| 2. Cultivate a pleasant work environment, increase productivity, reduce time-consuming, increase leisure time | Quality of life |
| 3. AI can create a dynamic work environment, promotes innovate work environment, technology creates flexible and adaptable workforces, workplace become inclusive and accessible and more accessible and engaging. | Workplace culture |
| 4. AI as user-friendly solution, implementation of ecosystem, resource-efficient workforce, feasible and affordable, helps workers to save money, lower operating expenses, lower healthcare expenses and cost savings on insurance | Production cost |
| 5. AI personalized recommendation, monitor employee health, predict health risks, address emotional, nutritional, and physical health and improved employee wellness, use of technology to monitor a person’s health status, implement solutions for stress, enhance work-life balance | Wellness technology |
| 6. Embedding digital tool, advanced software systems to save time and money, smart wearable technology enhance employee health, reduce HR workload, AI raises employee interest, increase resilience and mental health | Workload management |
| 7. Adoption of data integration, developed new AI-powered technology, and knowledge sharing platform | Data integration |
| 8. Strong cybersecurity, AI protect data and security system, gain employee trust | Data security and privacy |
| 9. More advanced technology are needed for mental health services due to rising mental health case. | Employee demand |
| 10. AI could monitor resilience and mental health by making employee more engage and accessible. | Accessible and engagement |

3. Methodology

3.1 Research Design

The exploratory research design was used in this study. The questionnaire was used to collect information from respondents. Using the STEEPV technique, a questionnaire was created in order to determine the key drivers influencing employee wellness program in Malaysia. The survey was distributed to potential participants in Malaysian human resource management. To create many scenarios, impact uncertainty analysis was done. Similar to that, this study was divided into two stages. The flowchart for the research design is shown in Fig. 1.

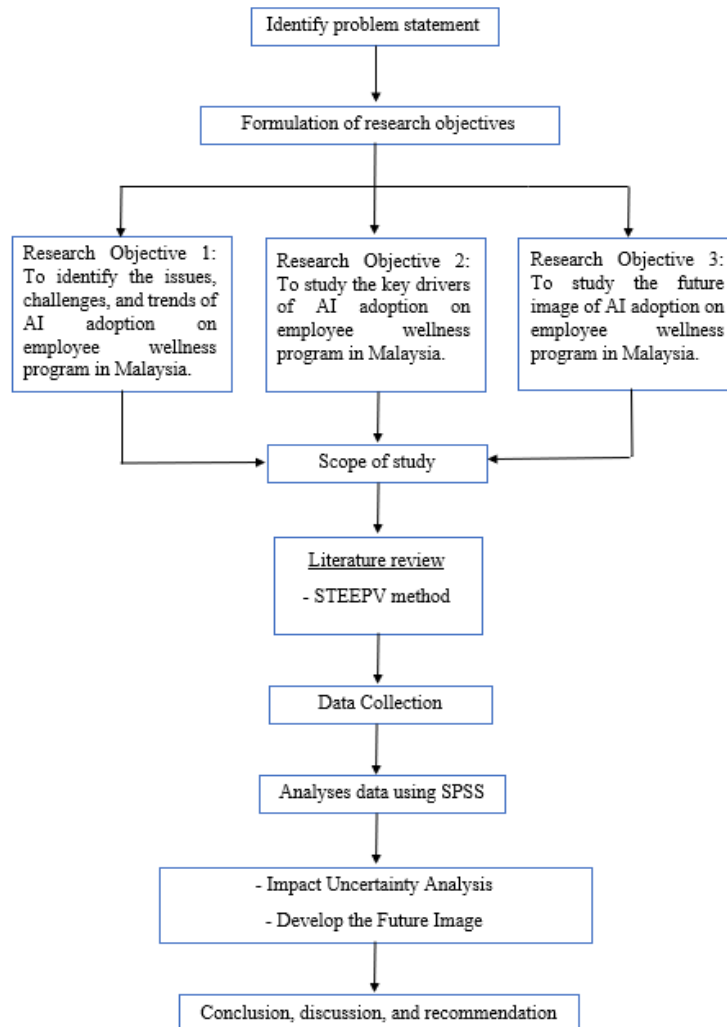


Fig. 1 Research Flowchart

3.2 First Phase

The first phase used the secondary data as a point of reference. Important drivers and future visions for the foresight study on AI application in employee wellness programs were identified during this phase using the STEEPV approach.

