

# The Influence of Fear of AI Replacement and Technology Readiness on Career Adaptability Among Generation Z: The Mediating Role of AI Literacy

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| Keywords                                                                                      | Abstract                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| AI literacy; career adaptability; fear of AI replacement; Generation Z; technology readiness. | The rapid advancement of Artificial Intelligence (AI) has transformed the nature of work and created new challenges for Generation Z, particularly regarding career uncertainty, technological disruption, and the need for adaptive competencies. While AI provides opportunities for improving productivity and innovation, concerns about job displacement may influence individuals' psychological readiness to face future career changes. This study aims to examine the influence of Fear of AI Replacement and Technology Readiness on Career Adaptability among Generation Z, with AI Literacy as a mediating variable. This research employed a quantitative approach using an explanatory research design. Data were collected through an online survey involving 250 Generation Z respondents in Indonesia who had experience using AI-based applications. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3. The results indicate that Fear of AI Replacement has a significant negative effect on AI Literacy and Career Adaptability, while Technology Readiness positively affects AI Literacy and Career Adaptability. Furthermore, AI Literacy has a significant positive influence on Career Adaptability and partially mediates the relationships between Fear of AI Replacement, Technology Readiness, and Career Adaptability. These findings highlight that AI Literacy serves as an essential adaptive competency that enables Generation Z to respond effectively to AI-driven workplace transformation. This study concludes that strengthening AI Literacy and technology readiness is crucial for developing a more adaptable and resilient future workforce in the era of artificial intelligence. |

## INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has become a major driver of global workforce transformation. Generative AI technologies, such as ChatGPT, Gemini, and Copilot, have enabled tasks that previously required human cognitive abilities to be performed more efficiently and at scale. AI has been widely adopted across various sectors, including administration, education, marketing, customer service, and organizational decision-making, creating both opportunities for productivity improvement and challenges for workforce sustainability (Forum, 2025).

The widespread adoption of AI has significantly reshaped labor market dynamics. The World Economic Forum (Forum, 2025) projects that by 2030 approximately 170 million new jobs will be created, while around 92 million existing jobs may be displaced due to automation and technological advancement. Moreover, nearly 39% of current

workforce skills are expected to change, highlighting the increasing importance of adaptability and continuous skill development in maintaining long-term career success.

These changes are particularly relevant for Generation Z, which is entering the labor market during a period of rapid digital transformation. Although this generation has grown up with digital technologies, it also faces considerable uncertainty regarding evolving skill requirements and the automation of entry-level jobs (Bankins et al., 2024). A global survey conducted by (PwC, 2024) found that 70% of CEOs expect generative AI to significantly transform how their companies create, deliver, and capture value within the next three years, highlighting its anticipated impact on business models and workforce competencies.

The Indonesian context provides a particularly important setting for examining these issues. According to the 2020 Population Census, Generation Z constitutes approximately 27.94% of Indonesia's total population, making it the largest generational cohort in the country (Statistik, 2021). At the same time, Indonesia is experiencing rapid digital transformation, characterized by widespread internet access, intensive use of digital media, and increasing adoption of artificial intelligence across education, business, and public services. As digital natives entering higher education and the workforce, Indonesian Generation Z is highly exposed to AI-enabled technologies and digital communication environments.

However, AI literacy extends beyond the ability to use AI tools; it also encompasses the ability to critically evaluate AI-generated information, understand algorithmic influences on communication, recognize ethical implications and potential biases, and use AI responsibly (United Nations Educational, 2024). Consequently, strengthening AI literacy alongside career adaptability is essential to enable Generation Z to navigate technological disruption and remain competitive in an AI-driven labor market. Therefore, Indonesia provides a highly relevant context for examining how fear of AI replacement, technology readiness, and AI literacy influence career adaptability among Generation Z.

Despite these opportunities, recent evidence suggests that AI literacy among young people remains uneven, particularly in terms of critically evaluating AI-generated information, understanding the ethical implications of AI, and using AI responsibly (United Nations Educational, 2024). Consequently, many young individuals may be more vulnerable to career uncertainty arising from technological disruption and evolving workforce demands. These conditions highlight the importance of developing AI literacy as a critical communication and digital competency, alongside career adaptability, to help Generation Z navigate AI-driven workplace changes. Therefore, Indonesia provides a highly relevant context for examining how fear of AI replacement, technology readiness, and AI literacy influence the career adaptability of Generation Z.

