



The Mediating Role of AI Anxiety in the Relationship Between AI Literacy and Career Decidedness*

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ABSTRACT

The main purpose in conducting this study is to investigate whether artificial intelligence anxiety has a mediating role in the effect of career decidedness on artificial intelligence literacy. This cross-sectional study, in which the correlational and predictive model was used, is noteworthy because it is probably the first study in the literature in terms of the scales used in it and the model developed. The study was conducted with 512 university students of the digital generation. Data were collected using the Artificial Intelligence Anxiety Scale, Artificial Intelligence Literacy Scale, and Career Decidedness Scale. SPSS and Jamovi software programs were used in the analysis of the data. The participating students obtained high mean scores from the Artificial Intelligence Literacy Scale, and Career Decidedness Scale, and a moderate mean score from the Artificial Intelligence Anxiety Scale. The results of the correlation analysis revealed that there was a negative and significant relationship between the scores obtained from the Artificial Intelligence Literacy Scale and Artificial Intelligence Anxiety Scale, a positive and significant relationship between the scores obtained from the Artificial Intelligence Literacy Scale and Career Decidedness Scale and a negative and significant relationship between the scores obtained from the Artificial Intelligence Anxiety Scale and Career Decidedness Scale. According to the results of the study, career decidedness had a direct and significant effect on artificial intelligence literacy, and artificial intelligence anxiety did have a partial mediating role in this relationship.

Keywords: Digital generation, artificial intelligence anxiety, artificial intelligence literacy, career decidedness, mediating role

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1. INTRODUCTION

The concept of generation signifies not only biological continuity but also societal change and technological transformations. In this context, Generation Z, born after 2000 and referred to as the digital generation, stands out as a generation deeply integrated with technology, actively utilizing digital tools (Fortunati et al., 2019). Particularly, their relationship with education differs from previous generations due to their natural interaction with technology. In recent years, rapidly advancing Artificial Intelligence (AI) technologies have further deepened this difference, reshaping learning processes for the digital generation (Bingham et al., 2018).

AI contributes to education in various areas, from access to information to personalized learning experiences; tools like ChatGPT accelerate this process (Huang et al., 2021). However, this generation's affinity for technology is not homogeneous, especially in their perspectives towards relatively new and complex systems like AI. Therefore, examining university students' anxieties and literacy levels related to AI and how these relate to their career aspirations emerges as a significant research area in today's higher education policies and youths' vocational orientations.

* This research was derived from the master's thesis conducted by the first author under the supervision of the second author.

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1.1. AI Literacy in the Digital Generation

Although AI literacy is considered as a sub-branch of digital and technological literacy, it is a more important concept due to its potential (Çelebi et al., 2023). The concept of AI literacy, first used in the literature in 2022, refers to the ability to understand and evaluate basic concepts such as machine learning, deep learning, artificial neural networks, natural language processing and computer vision (Laupichler et al., 2023). According to Polatgil & Güler (2023), AI literacy refers to individuals' ability to recognize, use and evaluate AI products, but does not require technical knowledge at the expert level. Therefore, what is important for AI literacy is individuals' being able to use AI-based technologies consciously and effectively.

AI literacy plays a critical role in influencing students' academic experiences and future opportunities in higher education (Toker-Gökçe et al., 2025). In particular, university students are an important target audience for AI education because they need to acquire the necessary skills to use AI effectively in their professional lives, which encourages them to be more conscious and determined about their careers (Southworth et al., 2023). Such literacy is valid not only for students studying in computer science-related departments, but also for students in all disciplines, because they are likely to use AI tools regardless of the sector they will work in after they graduate. Therefore, many academic programs at universities have added courses on AI to their curricula (Hornberger et al., 2023). Thus, such initiatives are valuable since they reveal why the AI literacy levels of the digital generation should be improved.

1.2. Career Decidedness in the Digital Generation

Career can be defined as individuals' advancing in their profession and rising in rank in their institution in line with the roles they have undertaken throughout their working life, the experiences they have gained, and the knowledge, skills and motivation they have (Akçakanat & Uzunbacak, 2019). Career decidedness refers to the degree of confidence and clarity that individuals feel about the career path they want to follow and develop after graduation (Li et al., 2019).

