AI And Gen Z: Enhancing Workplace Well-Being through Informal Learning

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Abstract. Artificial intelligence (AI) has been implemented in various aspects of our daily lives. In Indonesia alone, recent technology adoptions have started to utilize AI advancements to improve services. AI applications have proven to help humans work more quickly and efficiently. However, AI will replace human workers and take over jobs, as the more AI is used, the less labour input is required. Generation Z, who grew up in the digital era and are familiar with technology, are now facing concerns about being replaced by AI. This study aims to determine the role of AI opportunity perception on workplace well-being (WWB) and to examine whether informal learning in the workplace (ILW) mediates the role of AI opportunity perception on generation Z employees' WWB. The research participants were 177 Indonesian employees based in Jabodetabek, aged 18 to 27 years. The sampling technique employed was convenience sampling. The instruments used were the AI Opportunity Perception scale (5 items, α = 0.741), Workplace Well-being scale (6 items, α = 0.766), and Informal Learning in the Workplace scale (9 items, α = 0.785). The research results indicate that AI opportunity perception has a significant effect on Generation Z employees' WWB. The Sobel test also suggests that ILW played a mediating role between AI opportunity perception and WWB.

Keywords: Artificial Intelligence Opportunity Perception, Informal Learning in the Workplace, Generation Z, Workplace Well-Being.

1 Introduction

In recent years, technological advancements have rapidly progressed alongside scientific developments. Technology has made devices more futuristic and intelligent, even designed to resemble human intelligence [1]. One such advancement is artificial intelligence (AI), a computer-based technology that enables capabilities to perform human activities [2], [3]. AI has been implemented in various aspects of our daily lives [4]. In Indonesia, recent technology adoptions have started to utilize AI advancements to improve services [5]. According to the Populix survey, 45% of Indonesians use AI-based platforms to enhance work effectiveness with ChatGPT (52%) and Copy.ai (29%) are the most widely used platforms [6]. AI applications have proven to help humans work

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more quickly and efficiently [7]. Nevertheless, the implementation of AI in the workplace presents both benefits and threats [8]. As AI becomes more prevalent, it may replace human workers and take over jobs, thereby reducing the need for labor input [9].

The Ministry of Manpower of the Republic of Indonesia reported that 52% of Generation Z has entered the workforce [10]. Generation Z, who grew up in the digital era and were familiar with technology, faced concerns about being replaced by AI [11]. To survive in rapid technological advancement, especially AI, Generation Z employees should view AI as an opportunity rather than a threat to ensure their workplace well-being. AI opportunity perception refers to how individuals and organizations view the benefits of AI technologies.

Previous studies have shown that AI had a significant impact on employees' workplace well-being. AI was found to have a significant and positive impact on workplace well-being (WWB) [12], [13]. Conversely, research conducted by Kinowska and Sienkiewicz concluded that algorithmic management practices and workplace well-being (WWB) had a significant negative impact [14]. Page [15] defined workplace well-being (WWB) as the sense of well-being felt by employees from their jobs, which was related to the general feelings employees had about their workplace (core affect) and satisfaction with the intrinsic and extrinsic values of their work (work values) [16]. Similarly, Fridayanti et al. [17] stated that workplace well-being includes perceptions of well-being related to work and the work environment, including the quality and safety of the physical environment, as well as employees' feelings about their jobs, work environment, and organizational climate. Furthermore, research conducted by Zamralita and Wilis [18] indicated that WWB can increase employee work engagement, which positively impacts employee enthusiasm, perseverance, and productivity.

Xu et al. [19] argued that learning is an important way to face the development of AI and is a key method in building knowledge and competencies. Informal learning in the workplace (ILW) was defined as gaining skills through practical experience, observing colleagues, receiving guidance, feedback, or supervision from supervisors or peers, and engaging in self-directed study [20]. Furthermore, ILW has been demonstrated to contribute to increased job satisfaction by fulfilling three psychological needs, thereby enhancing workplace well-being (WWB) [19]. Based on self-determination theory (SDT), the three psychological needs, namely competence, autonomy, and relatedness, needed to be met to adequately motivate employees and ensure they worked optimally and experienced WWB [21].