As Artificial Intelligence (AI) becomes increasingly integrated into everyday life, workplaces, and digital communication environments, the concept of literacy has expanded beyond traditional reading and writing skills to include digital, information, and AI literacy. AI literacy refers not only to an individual's ability to understand, evaluate, and effectively use AI technologies but also to critically assess AI-generated

information, recognize algorithmic influence, understand potential risks such as bias and misinformation, and engage responsibly with AI-mediated communication (Chiu, 2024; Long & Magerko, 2020; Ng et al., 2021). Therefore, AI literacy can be viewed as an essential digital communication competency that enables individuals to navigate AI-driven information ecosystems while understanding both the opportunities and risks associated with AI adoption.

Despite its potential benefits, the adoption of Artificial Intelligence (AI) may also lead to fear of AI replacement, defined as the perception that AI can substitute human labor and reduce future employment opportunities. Individuals who perceive AI as a threat tend to hold more pessimistic views regarding their career prospects and exhibit lower readiness to adapt to technological changes. Conversely, individuals with higher technology readiness are generally more open to innovation and more likely to perceive emerging technologies as opportunities for development rather than threats (Kumi et al., 2024).

In this context, career adaptability refers to psychosocial resources that enable individuals to cope with career-related tasks, transitions, and uncertainties, consisting of concern, control, curiosity, and confidence (Savickas, 2021). Career adaptability has been widely recognized as a key psychosocial resource that enables individuals to proactively manage career development, navigate career transitions, and respond effectively to dynamic and uncertain labor market conditions (Klehe et al., 2021). In an AI-driven labor market, career adaptability becomes increasingly important because individuals are expected to continuously update their competencies, respond to technological disruption, and identify new career opportunities.

The relationship between fear of AI replacement, technology readiness, and career adaptability is expected to be explained through AI literacy. Individuals with higher levels of AI literacy are better able to understand and utilize AI technologies effectively, critically evaluate AI-related narratives, and recognize opportunities for competence development rather than perceiving AI solely as a threat. As a result, AI literacy may help reduce negative perceptions toward AI while simultaneously enhancing individuals' ability to adapt to evolving career demands (Chiu, 2024).

Although research on artificial intelligence (AI) and employment has increased substantially in recent years, several research gaps remain. First, studies that simultaneously integrate fear of AI replacement and technology readiness as antecedents of career adaptability remain limited. Second, existing AI literacy research has primarily focused on educational and technological perspectives, while its role as a digital communication competency for navigating AI-related career uncertainty remains underexplored. Third, empirical evidence examining AI literacy as a mediating mechanism linking these variables is still scarce, particularly within the context of Generation Z in emerging economies such as Indonesia.

This study addresses these gaps by developing and testing an integrated model that explains how psychological perceptions of AI (fear of AI replacement) and individual readiness toward technology influence career adaptability through AI literacy. Drawing

on Career Construction Theory, this study positions AI literacy as a communication-oriented adaptive resource that enables individuals to understand, evaluate, and respond effectively to AI-driven workforce transformation. The novelty of this study lies not only in the simultaneous examination of these constructs within a single structural model but also in conceptualizing AI literacy as a key communication competency that explains how Generation Z adapts to AI-related career challenges.

Accordingly, this research contributes to the literature by extending the understanding of career adaptability in the digital era and providing empirical evidence from an emerging economy context. The findings are expected to offer practical implications for educators, organizations, and policymakers in designing strategies that strengthen AI literacy, enhance career adaptability, and prepare a more adaptive future workforce in the age of artificial intelligence.

## **METHOD**

### **Research Design**

This study employed a quantitative approach with an explanatory research design to examine the effects of Fear of AI Replacement and Technology Readiness on Career Adaptability among Generation Z, as well as the mediating role of AI Literacy. A quantitative approach was considered appropriate because it facilitates the objective measurement of latent constructs and enables hypothesis testing through statistical analysis.

The proposed research model specifies Fear of AI Replacement and Technology Readiness as exogenous variables, Career Adaptability as the endogenous variable, and AI Literacy as the mediating variable. The model assumes that perceptions of AI-driven job replacement and individuals' readiness to embrace emerging technologies influence Career Adaptability both directly and indirectly through AI Literacy.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3. PLS-SEM was selected because it is suitable for prediction-oriented research, enables the simultaneous estimation of multiple relationships among latent variables, and effectively assesses mediation effects while imposing minimal distributional assumptions on the data (Hair et al., 2022).