A significant portion of university students has trouble in making career choices. For students who do not have an obvious career orientation, getting prepared for their future professional lives can be a challenging process. Therefore, the career decidedness that students develop during their education process is of great importance for their later life periods (Yaşar & Sunay, 2020). Individuals who have a more obvious orientation regarding their career goals tend to increase their job and life satisfaction by utilizing opportunities in their chosen field more effectively (Li et al., 2019). In this context, it can be stated that students who demonstrate stronger determination in their career journey are more likely to acquire AI literacy competencies specific to their field of study, to experience less anxiety related to AI, and to have a greater potential to turn this technology into a career opportunity in their future professional lives.

1.3. AI Anxiety in the Digital Generation

AI anxiety can be defined as *excessive fear resulting from changes created by AI technologies in personal or social life* (Kaya et al., 2024). With the rapid development of AI, individuals have increasingly begun to express their concerns about AI. Some academics and experts have the opinion that AI-based automation technologies will affect the labor market adversely (Wang & Wang, 2022). Within this context, the McKinsey Global Institute's report (2017) is remarkable but also worrying. According to this report, it is predicted that 400 million to 800 million employees will be unemployed by 2030 due to the widespread use of AI-based technologies. In addition, the report, in which the fact that all employees will need to adapt to working with increasingly powerful machines is stated, suggests that individuals should be prepared in accordance with future employment needs. Therefore, it has become inevitable to gain all these in-demand competencies, closely follow and learn current technologies, and focus on career goals in line with market expectations, which has negative effects on the anxiety levels of young adults (Wang & Wang, 2022). For instance, Almia et al. (2022) draws attention to the fact that AI anxiety, a topic that has not yet reached research saturation, will be addressed significantly in the near future, especially in the digital generation.

1.4. Objective of the Study, Hypothesis Development, and Creation of a Research Model

The present study was aimed at investigating whether AI anxiety plays a mediating role in the effect of career decidedness on AI literacy in the digital generation. Thus, direct and indirect relationships between the variables of the study were analyzed theoretically, and hypotheses were developed and the research model was created. The originality of this study lies in its integrated examination of career decidedness, AI anxiety, and AI literacy within a single structural model. While previous research has analyzed these constructs in isolation, this study fills a critical gap by identifying the mediating role of AI anxiety among the digital generation. Thus, it offers a novel theoretical contribution by clarifying how professional certainty reduces technological fears and enhances digital competency.

The theoretical foundation of this study is built upon Super's Life-Span, Life-Space Theory (1980), Deci & Ryan's Self-Determination Theory (2000), and Davis's Technology Acceptance Model (1989). These theories have been employed to explain the relationships between career development, attitudes toward technology, and psychological factors among the digital generation. Super (1980) associated career development with a series of lifelong decisions and emphasized that individuals who set clear career goals are more inclined to engage in activities that develop their professional skills.

Individuals with strong career decidedness are more likely to invest cognitively in adapting to current technological advancements (Savickas, 2002). Furthermore, according to the Self-Determination Theory (Deci & Ryan, 2000), intrinsic motivation encourages learning-oriented behaviors. In summary, Super's (1980) theory defines career development as the implementation of self-concept into professional roles. In this context, career decidedness reflects an individual's vocational clarity. For the digital generation, this clarity acts as a psychological buffer that reduces the perceived threat of new technologies, thereby lowering AI anxiety. Consequently, reduced anxiety facilitates better engagement with AI tools, ultimately enhancing AI literacy. In this context, a strong sense of career decidedness and clarity may enhance literacy in strategic domains such as AI. Accordingly, the first hypothesis of the study is formulated as follows:

H1: Career decidedness of the digital generation positively and significantly affects AI literacy.

Individuals with a high level of career decidedness are more likely to perceive future occupational transformations as opportunities rather than threats (Hirschi, 2013). Being prepared for changes brought by AI in the workplace can reduce young individuals' uncertainty perceptions and anxiety levels (Lent et al., 1994). Those with high self-efficacy are less likely to perceive new technologies as threatening (Bandura, 1977). In this regard, strong career decidedness may transform psychological responses such as AI-related anxiety in a positive direction. Accordingly, the second hypothesis of the study is formulated as follows:

H2: Career decidedness of the digital generation negatively and significantly affects AI anxiety.

AI anxiety may serve as a cognitive and emotional barrier that hampers young adults' learning and adaptation processes related to emerging technologies (Shin, 2021). Technological anxiety can diminish individuals' willingness to interact with technology and limit their efforts to acquire information (Nomura et al., 2006). Therefore, as individuals' anxiety regarding AI increases, their willingness to learn about this technology may decrease, which may result in lower levels of AI literacy. Accordingly, the third hypothesis of the study is formulated as follows:

H3: AI anxiety of the digital generation negatively and significantly affects AI literacy.