Considering the importance of WWB, this study aims to determine the role of AI opportunity perception on WWB and to examine whether informal learning in the workplace (ILW) mediates the role of AI opportunity perception on generation Z employees' WWB. Due to the country's rapid adoption of AI technologies and the significant presence of Generation Z in the workforce, understanding how AI opportunities and informal learning can enhance WWB is crucial for organizational success. Informal learning in the workplace is also highly relevant in Indonesia, where cultural norms often emphasize collective learning and collaboration. For example, the Indonesian concept of "gotong royong" (mutual cooperation) encourages working together to achieve common goals, reflecting the importance of collective effort and shared

knowledge in both social and professional settings [22]. Generation Z, as digital natives, are well-suited to leverage AI technologies and informal learning opportunities to enhance their skills and job satisfaction.

This study aims to test the research model and provide further insight into previous research regarding the important role of AI opportunity perception and informal learning in enhancing WWB. It hopes to enrich the literature on AI opportunities and informal learning, thereby emphasizing the importance of enhancing WWB. Based on the study aims, we proposed hypotheses in this study are:

H1 : AI opportunity perception plays a role on Gen Z employees' WWB
H2 : AI opportunity perception plays a role on ILW
H3 : ILW plays a role on Gen Z employees' WWB
H4 : ILW plays a mediating role on AI opportunity perception and Gen Z employees' WWB

The model of the current study is described in Figure 1 below:

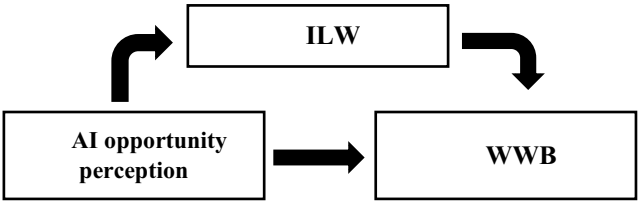

Fig. 1. Research Model

2 Research Method

2.1 Samples

This study requires the participation of Generation Z employees who meet the following criteria: (a) aged 18 – 27 years, (b) at least graduated from high school or vocational high school, (c) actively employed in the Jabodetabek area (d) with at least one year of work experience, and (e) working with smart technology (i.e., artificial intelligence, robots, automation machines, etc.). In this study, researchers employed convenience sampling (non-probability sampling technique), where participants were selected based on their availability, ease of access, and fulfilment of the study criteria.

The participants were recruited through various social media platforms, including WhatsApp, Line, Instagram, LinkedIn, Facebook, and Twitter. Initially 277 participants completed the survey, but 100 did not meet the specific criteria and were thus excluded from the analysis, resulting in a total sample size of 177 participants. The sample consisted of 24.9% male and 75.1% female. The age distribution showed that most participants were 25 years old (18.65%) and least were 18 years old (0.6%), with an average age of 23.73. The majority of participants were based in Bekasi (35.65%) and came

from various industrial fields, including services, tourism, trade, fishing, industry, mining, agriculture, livestock, technology/information/transport, formal enterprises, and informal enterprises. To avoid bias, participants were not required to provide personal data such as full names, phone numbers, or email addresses. The demographic of participants can be seen in table 1.

Table 1. Demographic characteristics of participants

	Criteria	Frequencies	Percentages (%)
Age	18	1	0.6
	19	5	2.8
	20	11	6.2
	21	21	11.9
	22	29	16.4
	23	14	7.9
	24	22	6.2
	25	33	18.6
	26	26	14.7
	27	26	14.7
Education	High/Vocational School	71	40.1
	Diploma	3	1.7
	Bachelors	101	57.1
	Masters	2	1.1
Years of Service	1 – 3 years	142	80.2
	4 – 7 years	35	19.8

[a] Note: $N = 177$

2.2 Measurements

The instruments employed in this study were adapted and modified from the original scales to ensure cultural and linguistic relevance in the Indonesian context. The instruments included a 5-item Scale of AI Opportunity Perception by Xu [19] (e.g., "Penerapan teknologi pintar/smart technology oleh perusahaan bermanfaat bagi saya") with a Cronbach's alpha of 0.741, a 6-item Scale of Workplace Well-being by Zheng [23] (e.g., "Saya puas dengan tanggung jawab pekerjaan saya") with a Cronbach's alpha of 0.766, and a 9-item Scale of Informal Learning in the Workplace by Noe [24] (e.g., "Berinteraksi dengan rekan kerja saya") with a Cronbach's alpha of 0.785.