3.2.1 Data Analysis

The process of gathering and preparing data is known as data collection. In order to analyse Malaysia's adoption of employee wellness programs, this study looked at both primary and secondary data. According to Taherdoost (2021), primary data is information that has not been published and is first-hand and unchangeable by anyone. Information obtained by an organization from non-public sources.

According to Ajayi (2023), secondary data is information already gathered by investigative organisations and authorities. Information already acquired by another party is referred to as secondary data. Sources, such as websites, journal papers, government publications, books, and internal documents, can be used to gather secondary data. Using current data is a practical approach for researchers with limited time and resources.

3.2.2 STEEPV Analysis

STEEPV analysis as a tool for researchers doing foresight studies. This analytical type is based on secondary data. Secondary data refers to previously obtained study data that researchers can easily access (Joanicjusz, 2017).

This analysis relied on secondary data from journals and articles published between 2019 and 2024. Secondary data sources included papers from the developer of employee wellness program. Future-oriented information was gathered from different websites, providing an overview of emerging technologies such as employee wellness programs. Table 3 shows the area of STEEPV drivers in the research.

Table 3 Area of STEEPV drivers in the research

| Drivers | Related Area |
|---------------|--|
| Social | Lifestyle elements include personal characteristics, anthropology, values, behaviour, family, health, and education. |
| Technological | Includes advancements in technology, access to research and development at varying rates, attitudes toward technology, methods and levels of its use, and problems related to it, like health and safety concerns. |
| Economical | Includes factors including consumer affordability, inflation rates, industry structure and status, wage and labour cost competition, and global commerce in addition to the level and distribution of economic growth. |
| Environmental | This section covers environmental regulations and protection, community attitudes towards the environment, ecosystems including pollution and natural disasters, and welfare. |
| Political | Political aspect focuses on the study of dominant political viewpoints in parties such government involvement, political viewpoints, or government policies. |
| Values | The value component refers to issues and attitudes towards work that remain consistent. |

3.2.3 Analysis of STEEPV

The STEEPV framework considers elements such as social, technological, economic, environmental, political, and values to guide future discussions. The STEEPV analysis identifies many concerns, drivers, policy recommendations, future projects, and critical regions. Data was analysed using the STEEPV analysis.

3.2.4 Population and Sampling

A research population is a group of individuals or items that are central to a scientific topic. It refers to a specified group of individuals or objects with similar features. The population frame includes all features of the sampled population. This survey included all personnel working in Malaysia HR departments. In 2023, the total population of this study is about 15.81 million human resource employees in Malaysia.

According to (Krejcie & Morgan, 1970), sampling is selecting a representative sample from a population to discover its parameters and characteristics. Sampling is the selection and matching of population units. Based on the Krejcie & Morgan table, 384 employees. Table 4 displays the sample size of a population table from the HR department that was chosen for the sample size.

Table 4 Sample Size of a Known Population Table

| Table for Determining Sample Size of a Known Population | | | | | | | | | |
|---|----|-----|-----|-----|-----|------|-----|--------|-----|
| N | S | N | S | N | S | N | S | N | S |
| 10 | 10 | 100 | 80 | 280 | 162 | 800 | 260 | 2800 | 338 |
| 15 | 14 | 110 | 86 | 290 | 165 | 850 | 265 | 3000 | 341 |
| 20 | 19 | 120 | 92 | 300 | 169 | 900 | 269 | 3500 | 346 |
| 25 | 24 | 130 | 97 | 320 | 175 | 950 | 274 | 4000 | 351 |
| 30 | 28 | 140 | 103 | 340 | 181 | 1000 | 278 | 4500 | 354 |
| 35 | 32 | 150 | 108 | 360 | 186 | 1100 | 283 | 5000 | 357 |
| 40 | 36 | 160 | 113 | 380 | 191 | 1200 | 291 | 6000 | 361 |
| 45 | 40 | 170 | 118 | 400 | 196 | 1300 | 297 | 7000 | 364 |
| 50 | 44 | 180 | 123 | 420 | 201 | 1400 | 302 | 8000 | 367 |
| 55 | 48 | 190 | 127 | 440 | 205 | 1500 | 306 | 9000 | 368 |
| 60 | 52 | 200 | 132 | 460 | 210 | 1600 | 310 | 10000 | 370 |
| 65 | 56 | 210 | 136 | 480 | 214 | 1700 | 313 | 15000 | 375 |
| 70 | 59 | 220 | 140 | 500 | 217 | 1800 | 317 | 20000 | 377 |
| 75 | 63 | 230 | 144 | 550 | 226 | 1900 | 320 | 30000 | 379 |
| 80 | 66 | 240 | 148 | 600 | 234 | 2000 | 322 | 40000 | 380 |
| 85 | 70 | 250 | 152 | 650 | 242 | 2200 | 327 | 50000 | 381 |
| 90 | 73 | 260 | 155 | 700 | 248 | 2400 | 331 | 75000 | 382 |
| 95 | 76 | 270 | 159 | 750 | 254 | 2600 | 335 | 100000 | 384 |