When individuals have clear goals regarding their careers, they are more likely to develop a desire to acquire the knowledge and skills necessary for professional growth. At this point, Self-Determination Theory (Deci & Ryan, 2000) argues that internal motivation sources such as career decidedness support learning and developmental behaviors. Thus, individuals with high career decidedness are expected to be more willing and prepared to develop future-oriented competencies such as AI literacy. However, this relationship may vary depending on how individuals cognitively evaluate AI. According to the Cognitive Appraisal Theory (Lazarus & Folkman, 1984), individuals assess technological innovations either as opportunities or threats. For those who perceive AI as a threat, motivation to acquire knowledge and engage with technology may decline. In this framework, the Social Cognitive Career Theory (Lent et al., 1994) emphasizes that career-related behaviors are shaped not only by goals but also by psychological barriers. Therefore, AI anxiety can be considered a mediating psychological mechanism that weakens the positive influence of career decidedness on learning motivation. Accordingly, the final hypothesis of the study is formulated as follows:

H4: AI anxiety mediates the relationship between career decidedness and AI literacy.

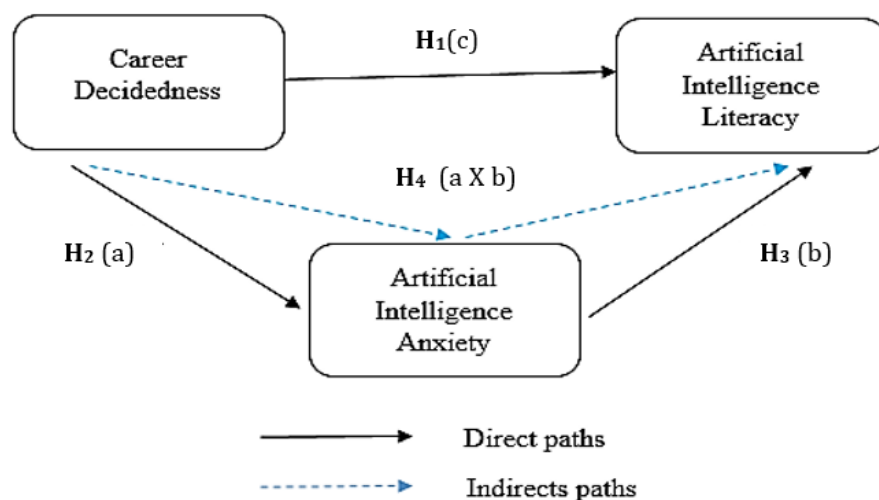


Figure 1. Research model

2. METHODOLOGY

In this cross-sectional study in which correlational and predictive models were used, the mediating role of AI anxiety in the relationship between AI literacy and career decidedness was addressed. In this model, the purpose is to determine the relationships between variables and to predict the effect of one variable on another (Saylam & Sapancı, 2025).

2.1. Participants

In the study, 512 students receiving undergraduate education at a state university were included. Their being in the digital generation was the precondition to be included in the study. The convenience sampling method was used in the study. In this method, the researcher starts with the most accessible participants and continues to collect data until the specified sample size is reached. In this process, individuals or groups that will be the most efficient in terms of time and resources are preferred (Cohen et al., 2002).

The mean age of the students participating in the study was 21.12 ± 1.80 years. Of them, 59.2% were female, 40.8% were male. 16.8% were first-year students, 30.9% were second-year students, 28.5% were third-year students, 23.8% were fourth-year and above students, 82% stated that they had not taken any courses related to AI previously, and 85% stated that there was no course related to this in their current curriculum, 40.2% were science students, 37.6% were health sciences students, and 22.2% were social science students. While 84.2% preferred the major of their own free will, 15.8% did not. 93% of the participants stated that they had previously heard of ChatGPT or similar AI programs, and 86.7% reported having used them. Additionally, it was found that 59.8% of the participants follow news and developments related to AI on the internet. Although 71.6% of the participants stated that they do not see AI as an obstacle to their careers, 68.5% expressed the view that AI will lead to unemployment in the near future (Table 1).