### **Operationalization of Variables**

This study examines four latent constructs: Fear of AI Replacement, Technology Readiness, AI Literacy, and Career Adaptability. The operational definitions, dimensions, and measurement references for each construct are presented in Table 1. The measurement items were adapted from previously validated instruments and modified to suit the context of AI adoption and career development among Generation Z in Indonesia.

**Table 1.** Operational Variables

| <b>Variable</b>                    | <b>Definition</b>                                                                                                                                             | <b>Dimensions</b>                                                                                                                |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Fear of AI Replacement (X1)</b> | An individual's perception that artificial intelligence (AI) may substitute human roles, skills, or employment opportunities in the future (Jo & Park, 2025). | Perceived job displacement, automation threat, technological substitution concerns, and employment insecurity (Jo & Park, 2025). |
| <b>Technology Readiness (X2)</b>   | An individual's readiness and willingness to embrace and utilize emerging technologies in personal and professional contexts (Kumi et al., 2024).             | Optimism, Innovativeness, Discomfort, Insecurity (Zhao et al., 2025).                                                            |
| <b>AI Literacy (M)</b>             | The ability to understand, evaluate, and effectively utilize Artificial Intelligence technologies in various contexts (Ng et al., 2021).                      | Know and Understand AI, Use and Apply AI, Evaluate and Create AI, AI Ethics (Ng et al., 2021).                                   |
| <b>Career Adaptability (Y)</b>     | Psychosocial resources that enable individuals to cope with career tasks, transitions, and changing work environments (Rudolph et al., 2023).                 | Concern, Control, Curiosity, and Confidence (Savickas, 2021)                                                                     |

*Source: Developed by the authors based on prior studies.*

As presented in Table 1, this study examines four latent variables: Fear of AI Replacement, Technology Readiness, AI Literacy, and Career Adaptability. The operationalization of these constructs is adapted from established and validated instruments in the existing literature to ensure conceptual validity and measurement reliability.

Fear of AI Replacement is defined as an individual's perception that artificial intelligence (AI) may substitute human roles, skills, or employment opportunities in the future (Jo & Park, 2025). The construct is operationalized through four dimensions: perceived job displacement, automation threat, technological substitution concerns, and employment insecurity (Jo & Park, 2025).

Technology Readiness is defined as an individual's readiness and willingness to embrace and utilize emerging technologies in personal and professional contexts (Kumi et al., 2024). It is operationalized through four dimensions: optimism, innovativeness, discomfort, and insecurity (Zhao et al., 2025).

AI Literacy follows the framework proposed by (Ng et al., 2021) and includes four dimensions: Know and Understand AI, Use and Apply AI, Evaluate and Create AI, and AI Ethics. Finally, career adaptability is conceptualized as psychosocial resources that enable individuals to manage career-related tasks, transitions, and uncertainties. This construct is measured through the four dimensions of the Career Adapt-Abilities Scale, namely concern, control, curiosity, and confidence, originally developed by (Savickas, 2021).

Although each construct is theoretically multidimensional, this study operationalized Fear of AI Replacement, Technology Readiness, AI Literacy, and Career Adaptability as first-order reflective constructs. The measurement items were adapted from validated instruments to represent the overall conceptual domain of each construct.

### **Population and Sample**

The target population comprised Indonesian Generation Z individuals, defined as those born between 1997 and 2012. This population was selected because Generation Z has grown up in a highly digitalized environment and is expected to have substantial exposure to AI technologies in educational, social, and professional contexts.

A purposive sampling technique was employed based on three inclusion criteria: (1) belonging to Generation Z, (2) residing in Indonesia, and (3) having experience using digital technologies or AI-based applications. A total of 250 valid responses were obtained and included in the final analysis. The sample size exceeded the minimum requirements recommended for PLS-SEM analysis and was considered sufficient to achieve adequate statistical power for estimating complex structural relationships and mediation effects (Hair et al., 2022).

### **Data Collection**

Primary data were collected through an online survey distributed via social media platforms and digital communication channels frequently used by Generation Z in Indonesia. The data collection process was conducted between May and July 2026.