Each instrument was measured on 5-point Likert-scale (1 = Strongly disagree to 5 = Strongly agree). The instruments were translated from English into Indonesian (Bahasa Indonesia) to ensure that participants could more readily comprehend the items and provide responses that accurately reflected their true perceptions of each statement. After translation, the instruments were reviewed by expert in the field of Industrial and

Organizational Psychology to ensure their readability. To validate the translated instruments, a validity test was conducted. The results demonstrated that all items were good validity. The total correlation scores ranged from 0.695 to 0.713 for the AI Opportunity Perception Scale, 0.503 to 0.742 for the Workplace Well-being Scale, and 0.516 to 0.726 for the Informal Learning in the Workplace Scale. These correlation scores demonstrate that the translated instruments are an appropriate means of measuring the constructs they are intended to assess in the Indonesian context.

2.3 Data Collection and Analysis

This study employed a quantitative research method. Data collection was conducted using online questionnaires distributed via Google Forms from September to October 2024. Google Forms were distributed through various social media platforms (i.e., WhatsApp, Line, Instagram, LinkedIn, Facebook, and Twitter). To ensure clarity, participants were initially provided with comprehensive information regarding the study's purpose, the procedure for completing the questionnaire, and their right to withdraw at any time without any consequence. Subsequently, participants were required to indicate their consent to participate by completing the informed consent form.

After data was collected, researchers conducted data testing and analysis using IBM SPSS Statistic 27. Validity and reliability tests were performed to ensure the accuracy and consistency of the measurement items. Next, we conducted assumption tests, including normality, linearity, multicollinearity, and heteroskedasticity tests. Finally, regression analysis and mediation analysis using the Sobel test were performed to test the hypotheses.

3 Results and Discussion

3.1 Results

The results of the assumption test are as follows: Firstly, the normality test was carried out using One Sample Kolmogorov-Smirnov Test to assess the distribution of the research data. The results confirmed that the data were normally distributed, with $p > 0.05$ ($p = 0.18$). Secondly, the linearity test indicated a significant linear relationship between AI opportunity perception and WWB, with $F = 1.46$, $p = 0.17$. Thirdly, the multicollinearity test revealed no issue of multicollinearity, with VIF = 1 (VIF < 10) and Tolerance of 1 (Tolerance > 0.1). Lastly, the scatterplot results show no heteroskedasticity.

To test the hypothesis, we performed regression analysis. Table 2 shows AI opportunity perception is positively influenced towards WWB ($\beta = 0.70$, $p = 0.00$) and ILW ($\beta = 0.84$, $p = 0.00$). Then, ILW is positively influenced towards WWB ($\beta = 0.33$, $p = 0.00$). It implies that AI opportunity perception plays a role on Gen Z employees' WWB and ILW, also ILW plays a role on Gen Z employees' WWB. Hypotheses H1, H2, and H3 were thus verified.

Table 2. Regression analysis results

	F	*P*	R	R2	B	Beta
AI * WWB	77.96	0.00	0.55	0.30	0.70	0.55
AI * ILW	43.55	0.00	0.44	0.19	0.84	0.44
ILW * WWB	60.42	0.00	0.50	0.25	0.33	0.50

[a] Note: AI refers to artificial intelligence opportunity perception; WWB refers to workplace well-being; ILW refers to informal learning in the workplace

A simple linear regression test was also conducted on the variable ILW on WWB by controlling AI opportunity perception variable. The results showed the regression coefficient B = 0.215, $p < 0.001$, and SE = 0.044. Then, the regression coefficient value of the variable AI opportunity perception on WWB after controlling ILW variable is $c' = 0.519$, $p < 0.001$, and SE = 0.83.