Table 1.
Descriptive Characteristics of the Participants

Characteristics	Groups	f	%
Age ($\bar{x}$: 21.12 ± 1.80)	17-21	307	60.0
	22-25	205	40.0
Gender	Female	303	59.2
	Male	209	40.8
Class Level	1st Year	86	16.8
	2nd Year	158	30.9
	3rd Year	146	28.5
	4th Year and above	122	23.8
Major	Science	206	40.2
	Health Sciences	193	37.6
	Social Sciences	113	22.2
Preference of Choice	By own free will	431	84.2
	Not by free will	81	15.8
Previous AI Course	No	420	82.0
	Yes	92	18.0
AI in Current Curriculum	No	435	85.0
	Yes	77	15.0
Heard of ChatGPT or similar	Yes	476	93.0
	No	36	7.0
Used ChatGPT or similar	Yes	444	86.7
	No	68	13.3
Following AI News on Internet	Yes	306	59.8
	No	206	40.2
AI as an Obstacle to Career	No	367	71.6
	Yes	145	28.4
AI will lead to unemployment	Yes	351	68.5
	No	161	31.5

2.2. Data Collection Method and Tools

In the study, the face-to-face survey technique was used as the data collection method. Data were collected between February 17, 2025 and February 28, 2025. The AI Literacy Scale, AI Anxiety Scale and Career Decidedness Scale whose validity and reliability were tested were used to collect the data.

2.2.1. AI literacy scale

The scale was developed by Wang et al. (2023). The validity and reliability study of the Turkish version of the scale was conducted by Polatgil & Güler (2023). The scale consists of 12 items and the following 4 dimensions: "Awareness", "Use", "Evaluation" and "Ethics". Responses given to the items are rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha internal reliability coefficient of the Turkish version of the scale was 0.939. For the current study, the Cronbach's alpha was calculated as 0.83. Of the items, 2, 5 and 11 are reverse scored. High scores on this scale indicate a high level of AI literacy, reflecting the individual's proficiency in the field. Specifically, elevated scores signify that the individual possesses strong awareness of AI, the ability to use AI tools effectively, the capacity to evaluate AI content critically, and a solid understanding of AI ethics.

2.2.2. AI anxiety scale

The scale was developed by Wang & Wang (2022) but it was published in 2022. The validity and reliability study of the Turkish version of the scale was conducted by Akkaya et al. (2021). The scale consists of 16 items and the following 4 dimensions: "Learning", "Job Replacement", "Sociotechnical Blindness" and "AI Configuration". Responses given to the items are rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha internal reliability coefficient was 0.960 in Wang and Wang's study and 0.940 in the Turkish version of the scale developed by Akkaya et al. For the current study, the Cronbach's alpha was calculated as 0.91. No items in the scale are reverse scored. Specifically, high scores indicate that the individual perceives AI as a threat in terms of learning difficulties, potential job displacement, lack of sociotechnical transparency, and the general configuration of AI systems. Consequently, elevated scores represent an overall apprehension toward AI-driven changes in the future workforce.

2.2.3. Career decidedness scale

The scale was developed by Lounsbury et al. (1999). The validity and reliability study of the Turkish version of the scale was conducted by Akçakanat & Uzunbacak (2019). The unidimensional scale consists of six items. Responses given to the items are rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha internal reliability coefficient was 0.960 in Lounsbury et al.'s study and 0.940 in the Turkish version of the scale developed by Akçakanat and Uzunbacak. For the current study, the Cronbach's alpha was calculated as 0.83. Of the items, 2, 5 and 6 are reverse scored. Higher total scores on the scale indicate that the individual has a clear, firm, and stable commitment to a specific career path with minimal indecision. Conversely, lower scores reflect a lack of professional goals or significant ambiguity regarding career preferences.

In addition to these scales, the participants were administered a questionnaire aimed at identifying their descriptive characteristics such as age, sex, year at school, field of education, whether they preferred the department of their own free will, whether they had received training on AI, and whether there were courses on AI in their curriculum.

2.3. Data Analysis

In the analysis of the data, the IBM SPSS Version.26 and Jamovi version 2.6.23 statistical software programs were used. In order to test the construct validity of the scales, the confirmatory factor analysis was performed. To test their reliability, Cronbach's alpha coefficients were determined. In confirmatory factor analysis, a previously determined hypothesis, theory or model regarding the relationship between variables should be tested and it is one of the basic methods used in testing construct validity (Tabachnick et al., 2007). In the present study, descriptive statistics, normality, validity, reliability and Pearson correlation analyses were performed. Jamovi's MedMod application was used to test the mediation hypothesis. Confidence interval values were calculated by repeating Bootstrap 5000 times regarding the significance of the mediation effect. In the analysis of the findings obtained, 95% confidence interval and $p < 0.05$ statistical significance level were taken as basis.