Prior to completing the questionnaire, respondents were informed about the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Participation was entirely voluntary, and informed consent was obtained electronically before respondents proceeded with the survey.

This study adhered to established ethical principles for social science research. Respondents remained anonymous throughout the study, no personally identifiable information was collected, and all responses were used exclusively for academic purposes.

### **Common Method Bias Assessment**

Because all variables were collected using a self-administered questionnaire at a single point in time, the potential for common method bias (CMB) was considered. To assess this issue, collinearity diagnostics were evaluated using the Variance Inflation Factor (VIF). Following (Kock, 2015), VIF values below 3.3 indicate that common method bias is unlikely to pose a serious concern. The obtained VIF values were below the recommended threshold, indicating that common method bias was unlikely to threaten the validity of the findings.

### **Data Analysis Technique**

Data were analyzed using SmartPLS 3 by evaluating both the measurement model (outer model) and structural model (inner model). The measurement model assessment included convergent validity, discriminant validity, and reliability testing. Convergent validity was evaluated using outer loading values ( $\geq 0.70$ ) and Average Variance Extracted ( $AVE \geq 0.50$ ). Discriminant validity was assessed using the Fornell–Larcker

criterion and the Heterotrait–Monotrait Ratio (HTMT). Reliability was evaluated using Cronbach’s Alpha and Composite Reliability, with acceptable threshold values exceeding 0.70 (Hair et al., 2022).

The structural model was assessed by examining the coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and path coefficients. Hypothesis testing was performed using a bootstrapping procedure with 5,000 resamples. To evaluate the mediating role of AI Literacy, indirect effects were estimated using the bootstrapping approach.

To evaluate the mediating role of AI Literacy, indirect effects were estimated using the bootstrapping approach. Mediation was supported when the indirect effect was statistically significant, indicating that AI Literacy functioned as an explanatory mechanism linking Fear of AI Replacement and Technology Readiness to Career Adaptability among Generation Z.

## RESULTS AND DISCUSSION

### Respondent Characteristics

This study involved 250 respondents who belonged to Generation Z and met the study criteria, namely having experience using Artificial Intelligence (AI)-based applications. The respondents' characteristics were classified according to gender, age, highest educational attainment, current status, domicile, experience using AI, the AI application used most frequently, and the frequency of AI usage. A summary of the respondents' characteristics is presented in Table 1.

**Table 2.** Respondent Characteristics (n = 250)

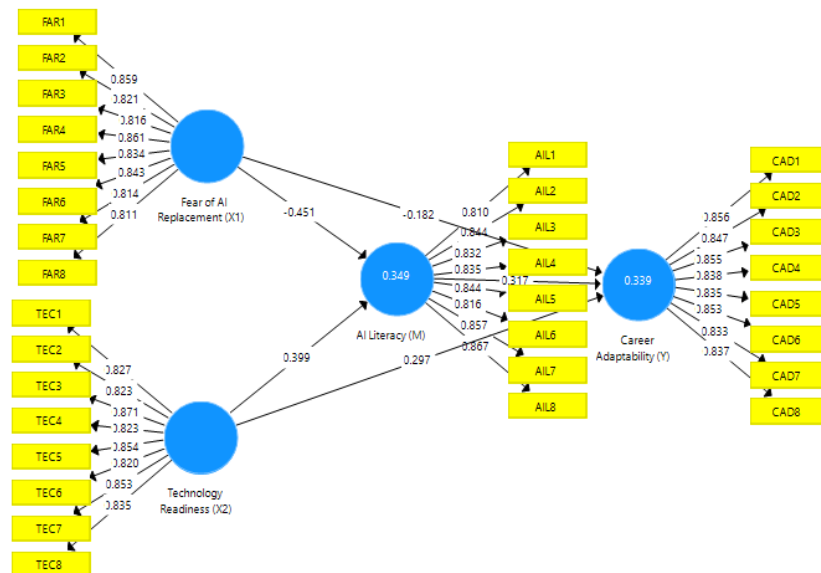
| <b>Characteristics</b>                     | <b>Dominant Category</b> | <b>n</b> | <b>%</b> |
|--------------------------------------------|--------------------------|----------|----------|
| <b>Gender</b>                              | Female                   | 140      | 56.0     |
| <b>Age</b>                                 | 25–28 years              | 120      | 48.0     |
| <b>Highest education</b>                   | Bachelor's degree        | 118      | 47.2     |
| <b>Current status</b>                      | Employed                 | 122      | 48.8     |
| <b>Experience using AI</b>                 | Yes                      | 248      | 99.2     |
| <b>Most frequently used AI application</b> | ChatGPT                  | 170      | 68.0     |
| <b>Frequency of AI use</b>                 | Occasionally             | 116      | 46.4     |