Note: N is Population Size; S is Sample Size
Source: Krejcie & Morgan, 1970

3.3 Research Instrument

The research instrument was used to gather, measure, and analyse data for the study. Researchers use the phrase "research instrument" to refer to measuring equipment like surveys, tests, and questionnaires. The questionnaire was the primary technique used in the present study. The questionnaire consisted of four parts, which are Section A, Section B, Section C, and Section D. Table 5 shows the structure of the questionnaire.

Table 5 *Structure of the questionnaire*

| Section | Item |
|---------|---|
| A | Demographic information of the respondents. |
| B | The importance of factors/drivers towards adoption of artificial intelligence technology in employee wellness program in Malaysia. |
| C | The impact of factors/drivers towards adoption of artificial intelligence technology in employee wellness program in Malaysia. |
| D | The uncertainty of factors/drivers towards adoption of artificial intelligence technology in employee wellness program in Malaysia. |

3.4 Pilot test

A pilot test assesses the validity, completion duration, and common understanding of questions among the intended target population. Pilot tests, often known as "feasibility", studies, are scaled-down versions of full-scale research. They include comprehensive pre-testing of certain research methods, such as questionnaires or interview schedules (Hundley, 2002). Table 6 shows the table of reliability.

Table 6 *Table of reliability*

| Cronbach's Alpha | Internal Consistency |
|-------------------------|----------------------|
| $\alpha \geq 0.9$ | Excellent |
| $0.8 \leq \alpha < 0.9$ | Good |
| $0.7 \leq \alpha < 0.8$ | Acceptable |
| $0.6 \leq \alpha < 0.7$ | Questionable |
| $0.5 \leq \alpha < 0.6$ | Poor |
| $\alpha < 0.5$ | Unacceptable |

3.5 Descriptive Analysis

Descriptive analysis refers to a questionnaire used to collect data for foresight research on adopting artificial intelligence in employee wellness programs in Malaysia. Data was analysed using SPSS statistical software. The average score gained was used to facilitate the investigation. Table 7 displays the mean score interpretation.

Table 7 *Mean scores Interpretation*

| Mean score | Interpretation |
|------------|----------------|
| 1.00-1.80 | Very low |
| 1.81-2.60 | Low |
| 2.61-3.20 | Medium |
| 3.21-4.20 | High |
| 4.21-5.00 | Very High |

3.6 Impact-Uncertainty Analysis

The impact-uncertainty analysis was carried out utilizing descriptive results. This study examines the uncertainty in determining the goal of using artificial intelligence for employee wellness programs in Malaysia. A list of variables derived from the STEEPV investigation. The effect-uncertainty analysis prioritises drivers having a significant impact and uncertainty. Fig. 2 illustrates the impact-uncertainty analysis.