2.4. Validity of the Data Collection Tools

In the present study, scales whose factor structures were previously determined were used. Therefore, confirmatory factor analysis was applied to evaluate the construct validity of the scales (Meydan & Şeşen, 2015). The chi-square/degree of freedom (χ^2/df), CFI, GFI, NFI and RMSEA goodness of fit indices were assessed for construct validity. Since the AI Anxiety Scale and AI Literacy Scale had a multidimensional structure, they were evaluated with the first-level confirmatory factor analysis; however, the Career Decidedness Scale, which has a unidimensional structure, was evaluated with unrelated-level

confirmatory factor analysis. The confirmatory factor analysis-related goodness of fit values for the scales are presented in Table 2.

Table 2.

Confirmatory Factor Analysis-Related Goodness of Fit Values

Variables	χ^2/df	CFI	GFI	NFI	RMSEA
AI Literacy Scale	1.582	0.985	0.979	0.961	0.034
AI Anxiety Scale	2.110	0.980	0.961	0.964	0.047
Career Decidedness Scale	2.753	0.987	0.987	0.981	0.049
Goodness of Fit Values *	≤ 3	≥ 0.95	≥ 0.95	≥ 0.95	≤ 0.05

* Schermelleh-Engel et al., 2003; Hair et al., 2010; Kline, 2011

3. FINDINGS

As indicated in Table 3, the participating students had high levels of AI literacy (3.81 ± 0.61) and career decidedness (3.52 ± 0.87), and a moderate level of AI anxiety (2.93 ± 0.76). As stated by Tabachnick et al. (2007), if the kurtosis and skewness values are within the range of ± 1 , the data are normally distributed. Based on Tabachnick et al.'s statement, the variables were normally distributed in the present study; thus, parametric tests were used. The Cronbach's internal reliability coefficients of the variables ranged between 0.83 and 0.91. The results of the correlation analysis demonstrated that there were significant relationships between the variables at the levels of $p < 0.01$ and $p < 0.05$. There was a negative and significant relationship between the AI Literacy Scale and the AI Anxiety Scale ($r = -0.30$; $p < 0.01$), a positive and significant relationship between the AI Literacy Scale and the Career Decidedness Scale ($r = 0.27$; $p < 0.01$), and a negative and significant relationship between the AI Anxiety Scale and the Career Decidedness Scale ($r = -0.11$; $p < 0.05$).

Table 3.

Descriptive Variables and Correlation Values

Variables	$\bar{x}^{\#}$	$\pm$	Kurtosis	Skewness	Cronbach's α	(2)	(3)
AI Literacy (1)	3.81	0.61	-0.38	0.55	0.83	-0.30**	0.27**
AI Anxiety (2)	2.93	0.76	-0.37	0.06	0.91		-0.11*
Career Decidedness (3)	3.52	0.87	-0.23	-0.20	0.83		

1.00-1.80: Very Low, 1.81-2.60: Low, 2.61-3.40: Moderate, 3.41-4.20: High, 4.21-5.00: Very High

* $p < 0.005$; ** $p < 0.01$; $\bar{x}$: Mean; $\pm$: Standard Deviation

3.1. Findings Related to the Hypothesis Tests

In line with the purpose of the research, path analysis was performed to test the hypotheses developed in accordance with the literature. In the model, in the analysis, AI literacy was a dependent variable, career decidedness was an independent variable, and AI anxiety was a mediator variable. The analyses were conducted with 5000 Bootstrap method at a confidence interval of 95%. As seen in Table 4, career decidedness has a significant and positive effect on AI literacy ($\beta = 0.160$; $p < 0.01$), while it has a significant and negative effect on AI anxiety ($\beta = -0.102$; $p < 0.05$). Furthermore, AI anxiety has a significant and negative effect on AI literacy ($\beta = -0.204$; $p < 0.05$). Based on these findings, it can be concluded that H_1 , H_2 , and H_3 are supported.

Table 4.