*Source: Processed primary data (2026).*

As shown in Table 2, the majority of respondents were female (56.0%), aged between 25 and 28 years (48.0%), held a bachelor's degree (47.2%), and were employed (48.8%). Almost all respondents had experience using AI-based applications (99.2%), with ChatGPT being the most frequently used application (68.0%). In addition, most respondents reported using AI occasionally (46.4%). These characteristics indicate that the respondents possessed sufficient experience with AI technologies, making them appropriate for achieving the objectives of this study.

## Measurement Model Evaluation

The measurement model was evaluated to ensure that the observed indicators validly and reliably represented their respective latent constructs before assessing the structural model. Following the PLS-SEM guidelines proposed by (Hair et al., 2022), the evaluation included convergent validity, discriminant validity, construct reliability, and collinearity assessments.



**Figure 1.** PLS-SEM Estimated Research Model  
Source: SmartPLS 3 output (2026).

## Convergent Validity and Reliability

The measurement model was evaluated to ensure that each construct satisfied the criteria for convergent validity and reliability. The results indicate that all indicators achieved outer loading values ranging from 0.810 to 0.871, thereby meeting the criterion for convergent validity, as all loadings exceeded the recommended threshold of 0.70 (Hair et al., 2022). Furthermore, the Average Variance Extracted (AVE) values ranged from 0.693 to 0.713, while Cronbach's Alpha and Composite Reliability ranged from 0.937 to 0.942 and 0.948 to 0.952, respectively. These findings demonstrate that all constructs are both valid and reliable and are therefore suitable for subsequent structural model analysis.

**Table 3.** Results of Convergent Validity and Reliability Assessment

| Variable                    | Outer Loading | AVE   | Cronbach's Alpha | Composite Reliability | Interpretation   |
|-----------------------------|---------------|-------|------------------|-----------------------|------------------|
| Fear of AI Replacement (X1) | 0.811–0.861   | 0.693 | 0.937            | 0.948                 | Valid & Reliable |
| Technology Readiness (X2)   | 0.820–0.871   | 0.703 | 0.940            | 0.950                 | Valid & Reliable |

| Variable                | Outer Loading | AVE   | Cronbach's Alpha | Composite Reliability | Interpretation   |
|-------------------------|---------------|-------|------------------|-----------------------|------------------|
| AI Literacy (M)         | 0.810–0.867   | 0.703 | 0.940            | 0.950                 | Valid & Reliable |
| Career Adaptability (Y) | 0.833–0.856   | 0.713 | 0.942            | 0.952                 | Valid & Reliable |

Source: SmartPLS 3 output (2026).

### Discriminant Validity and Collinearity

Discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT), whereas multicollinearity among the constructs was examined using the Variance Inflation Factor (VIF).

**Table 4.** Results of Discriminant Validity and Multicollinearity Assessment

| Assessment | Value       | Criterion | Result               |
|------------|-------------|-----------|----------------------|
| HTMT       | 0.087–0.538 | < 0.90    | Valid                |
| VIF        | 2.312–3.353 | < 5.00    | No multicollinearity |

Source: SmartPLS 3 output (2026).

As shown in Table 4, all HTMT values ranged from 0.087 to 0.538, which are below the recommended threshold of 0.90, indicating satisfactory discriminant validity among the constructs. In addition, the VIF values ranged from 2.312 to 3.353, remaining below the recommended threshold of 5.00. These results indicate that multicollinearity is not a concern, confirming that the structural model is appropriate for further analysis (Hair et al., 2022).

### Common Method Bias Assessment

All variables in this study were collected using a self-administered questionnaire completed by the respondents at a single point in time, which may introduce common method bias (CMB). Following (Kock, 2015), the potential presence of common method bias was assessed using the inner Variance Inflation Factor (VIF) with a recommended threshold of 3.3.