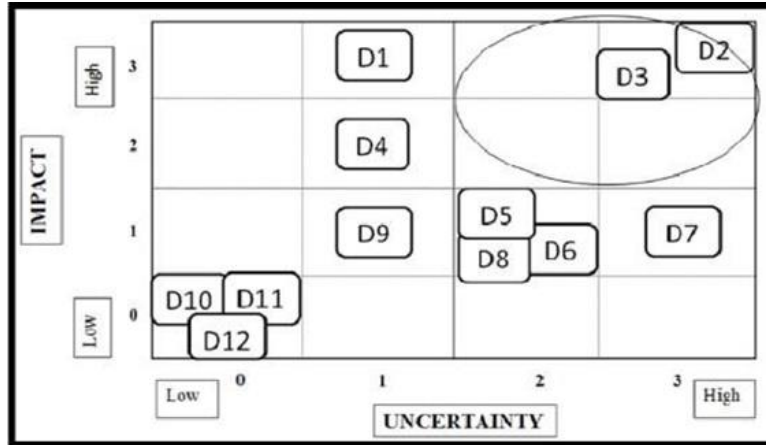


Fig. 2 Impact-Uncertainty Analysis

3.7 Scenario Building

Scenarios define potential outcomes, including future issues, trends, events, strategies, and future-related developments. This strategy is often used for brainstorming during the Impact-Uncertainty Analysis stage. The uncertainty axes define the range of future uncertainties and possible outcomes. This level involves conceptual thinking, specifically perception, which combines two factors to predict future consequences. Fig. 3 illustrates scenario building.

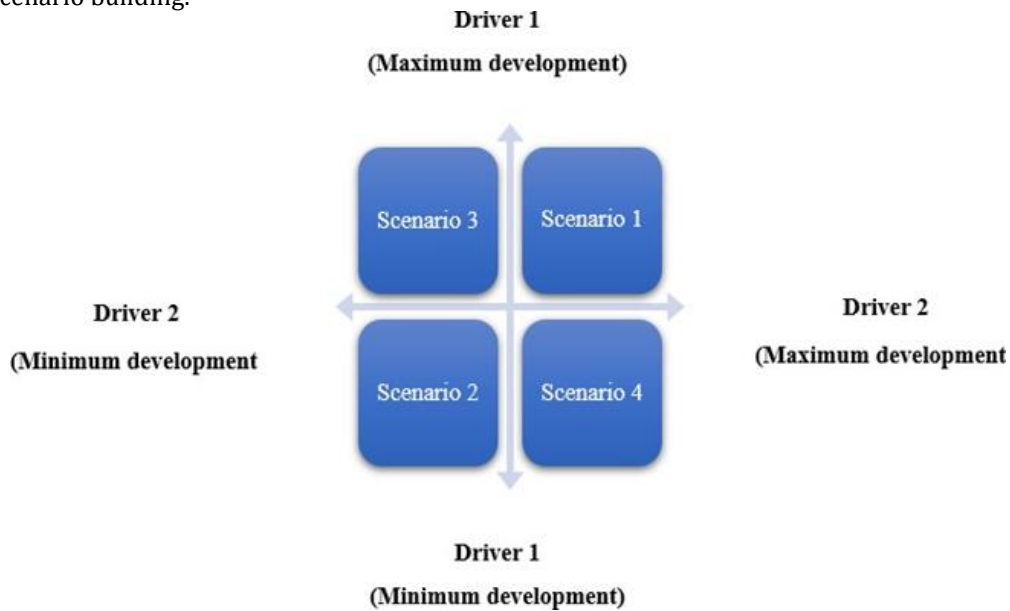


Fig. 3 Scenario Building

4. Results and Discussion

4.1 Response Rate

For this research, 384 sample size for the targeted respondents. The survey was distributed using online platforms, including WhatsApp and email. Table 8 shows that 230 valid surveys have been completed and turned in, which reflects a 59.9% response rate.

Table 8 Questionnaire Response Rate

| Sample Size | Returned (Valid) Questionnaire | Response Rate (%) |
|-------------|--------------------------------|-------------------|
| 384 | 230 | 59.9% |

4.2 Reliability Test

The value of Cronbach's Alpha is shown in Table 9. Since the value is more than 0.9, it is outstanding. Consequently, the study demonstrated reliability and could be enlarged. The Cronbach's Alpha value for the pilot test is 0.938, as shown in Table 10. Fifteen respondents have responded. With 230 respondents, the actual study's Cronbach's Alpha value is 0.954. The high dependability of the variable is thus demonstrated by this study.