Results of Path Analysis

Relationships Between the Variables		Labels	β	Standard Error	95% Confidence Interval		z	p	Result
					Lower	Upper			
Career Decidedness	→ AI Anxiety	a	-0.102	0.047	-0.197	-0.010	-2.20	0.028*	H_2 : Supported

AI Anxiety	→ AI Literacy	b	-0.204	0.035	-0.272	-0.134	-	5.87	0.000**	H ₃ : Supported
Career Decidedness	→ AI Literacy	c	0.160	0.032	0.100	0.225	5.05	0.000**	H ₁ : Supported	

*p<0.05; **p<0.01

The results of the mediation analysis conducted to determine whether AI anxiety has a mediating effect on the relationship between career decidedness and AI literacy are presented in Table 5. The direct path from career decidedness to AI literacy was found to be significant and positive ($\beta = 0.160$; $p < 0.01$). Additionally, the indirect path from AI anxiety to AI literacy was also found to be statistically significant ($\beta = 0.021$; $p < 0.05$). In other words, these results indicate that AI anxiety partially mediates the relationship between career decidedness and AI literacy. Although the p-values for both paths are significant, the β coefficient of the direct path being higher than that of the indirect path indicates a partial mediation relationship between the variables. Indeed, the mediation percentages confirm this: the direct effect accounts for 88.5% of the total effect, while the indirect effect accounts for 11.5%, confirming this partial mediation. Based on these findings, it can be concluded that H₄ is supported.

Table 5.
Results of the Mediation Analysis

95% Confidence Interval								
Effect	Label	β	Standard Error	Lower	Upper	Z	p	% Mediation
Indirect	a × b	0.021	0.009	0.002	0.042	2.10	0.036*	11.5
Direct	c	0.160	0.032	0.100	0.225	5.05	0.000**	88.5
Total	c + a × b	0.181	0.034	0.116	0.250	5.35	0.000**	100.0
Career Decidedness ---> AI Anxiety ---> AI Literacy						H ₄ : Supported		

The findings indicating a partial mediating role of AI anxiety in the effect of career decidedness on AI literacy can also be interpreted through the diagram presented in Figure 2. For a mediating effect to be established between the variables, the relationships in all direct and indirect paths must be statistically significant, and the lower and upper bounds of the confidence intervals for the variables should not include zero. Based on this, an evaluation of Figure 2 reveals that the β value for the direct effect is 0.160 [lower: 0.100; upper: 0.225], for the total effect is 0.181 [lower: 0.116; upper: 0.250], and for the indirect effect is 0.021 [lower: 0.002; upper: 0.042]. Since the confidence intervals do not contain zero, the effects are considered statistically significant.

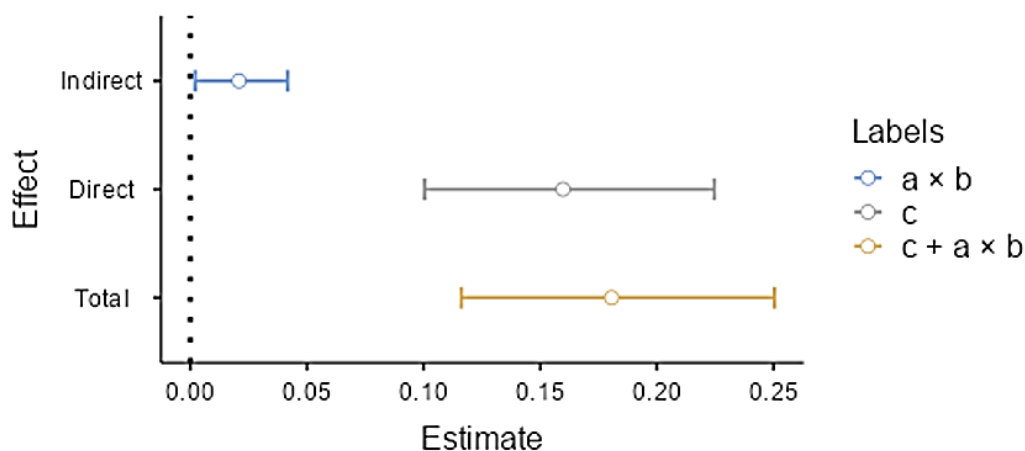


Figure 2. Graph regarding the mediating effect

4. DISCUSSION

The study results revealed that the participating students' AI literacy and career decidedness levels were high. Thus, these results can be interpreted as promising for the future professional lives of young people and social development. On the other hand, although the majority of the participating students did not take any courses on AI and there were no courses on the subject in their current curriculum, their personal efforts may have had an effect on their high level of AI literacy, which may be related to the digital generation's predisposition to technology. Indeed, the fact that more than half of the students reported actively following news about AI and using AI programs such as ChatGPT, which are based on large language models, can be interpreted as a sign of their high level of awareness. The fact that the majority of the participating students chose the fields they were currently studying willingly, along with the observation that more than half of them do not perceive AI as an obstacle to their future careers, can be considered as indicators of a high level of career decidedness.