**Table 5.** Results of the Common Method Bias Assessment

| Construct Relationship                       | Inner VIF |
|----------------------------------------------|-----------|
| Fear of AI Replacement → AI Literacy         | 1.002     |
| Technology Readiness → AI Literacy           | 1.002     |
| AI Literacy → Career Adaptability            | 1.536     |
| Fear of AI Replacement → Career Adaptability | 1.314     |
| Technology Readiness → Career Adaptability   | 1.247     |

Source: SmartPLS 3 output (2026).

As shown in Table 5, the inner VIF values range from 1.002 to 1.536, all of which are well below the recommended threshold of 3.3. These findings suggest that collinearity

among the predictor constructs is low and that common method bias is unlikely to have materially influenced the study results (Kock, 2015).

### Structural Model Evaluation

#### Coefficient of Determination ( $R^2$ )

The coefficient of determination ( $R^2$ ) was evaluated to examine the explanatory power of the structural model in predicting the endogenous constructs. According to (Hair et al., 2022),  $R^2$  values of 0.75, 0.50, and 0.25 indicate substantial, moderate, and weak explanatory power, respectively.

**Table 6.** Coefficient of Determination ( $R^2$ )

| Endogenous Construct | $R^2$ | Category |
|----------------------|-------|----------|
| AI Literacy          | 0.349 | Moderate |
| Career Adaptability  | 0.339 | Moderate |

Source: SmartPLS 3 output (2026).

As presented in Table 6, the  $R^2$  value for AI Literacy is 0.349, indicating that Fear of AI Replacement and Technology Readiness jointly explain 34.9% of the variance in AI Literacy. Likewise, the  $R^2$  value for Career Adaptability is 0.339, suggesting that Fear of AI Replacement, Technology Readiness, and AI Literacy collectively explain 33.9% of the variance in Career Adaptability. Based on the criteria proposed by (Hair et al., 2022), both  $R^2$  values indicate a moderate level of explanatory power, suggesting that the proposed model provides a satisfactory explanation of the endogenous constructs.

#### Predictive Relevance ( $Q^2$ )

Predictive relevance was evaluated using the Stone–Geisser  $Q^2$  statistic to assess the predictive capability of the structural model. According to (Hair et al., 2022), a  $Q^2$  value greater than zero indicates that the model has predictive relevance for the endogenous constructs, whereas higher  $Q^2$  values reflect stronger predictive accuracy.

**Table 7.** Predictive Relevance ( $Q^2$ )

| Construct              | $Q^2$ | Interpretation                   |
|------------------------|-------|----------------------------------|
| AI Literacy            | 0.612 | Predictive relevance established |
| Career Adaptability    | 0.626 | Predictive relevance established |
| Fear of AI Replacement | 0.601 | Predictive relevance established |
| Technology Readiness   | 0.611 | Predictive relevance established |

Source: SmartPLS 3 output (2026).

The results indicate that all constructs achieved  $Q^2$  values greater than zero, ranging from 0.601 to 0.626. These findings demonstrate that the structural model possesses satisfactory predictive relevance and is capable of predicting the endogenous constructs effectively (Hair et al., 2022).

### Hypothesis Testing

Hypothesis testing was conducted using the bootstrapping procedure in SmartPLS 3. A hypothesis was considered supported when the t-statistic exceeded 1.96 and the p-value was less than 0.05 (Hair et al., 2022). The results of the direct effect hypothesis testing are presented in Table 8.

**Table 8.** Results of Direct Hypothesis Testing

| Hypothesis                                                 | $\beta$ | t      | p     | Decision  |
|------------------------------------------------------------|---------|--------|-------|-----------|
| H1: FAR $\rightarrow$ AI Literacy                          | -0.451  | 10.246 | 0.000 | Supported |
| H2: FAR $\rightarrow$ Career Adaptability                  | -0.182  | 2.978  | 0.003 | Supported |
| H3: Technology Readiness $\rightarrow$ AI Literacy         | 0.399   | 8.158  | 0.000 | Supported |
| H4: Technology Readiness $\rightarrow$ Career Adaptability | 0.297   | 4.942  | 0.000 | Supported |
| H5: AI Literacy $\rightarrow$ Career Adaptability          | 0.317   | 4.685  | 0.000 | Supported |

Source: SmartPLS 3 output (2026).