Further hypothesis analysis, we used the Sobel test to test the mediating effect of ILW. The results show that ILW played a mediating role between AI opportunity perception and Gen Z employees' WWB with Z score = 3.93 ($Z > 1.96$) and $p = 0.00$ ($p < 0.001$), and it had a partial mediating effect ($p < 0.001$). It implies that AI opportunity perception directly influences Gen Z employees' WWB, but it also influences it indirectly through ILW. As such, hypothesis H4 was verified.

3.2 Discussion

Our results revealed that AI opportunity perception plays a significant role on Gen Z employees' workplace well-being (WWB). This finding aligns with the research by Menane and Belmourd [12], which highlights the significant and positive impact of AI on employees' WWB. When Generation Z employees have a favorable perception of AI opportunities, they tend to experience higher levels of WWB.

AI opportunity perception is also found to play a role on informal learning in the workplace (ILW). The higher the employees' awareness of the career advancement opportunities brought by AI, the more their engagement in ILW increases [19]. This indicates that Generation Z employees who see more opportunities in artificial intelligence (AI) are more likely to be motivated and active in pursuing self-directed learning and initiatives that help them adapt and thrive in a dynamic work environment. Thus, the AI opportunity perception significantly contributes to ILW among Generation Z employees.

Furthermore, ILW was found to play a role on Gen Z employees' WWB and played a mediating role between AI opportunity perception and Gen Z employees' WWB. This finding aligns with self-determination theory (SDT), which states that intrinsic motivation and individual well-being increase when basic psychological needs for autonomy, competence, and relatedness are met. The adoption of AI technology in the workplace enables employees to easily search for and learn job-related information both during and outside of work hours, thereby enhancing their digital competence [25]. Technological advancements supporting remote learning and work have increased employee autonomy [26], while social interaction and workplace relationships fulfil the need for

relatedness [27]. Thus, ILW meets the three psychological needs, enhancing the WWB of Generation Z employees.

The findings of this study have significant practical implications for industrial and organizational settings. To promote high workplace well-being (WWB), companies should implement policies that support the understanding and integration of AI as an opportunity. These policies can include initiatives such as creating an informal learning environment that encourages behavior reflection, self-directed learning, feedback seeking, and knowledge sharing [28]. Such an environment would not only help employees adapt to AI-driven changes but also foster continuous skill development and innovation.

From a managerial perspective, the findings suggest that leaders should actively promote a positive perception of AI opportunities. Managers can facilitate this by providing training and development programs that highlight the benefits of AI and demonstrate its potential to enhance job performance and career growth. This can reduce fears of job displacement and increase acceptance and enthusiasm for AI technologies. Furthermore, creating a relaxed and open work environment is crucial. Such an environment encourages employees to actively seek feedback from colleagues and supervisors, thereby enhancing their learning and performance [19]. Managers should focus on building a culture of trust and openness where employees feel comfortable sharing their experience and challenges related to AI adoption.

Future research should explore alternative mediating variables such as job crafting and job autonomy to gain a more comprehensive understanding of the role of AI opportunity perception on workplace well-being. Slemp [29] demonstrated that employees with high job crafting exhibit higher levels of WWB. Wan [30] emphasized that job autonomy is crucial as it enhances the sense of control in the workplace, mitigates negative emotions from job demands, promotes positive thinking, and ultimately enhances WWB. Including these variables in future studies could significantly contribute to understanding and improving workplace well-being.

4 Conclusion

The aim of the current study is to determine the role of AI opportunity perception on workplace well-being (WWB) and to examine whether informal learning in the workplace (ILW) mediates the role of AI opportunity perception on generation Z employees' WWB. The results from a survey of 177 Generation Z employees confirmed our proposed hypotheses. Furthermore, our study concludes that AI opportunity perception plays a role on Gen Z employees' WWB and ILW played a mediating role between AI opportunity perception and Gen Z employees' WWB. These findings underscore the importance of fostering a positive perception of AI opportunities and promoting informal learning to enhance employee well-being in the workplace.

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