In this respect, the results of the present study are consistent with those of Banaz & Demirel's (2024), Yazıcı's (2023), and Köse's (2025) studies. The finding that young people had a moderate level of AI anxiety is a result worth considering. This moderate level of AI anxiety may be related to the rapid development of technology, the perception of uncertainty, and concerns about the future of professions. Indeed, more than half of the students believe that AI will lead to unemployment in the near future. Being knowledgeable about AI may not eliminate anxiety, but it may also indicate a conscious questioning state. Being exposed to these issues more during the education process can also be considered as a factor affecting anxiety levels. Therefore, these results reveal the importance of updating of education policies and provision of systematical supports to students to improve their knowledge and skills on the subject. In this respect, it can be said that the results of the present study are consistent with the results of Migdadi et al.'s (2024), and Asio & Suero's (2024) studies.

This study revealed that the career decidedness of university students representing the digital generation significantly and positively influences their AI literacy. Moreover, it was found that students' levels of AI anxiety have a significant and negative impact on their AI literacy, and that this anxiety plays a partial mediating role in the relationship between career decidedness and AI literacy. These findings are consistent with Super's (1980) Life-Span, Life-Space Theory, which conceptualizes career development as a lifelong, multidimensional process. According to this theory, individuals' career development unfolds across various life stages, and career decidedness is closely tied to identity formation. A high level of career decidedness enables individuals to construct clear future goals and achieve vocational self-realization. This, in turn, reduces anxiety toward rapidly evolving technologies such as AI and fosters more effective information acquisition processes.

The path coefficients β obtained in this study, while indicating a small-to-moderate effect size, carry substantial practical significance within the context of career development. According to Cohen's (2013) criteria, these coefficients suggest that career decidedness and AI anxiety account for a non-negligible portion of the variance in AI literacy. From a practical standpoint, these findings imply that strengthening a student's professional identity is not merely a statistical predictor but a meaningful psychological resource that facilitates the adaptation process to technological disruptions.

This practical significance is further reinforced by Savickas' (2002) Career Construction Theory, which emphasizes that career certainty and adaptability are crucial for navigating environmental changes. The results suggest that individuals with a stable vocational self-concept are better equipped to integrate disruptive technologies like AI into their career paths rather than perceiving them as existential threats. Consequently, the observed effect sizes highlight that career decidedness serves as a psychological buffer that reduces anxiety and fosters the necessary competence for AI literacy, providing a solid foundation for future workforce readiness.

Self-Determination Theory (Deci & Ryan, 2000) also offers valuable insights into the motivational dynamics of individuals. Those with strong intrinsic motivation tend to remain open to learning and self-improvement despite external stressors and anxieties. Within this framework, students with high career decidedness are more likely to possess strong intrinsic motivation to enhance their AI literacy, allowing them to mitigate the negative effects of anxiety and focus their cognitive resources on acquiring knowledge related to AI.

The Technology Acceptance Model (Davis, 1989) and the Cognitive Evaluation Theory (Deci & Ryan, 2000) further enrich the interpretation of AI literacy. The Technology Acceptance Model emphasizes the critical role of perceived usefulness and ease of use in the adoption of new technologies. Accordingly, individuals with high career decidedness are more inclined to view AI not as a threat but as a tool that can support their career development. Cognitive Evaluation Theory, on the other hand, explains how individuals evaluate external stimuli and the impact of these evaluations on their motivation. In this context, the partial mediating role of AI anxiety may be explained by the tendency of individuals with strong career decidedness to cognitively reframe their perceptions of AI, reduce anxiety, and maintain their motivation to learn.

Finally, the Social Cognitive Career Theory (Lent et al., 1994) supports the current findings by emphasizing the influence of self-efficacy beliefs and career decidedness on information-seeking behavior and anxiety management. Individuals with high career decidedness are better equipped to manage perceptions of uncertainty and threat, which in turn helps reduce their AI anxiety and enhances their literacy. From the perspective of Festinger's (1957) Theory of Cognitive Dissonance, this can also

be interpreted as an attempt to resolve the dissonance between career goals and anxieties by actively seeking information about AI—thereby lowering anxiety and improving literacy.