As presented in Table 8, all direct effects yielded t-statistics greater than 1.96 and p-values below 0.05. These findings indicate that all direct hypotheses (H1–H5) are supported. Fear of AI Replacement has a significant negative effect on both AI Literacy and Career Adaptability, whereas Technology Readiness has a significant positive effect on AI Literacy and Career Adaptability. Furthermore, AI Literacy exerts a significant positive effect on Career Adaptability.

### Mediation Effect

The mediation analysis was performed using the bootstrapping procedure based on the specific indirect effects in SmartPLS 3. The results are presented in Table 9.

**Table 9.** Results of the Mediation Effect Analysis

| Hypothesis                                                                             | $\beta$ | t     | p     | Decision  |
|----------------------------------------------------------------------------------------|---------|-------|-------|-----------|
| H6: Fear of AI Replacement $\rightarrow$ AI Literacy $\rightarrow$ Career Adaptability | -0.143  | 4.035 | 0.000 | Supported |
| H7: Technology Readiness $\rightarrow$ AI Literacy $\rightarrow$ Career Adaptability   | 0.127   | 3.843 | 0.000 | Supported |

Source: SmartPLS 3 output (2026).

As shown in Table 9, both indirect effects produced t-statistics greater than 1.96 and p-values below 0.05. These results indicate that AI Literacy significantly mediates the relationship between Fear of AI Replacement and Career Adaptability, as well as the relationship between Technology Readiness and Career Adaptability. Since both the direct and indirect effects are statistically significant, AI Literacy functions as a partial

mediator in both relationships. These findings suggest that AI Literacy serves as an underlying mechanism through which Fear of AI Replacement and Technology Readiness influence Career Adaptability among Generation Z.

#### **Effect of Fear of AI Replacement on AI Literacy**

The findings indicate that Fear of AI Replacement has a significant negative effect on AI Literacy. This suggests that the greater an individual's concern about being replaced by artificial intelligence, the lower their ability to understand, utilize, and critically evaluate AI technologies. According to Career Construction Theory, individuals' perceptions of environmental threats can influence their capacity to develop the adaptive resources required to cope with career-related changes. In the context of this study, fear of AI discourages individuals from actively engaging in technology-related learning, thereby hindering the development of AI Literacy. These findings are consistent with those reported by (Wang et al., 2023) and (Jo & Park, 2025), who found that perceiving AI as a threat reduces individuals' motivation to develop AI-related competencies.

#### **Effect of Technology Readiness on AI Literacy**

Technology Readiness was found to have a significant positive effect on AI Literacy. This finding suggests that individuals who are more willing and prepared to embrace emerging technologies are more likely to acquire the knowledge and competencies required to understand and effectively utilize AI technologies. According to (Kumi et al., 2024), technology readiness reflects an individual's readiness and willingness to adopt emerging technologies across both personal and professional contexts. Such readiness encourages continuous engagement with digital technologies, thereby fostering the development of AI Literacy. From the perspective of Career Construction Theory, technology readiness represents an important personal resource that facilitates the development of adaptive competencies, enabling individuals to respond more effectively to technological change. Consequently, individuals with higher levels of Technology Readiness are better positioned to develop AI-related knowledge and skills. These findings are consistent with (Kumi et al., 2024), who demonstrated that technology readiness significantly enhances individuals' ability to understand and effectively utilize AI technologies.

#### **Effect of AI Literacy on Career Adaptability**

AI Literacy has a significant positive effect on Career Adaptability. This finding suggests that a solid understanding of AI concepts, functions, and applications enables individuals to adapt more effectively to the changing demands of the digital workplace. Career Construction Theory proposes that career adaptability is influenced by the psychosocial resources individuals possess when facing career transitions and workplace changes. AI Literacy represents one of the key competencies that enables individuals to utilize technology effectively, make informed decisions, and better prepare for the evolving labor market. These findings support those of (Ng et al., 2021), (Chiu, 2024), and (Bankins et al., 2024), who emphasized that AI Literacy is an essential competency for enhancing career readiness and adaptability in the era of artificial intelligence.