Table 9 Cronbach's Alpha Classification

| Cronbach's Alpha | Internal Consistency |
|-------------------------|----------------------|
| $0.9 \leq \alpha$ | Excellent |
| $0.8 \leq \alpha < 0.9$ | Very Good |
| $0.7 \leq \alpha < 0.8$ | Good |
| $0.6 \leq \alpha < 0.7$ | Moderate |
| $\alpha < 0.6$ | Poor |
| $0.9 \leq \alpha$ | Excellent |

Table 10 Result of Reliability in Real Study

| | Cronbach's Alpha | Number of Items | Number of Respondents |
|------------|------------------|-----------------|-----------------------|
| Pilot Test | 0.938 | 30 | 15 |
| Real Study | 0.954 | 30 | 230 |

4.3 Respondents' Demographic Information

Table 11 shows the demographic analysis to describe the tabulation of the respondents. It consists of gender, age, race, educational level, monthly income, working experience, heard about Artificial Intelligence in Employee Wellness Program, Consideration of using Artificial Intelligence in Employee Wellness Program, Intention of implement Artificial Intelligence in Employee Wellness Program, and Prediction on Artificial Intelligence to be Implemented in Employee Wellness Program in Malaysia. A total of 230 respondents were involved in this study. It is noted that most of the respondents (57.8%) were female and from the age group below 30 years old (53.9%), and (63.9%) were Indian, and (53%) held a bachelor's degree and had a monthly income below RM3000 (47%). Besides, most of the employees have been working for less than 3 years, which is 38.7%.

The majority of 154 respondents have heard about artificial intelligence in employee wellness programs. In comparison, the remaining 76 respondents did not hear about it, and only 71.3% of the respondents agreed that artificial intelligence will be considered in an employee wellness program in the future. Most of the respondents (68.7%) intend to implement Artificial Intelligence in employee wellness programs, and 46.1% of the respondents, which are 106, agree that it can be implemented within 2 to 5 years from now.

Table 11 Respondents' Demographic Information

| Characteristics | Category | Frequency | Percentage (%) |
|-----------------|--|-----------|----------------|
| Gender | Male | 97 | 42.2 |
| | Female | 133 | 57.8 |
| Age | Below 30 | 124 | 53.9 |
| | 31-40 | 54 | 23.5 |
| | 41-50 | 31 | 13.5 |
| | 51 and above | 21 | 9.1 |
| Race | Malay Chinese | 42 | 18.3 |
| | Indian | 41 | 17.8 |
| Education Level | | 147 | 63.9 |
| | SPM/O-Level | 40 | 17.4 |
| | STPM/ Matriculation/ Foundation/ Diploma | 37 | 16.1 |

| | | | |
|--|--------------------|-----|------|
| | Bachelor's Degree | 122 | 53 |
| | Masters | 29 | 12.6 |
| | PhD | 2 | 0.9 |
| Monthly Income | Below RM3000 | 108 | 47 |
| | RM3001 – RM5000 | 72 | 31.3 |
| | RM5001 – RM7000 | 35 | 15.2 |
| | RM7001 – RM9000 | 14 | 6.1 |
| | Above RM9001 | 1 | 0.4 |
| Working Experience | Below 3 years | 89 | 38.7 |
| | 3-5 years | 55 | 23.9 |
| | 6-8 years | 30 | 13 |
| | 9 years and above | 56 | 24.3 |
| Heard about Artificial Intelligence in Employee Wellness Program | Yes | 154 | 67 |
| | No | 76 | 33 |
| Consideration of using Artificial Intelligence in Employee Wellness Program | Yes | 164 | 71.3 |
| | No | 66 | 28.7 |
| Intention of implement Artificial Intelligence in Employee Wellness Program | Yes | 158 | 68.7 |
| | No | 72 | 31.3 |
| Prediction on Artificial Intelligence to be Implemented in Talent Management | Immediately | 80 | 34.8 |
| | 2-5 years from now | 106 | 46.1 |
| | 5-7 years from now | 32 | 13.9 |
| | In a decade | 12 | 5.2 |

4.4 Impact Uncertainty Analysis

Based on data derived from Table 12 were used to construct impact and uncertainty analysis, as shown in Fig. 4. The top two coordinates with high impact and uncertainty were chosen, which are D5 (3.57, 3.51) and D10 (3.58, 3.53). Both drivers have the highest uncertainty and impact on Malaysia's artificial intelligence technology in the employee wellness program. These two drivers, which are wellness technology (D5) and accessible and engagement (D10), have been selected as the top drivers and will be used to generate them in the next section.