This comprehensive theoretical framework offers a holistic approach to understanding the role of AI anxiety in the complex relationship between career decidedness and AI literacy among members of the digital generation. Furthermore, considering that these relationships may be shaped by individual differences and contextual factors, it becomes essential to develop multifaceted strategies in education and career guidance that address motivation, cognitive evaluation, and technology acceptance. In conclusion, providing support for the career development of young people in the digital age—especially support that reduces AI anxiety and strengthens their motivation to seek knowledge—will not only enhance the effectiveness of career planning processes but also facilitate adaptation to emerging digital technologies. In doing so, the AI literacy level of future professionals will increase, making the future workforce more resilient and better equipped.

While this research provides a holistic framework for understanding AI literacy, its findings should be interpreted within the context of certain methodological constraints. The cross-sectional nature of the study, for instance, offers a valuable snapshot of current attitudes but does not allow for definitive causal claims between career decidedness and AI-related variables. To validate these directional relationships, future research should employ longitudinal designs. Additionally, as the study focused specifically on university students, the high levels of AI literacy and moderate anxiety observed here reflect the unique characteristics of the digital generation; therefore, generalizing these results to older professionals or different sectors requires caution.

Furthermore, the reliance on self-reported data and the specific set of variables analyzed mean that other environmental factors or social desirability biases could potentially influence the results. Acknowledging these limitations does not diminish the study's contribution but rather highlights the need for more diverse sampling and multi-method approaches in future inquiries. In conclusion, by addressing these constraints through integrated educational and career guidance strategies, the future workforce can be better prepared to navigate the complexities of AI-driven transitions.

5. CONCLUSION and RECOMMENDATIONS

This study sheds light on the intricate relationship between career decidedness, AI anxiety, and AI literacy among university students representing the digital generation. The findings demonstrate that higher levels of career decidedness are associated with increased AI literacy and reduced anxiety regarding AI. Furthermore, AI anxiety partially mediates the relationship between career decidedness and AI literacy, suggesting that students' psychological responses to technological change play a crucial role in shaping their learning behaviors and technological competencies. Grounded in well-established theories that have a prominent place in the literature, this study offers a comprehensive understanding of how young adults' career orientations and emotional responses influence the development of digital competencies. These findings highlight the importance of strong career motivation and intrinsic self-regulation in preparing the digital generation for rapidly evolving technological environments.

In today's rapidly evolving professional landscape shaped by AI, it is imperative to equip future professionals with both emotional resilience and technological literacy. Accordingly, universities and educational institutions should develop programs that support the career decidedness of the digital generation, thereby enhancing students' motivation to improve their AI literacy. Additionally, providing psychological support and awareness training aimed at reducing AI-related anxiety will facilitate students' adaptation to technological advancements and optimize their learning processes. Career guidance practices should adopt comprehensive and integrated approaches that not only help students clarify their career goals but also assist them in managing anxieties related to innovative technologies such as AI. Moreover, integrating theoretical and practical courses on AI into academic curricula can play a crucial role in systematically developing students' knowledge and skills in this area.

Furthermore, future research should thoroughly investigate the effects of individual differences and environmental factors on AI anxiety and literacy. Such insights will enable the design of more comprehensive and effective intervention strategies tailored to students' specific needs. Offering psychological, motivational, and technical support in education and career planning simultaneously will contribute to nurturing a generation that is career-resilient, technologically literate, and well-prepared to meet the demands of the digital era.

Research and Publication Ethics Statement

Before the study was conducted, ethical approval was obtained from the Social and Human Sciences Scientific Research and Publication Ethics Committee of Uşak University (Decision date: December 13, 2024, Decision number: E.249762). The study was carried out in accordance with the ethical standards established in the Declaration of Helsinki (1964) and the ethical standards of the National Research Committee. Written informed consent was obtained from all the participants after they were informed about the study and told that they had the right to withdraw from the study at any time without giving any reason and that the data about them would be used only for scientific purposes and would not be disclosed to third parties.

Contribution Rates of Authors to the Article

The authors declare that each author made an important contribution to every stage of the study. The two authors worked together during the analysis and reporting of the data.

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Statement of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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