### **Effect of Fear of AI Replacement on Career Adaptability**

The findings indicate that Fear of AI Replacement has a significant negative effect on Career Adaptability. This suggests that increasing concerns about being replaced by artificial intelligence reduce individuals' ability to cope with career-related changes. According to Career Construction Theory, perceptions of external threats can weaken individuals' confidence and readiness to respond effectively to changes in the work environment. As a result, individuals become less willing to develop new competencies and take advantage of opportunities arising from digital transformation. These findings are consistent with those of (Jo & Park, 2025), who reported that perceived threats associated with AI development can hinder individuals' readiness to adapt to career changes.

### **Effect of Technology Readiness on Career Adaptability**

Technology Readiness has a significant positive effect on Career Adaptability. This finding indicates that individuals with a higher level of technology readiness are more capable of adapting to changes in the work environment. This capability is reflected in their willingness to acquire new skills, embrace technological innovations, and utilize digital technologies to support their career development. Career Construction Theory suggests that personal resources play a fundamental role in developing career adaptability. Therefore, individuals with higher levels of Technology Readiness are better equipped to respond to the dynamic nature of today's workplace. These findings are consistent with (Kumi et al., 2024), who demonstrated that technology readiness enhances individuals' ability to adapt to changes driven by digital transformation.

### **The Mediating Role of AI Literacy**

The findings reveal that AI Literacy significantly mediates the relationship between Fear of AI Replacement and Career Adaptability, as well as the relationship between Technology Readiness and Career Adaptability. From the perspective of Career Construction Theory, career adaptability is influenced not only by environmental factors and personal resources but also by the development of adaptive competencies. In this study, AI Literacy serves as the underlying mechanism through which these two antecedent variables affect Career Adaptability.

The results suggest that concerns about job displacement due to artificial intelligence may reduce individuals' career adaptability because such concerns are associated with lower levels of AI Literacy. Conversely, individuals with higher levels of Technology Readiness tend to possess greater AI Literacy, enabling them to adapt more effectively to career-related changes. Since both the direct and indirect effects are statistically significant, AI Literacy functions as a partial mediator. These findings support previous studies by (Ng et al., 2021) and (Chiu, 2024) which emphasize that AI Literacy is a strategic competency that enables individuals to cope with technological disruption and enhance career readiness in the era of artificial intelligence.

### **Limitations and Recommendations**

This study has several limitations. First, the sample consisted exclusively of Generation Z respondents, limiting the generalizability of the findings to other age

groups. Second, the coefficient of determination indicates that Career Adaptability is also influenced by other factors not included in the proposed research model. Therefore, future studies are encouraged to involve more diverse participant groups, adopt longitudinal research designs, and incorporate additional variables such as digital resilience, self-efficacy, or lifelong learning to provide a more comprehensive understanding of the factors influencing Career Adaptability in the era of artificial intelligence.

## CONCLUSION

This study concludes that career adaptability among Generation Z in the era of artificial intelligence is shaped by both psychological perceptions toward AI and individual readiness to embrace technological change. Fear of AI Replacement was found to significantly reduce AI Literacy and Career Adaptability, indicating that excessive concerns regarding technological displacement may discourage individuals from developing AI-related competencies and responding proactively to career transitions. Conversely, Technology Readiness positively influences AI Literacy and Career Adaptability, demonstrating that individuals who are more open, innovative, and prepared to adopt emerging technologies are better equipped to develop adaptive career resources. Furthermore, AI Literacy plays a significant role in enhancing Career Adaptability and functions as a partial mediator in the relationships between Fear of AI Replacement, Technology Readiness, and Career Adaptability. These findings emphasize that AI Literacy is not merely a technical capability but also an essential adaptive competency that enables Generation Z to understand, evaluate, and utilize AI effectively while navigating uncertainty in the future labor market. Future research is encouraged to expand the scope of this study by involving respondents from different generational groups, occupational backgrounds, and geographical contexts to improve the generalizability of the findings. Since the current model explains a moderate proportion of Career Adaptability variance, further studies may incorporate additional variables such as digital resilience, technology self-efficacy, lifelong learning orientation, psychological capital, or organizational support to provide a more comprehensive understanding of career adaptation in AI-driven environments. In addition, longitudinal research designs are recommended to examine how individuals' perceptions of AI, technology readiness, and AI Literacy develop over time as AI adoption becomes increasingly integrated into workplaces and education systems. Qualitative approaches may also provide deeper insights into how individuals experience AI-related career uncertainty and develop strategies for maintaining career competitiveness in the future of work.

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