Table 12 Mean of 10 Leading Drivers of Level of Impact and Uncertainty

| No | Drivers | Impact | Uncertainty |
|-----|---------------------------|--------|-------------|
| D1 | Rules and regulations | 3.40 | 3.42 |
| D2 | Quality of life | 3.48 | 3.36 |
| D3 | Workplace culture | 3.60 | 3.33 |
| D4 | Production cost | 3.52 | 3.43 |
| D5 | Wellness technology | 3.57 | 3.51 |
| D6 | Workload management | 3.60 | 3.40 |
| D7 | Data integration | 3.50 | 3.39 |
| D8 | Data security and privacy | 3.60 | 3.39 |
| D9 | Employee demand | 3.64 | 3.44 |
| D10 | Accessible and engagement | 3.58 | 3.53 |

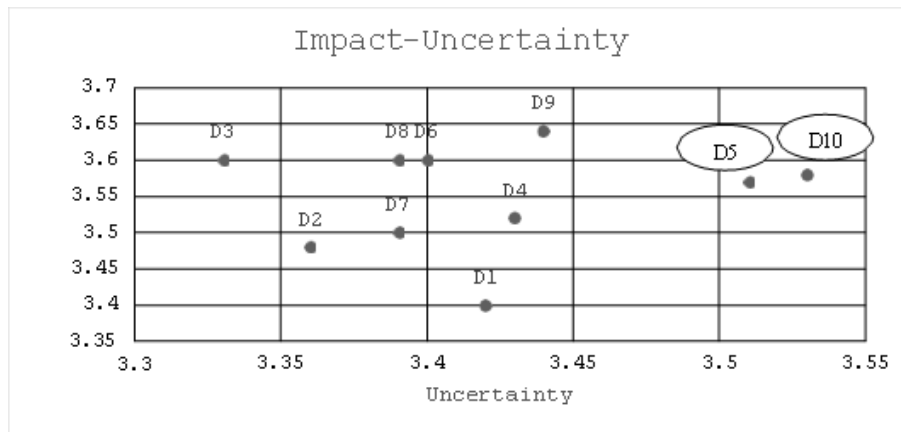


Fig. 4 Impact-Uncertainty Analysis

5. Conclusion

This study's first objective is to determine the issues, challenges, and trends of Artificial Intelligence in employee wellness program. The STEEPV analysis was used to generate this objective. Based on STEEPV analysis technology is the most important aspect in adopting artificial intelligence, followed by social, economic, political, values, and environmental variables. The second objective is to study the key drivers of AI in employee wellness program in Malaysia. This objective has been generated by merging the issues, challenges, and trends in the first objective after the STEEPV analysis. For this goal, ten drivers have been designed in more complexity and detail. The ten drivers are the rules and regulations, quality of life, workplace culture, production cost, wellness technology, workload management, data integration, data security and privacy, employee demand, accessible and engagement. The third objective of this research is to determine the future image of artificial intelligence adoption in employee wellness program in Malaysia. The purpose is to identify the trend that drives future changes for artificial intelligence adoption in employee wellness program. The trend is achieved by generating a scenario analysis of four different alternative scenarios based on the top two drivers selected from the impact-uncertainty analysis. The selected top two drivers have been discussed in the following section. It described how uncertain future developments are and how they could impact on artificial intelligence adoption in employee wellness program in Malaysia. The top two drivers that have the highest impact and uncertainty were wellness technology, accessibility, and engagement.

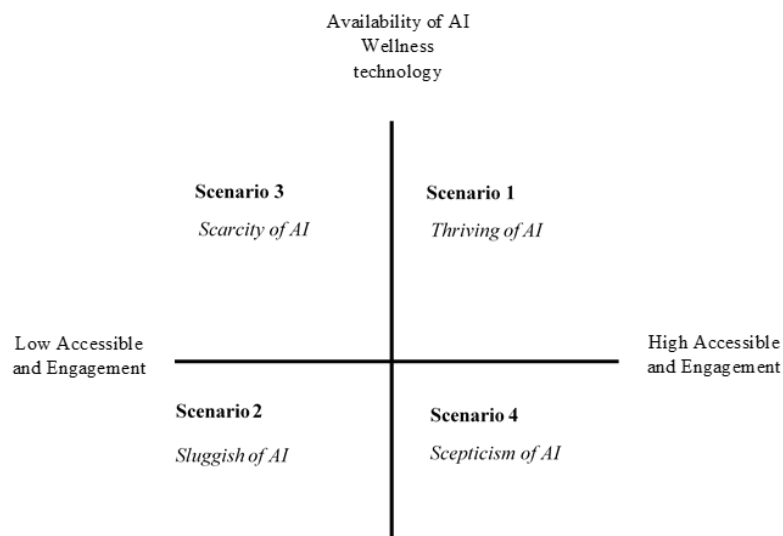


Fig. 5 Four Alternative Scenario

The first scenario happens when there is availability of AI wellness technology and high accessible and engagement. The effectiveness of artificial intelligence in employee wellness program suggests that, in the upcoming years, Malaysian human resource management will fully integrate this advanced technology. The availability of wellness technology can greatly increase productivity by lowering stress, improving focus, and boosting vitality. Since employees are the foundation of every company, their wellness is essential to both individual and organizational success. Numerous businesses are starting to adopt new wellness technology and

investigate the potential benefits of AI. In the future, AI will revolutionize employee benefits by improving and optimizing in the company. According to Sood (2024), by offering predictive analysis of employee trends, AI systems provide an advance wellness efforts. AI becomes a proactive tool in supporting employee wellness by monitoring their physical, mental, and stress levels through lifestyle statistics analysis, energy checks, and program adaptation based on behavioural insights and integrated health data. Furthermore, these systems will save time on research, selection, and scheduling by planning appropriate interventions and connecting users with specialists. According to the Cobalt team (2024), the use of AI in mental health monitoring is another outstanding development in wellness. By examining trends in communication and work habits, AI-powered technologies can identify indications of stress, sadness, and anxiety before they become serious. As a result, employers will be provide prompt interventions, giving their employees the assistance they require to preserve mental health. Moreover, biometric technology allows for the creation of highly customized wellness technology by using measurements such as heart rate, blood pressure, body mass index (BMI), oxygen levels, sleep habits, and even genetic information. For example, biometrics are used by fitness wearables such as fitness trackers and smartwatches to provide individualized exercise regimens, nutritional advice. They provide feedback and recommendations based on each user's unique needs by analysing their heart rate, sleep habits, and level of exercise. This method prioritizes individual health requirements and objectives. According to Good (2023), it is possible to identify predictive patterns of health by continuously monitoring an individual's biometrics. Early detection of possible health problems is made possible by this preventive healthcare method, which offers a major management advantage. Additionally, combining biometrics with artificial intelligence (AI) could lead to improvements in predicted health. By analysing intricate databases, identifying trends, and forecasting future health outcomes, these technologies allow for proactive wellness interventions as opposed to reactive ones.

Companies need to remain ahead of these new trends as the wellness landscape changes to cultivate a workforce that is engaged, productive, and healthy. In additional, an organization's most valuable resources is time. Employee fatigue can therefore result from improper time management or insufficient working time allocation, which can affect the company's overall production and lead to physical and mental exhaustion. AI's function as a time manager is to automate repetitive processes by enabling intelligent meeting scheduling, task prioritization, deadline management, and job distribution. This will help the finance team and the HR professional maintain timely payroll and entrance and exit times, improve task quality, and increase productivity (Sood, 2024). Instant access to information and shorter wait times are two benefits of this technology. Local governments can increase the efficiency of service delivery by automating routine interactions, freeing up human resources for more difficult duties. Governments may used AI wellness program to examine health data for predictive analytics, which can help them spot trends and guide public health initiatives. AI can be used such as to forecast illness outbreaks. For example governments can improve accessibility by implementing AI technologies like chatbots and virtual assistants to offer residents who are looking for health information or services assistance at all hours. Future views of Malaysia from other nations will shift as a result of the application of AI wellness program and contemporary technologies, particularly in managing wellness. It will have a favourable effect on Malaysia's human resources division in the hospitality. This is due to the fact that Malaysia is a step ahead and will continue to advance in a number of service due to the advancement of AI technology.

The second scenario is the most undesirable scenario. In this scenario, poor potential refers to unavailability of AI wellness technology and low accessible and engagement of AI towards employee wellness program. Failure to implement artificial intelligence in employee wellness program, the organisation will be outdated resulting poor engagement in workplace. Because of this, the human resources sector will continue to be disorganised and technologically sluggish, which will limit the potential of AI technology in employee wellness programs. Unavailability of wellness technology will lead to sluggish of AI in employee wellness program such as the chance of unemployment has sharply increased for certain employees, and they also feel more threatened at work. AI systems can be used to detect risks, automate hazardous operations, or track employee exhaustion, among other ways to improve workers' health and safety at work. For instance, most of the employees feeling more satisfied at work once AI was implemented. However, from the standpoint of occupational safety and health (OSH), the employment of AI poses additional hazards. Thus, Government can collaborate with international partnerships to facilitate the best practices and expertise in AI for wellness technology. For instance, relationships with other nations to create international guidelines and standards for AI in HR department. The government can also provide extensive training programs that not only improve employees' technical proficiency but also prepare them for future technological advancements.

The third scenario, there is availability of AI wellness technology but low accessibility and engagement, this scenario will arise. In this case, it is expected that the researchers' priority for strong wellness will result in a varied and flexible workforce. However, with low accessibility and engagement, the company will encounter issues like pressure to reskill and upskill, especially for employees who feel unprepared to handle the digital world. Workplace wellness technology can be revolutionized by incorporating stress-reduction and mindfulness technologies. Tools such as biofeedback gadgets, virtual reality relaxation areas, and meditation applications can be applied. These tools will assist workers in reducing stress, increasing concentration, and creating a work-life

balance. All things considered, incorporating mental health into workplace wellness initiatives is a trend and essential in the future. Employers can create a resilient, effective, and healthy staff by embracing AI-driven solutions, encouraging candid discussions, and incorporating cutting-edge stress-reduction tools. Corporate employers place a high premium on mental health since it will determine the success of workplace wellness initiatives in the years to come (Cobalt, 2024). Low accessibility and engagement may decrease workplace engagement among employees. Employee engagement at work will be low if AI is not available. Therefore, by raising knowledge of AI's efficiency, the government should contribute to improving workplace accessibility and participation. Because of this, employees will be more motivated and able to engage, which will assist in bringing together the various types of facilitators and obstacles that affect their involvement in workplace wellness initiatives. AI's adaptability and responsiveness are revolutionizing the workplace. This is because traditional methods for measuring employee participation in workplace health initiatives frequently rely on self-reporting and manual data collection, which may lead to biases and errors. Artificial intelligence (AI) is a potent tool for in-depth information analysis for managers can manage complex data. At the same time, AI improves activities for employees will increase efficiency and production.

Last but not least, scenario 4 will occur when there is high accessibility and engagement with AI but unavailability of AI wellness technology. High levels of accessibility and engagement at work will generally lower stress levels among employees, but the unavailability of AI wellness technology results in higher absenteeism, where workers may find it difficult to give their best job because of mental health issues. Performance and general productivity may be greatly impacted by this. Having a healthy mind begins with maintaining good physical health. But we have to realize that mental health is a complicated field, and it is almost hard to discover a solution that works for everyone. However, the main issue of tracking stress levels can be resolved by integrating AI, which will also introduce the required treatments. For instance, workers who spend too much time in front of a screen complain about monotony and dry eyes. Receiving reminders to move, stretch, eat, or drink when sitting still for extended periods of time would be an easy solution. In order to reduce work-related stress and avoid burnout, it is also essential to support employee well-being by encouraging work-life balance policies and providing easily accessible AI mental health tools, such as counselling and stress management courses. AI's ability to enable constant connectivity also raises questions around work-life balance. Because they may access job-related information and do activities at any time and from any location, employees may find it difficult to detach from their work, which can result in burnout and a decline in general well-being. The government should investigate how an AI wellness program might be used to improve work-life balance rather than worsen the fuzziness of the lines between personal and professional lives.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

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