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Investigation of AI Anxiety and Some Personal Variables' Effects on Teachers' Attitudes Towards AI

Yapay Zekâya Yönelik Kaygının ve Kişisel Bazı Değişkenlerin Öğretmenlerin Yapay Zekâya Yönelik Tutumlarına Etkisinin İncelenmesi

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ABSTRACT: Artificial Intelligence (AI) applications are increasingly prevalent in everyday life. The use of technological tools, and therefore AI applications, is also gaining more ground in educational settings. Demographic variables and concerns about AI can also affect attitudes towards AI. This study aims to determine the extent to which teachers' gender, age, years of professional experience, use of technological tools in class, level of knowledge about AI, and concerns about AI predict their attitudes towards AI. The study is the predictive descriptive and correlational survey model. The population of study consists of teachers in Kastamonu province, and the sample consists of 395 teachers. The AI Anxiety Scale and the General Attitude Scale Towards AI were used for data collection. The data were analyzed using multiple regression. It was determined that teachers' anxiety towards AI explains approximately 18% of their positive attitudes and 42% of their negative attitudes towards AI. It has been determined that as teachers' anxiety towards AI increases, their positive attitudes decrease and their negative attitudes increase. It was determined that gender, age, professional seniority, use of technological tools in the classroom, and knowledge level about AI together explain approximately 6% of teachers' attitudes towards AI. It has been determined that the attitudes of female teachers towards AI were negative, and the attitudes of teachers who use technological tools in every lesson and have sufficient knowledge about AI were found to have positive attitudes.

Keywords: AI, AI anxiety, attitudes towardsAI, teachers, personal variables.

ÖZ: Yapay zekâ (YZ) uygulamaları günlük yaşamda giderek daha yaygın hâle gelmektedir. Teknolojik araçların ve dolayısıyla YZ uygulamalarının kullanım alanı eğitim ortamlarında da genişlemektedir. Demografik değişkenler ve yapay zekâya yönelik kaygılar da yapay zekâya yönelik tutumları etkileyebilmektedir. Bu araştırmanın amacı, öğretmenlerin cinsiyet, yaş, mesleki kıdem, sınıfta teknolojik araç kullanımı, YZ hakkındaki bilgi düzeyleri ve yapay zekâya ilişkin kaygılarının, yapay zekâya yönelik tutumlarını ne ölçüde yordadığını belirlemektir. Araştırma, yordayıcı betimsel ve ilişkisel tarama modelindedir. Çalışmanın evreni Kastamonu ilinde görev yapan öğretmenler iken örneklemini ise 395 öğretmenden oluşmaktadır. Veri toplamada Yapay Zekâ Kaygı Ölçeği ile Yapay Zekâya Yönelik Genel Tutum Ölçeği kullanılmıştır. Veri analizinde çoklu regresyon uygulanmıştır. Öğretmenlerin yapay zekâya yönelik kaygılarının, yapay zekâya karşı olumlu tutumlarının yaklaşık %18'ini, olumsuz tutumlarının ise %42'sini açıkladığı belirlenmiştir. Öğretmenlerin yapay zekâya yönelik kaygıları arttıkça olumlu tutumlarının azaldığı, olumsuz tutumların ise arttığı sonucuna ulaşılmıştır. Ayrıca cinsiyet, yaş, mesleki kıdem, sınıfta teknolojik araç kullanımı ve yapay zekâya ilişkin bilgi düzeyinin birlikte öğretmenlerin yapay zekâya yönelik tutumlarının yaklaşık %6'sını açıkladığı saptanmıştır. Kadın öğretmenlerin yapay zekâya yönelik tutumlarının olumsuz olduğu; her derste teknolojik araç kullanan ve YZ konusunda yeterli bilgiye sahip öğretmenlerin ise olumlu tutum sergilediği belirlenmiştir.

Anahtar Kelimeler: Yapay zekâ, yapay zekâ kaygısı, yapay zekaya yönelik tutum, öğretmenler, kişisel değişkenler.

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One of the most advanced aspects of technological process is artificial intelligence (AI), which is transforming the world by enhancing operations in numerous fields (An et al., 2023). The integration of AI-related technologies into social life has made understanding individuals' attitudes towards AI crucial (Köseoğlu & Köse, 2025). Today, it can be said that with the increase in the use of the internet, AI application areas and therefore the access of individuals of all ages to AI has also increased.

The concept of AI first entered human life in 1956, following Turing's 1950 inquiry into whether machines could talk or think. (Abanoz & Acar, 2023; Haenlein & Kaplan, 2019; Turing, 1950). AI is classified as the theory of computer systems (Chassignol et al., 2018) and it is capable of performing functions that typically require human intelligence. For example visual perception, speech recognition, language translation etc. (Lee & Yoon, 2021). AI can be defined as a field designed to mimic human intelligence and perform various tasks (Honavar, 2006). AI applications have begun to be actively used in many fields such as industry, health, transportation, and social life. Adults' attitudes towards AI play an important role in society's ability to keep pace with technological change (Köseoğlu & Köse, 2025). AI has many applications in the field of education and is used quite frequently in the world of education (Sarıkaya & Kavan, 2024). AI can transform teaching and learning methods (An et al., 2023). The concept of AI is intriguing to many, including academics, teachers, and students. The idea of defining an abstract concept like intelligence in artificial terms sparks great curiosity among people. However, despite its appeal, many individuals lack detailed knowledge about the content or the subjects that AI represents (Pirim, 2006). Recent studies have continued to explore AI's potential in education and underline the importance of equipping educators with the skills necessary to harness AI tools effectively (Meylani, 2024). The prevalence of AI in education is inevitable. And, preparing teachers for AI-supported education is a critical requirement for the integration of AI into future classrooms. Thefore, teachers' perspectives on the use of AI in education are important from pre-service training (Zhang et al., 2023). Teachers' approaches, attitudes, and concerns towards AI will also influence the implementation of AI in educational practices.

Despite its positive aspects, the technological advancements extending to AI can sometimes be a source of anxiety. Anxiety, defined as a negative emotional response to actual or anticipated potential dangers (Takıl et al., 2022), may arise in response to a specific object or situation. One such situation is the anxiety stemming from uncertainties related to AI and its applications (Kazak, 2023). Technological advancements provide significant benefits in every aspect of life. However, there are also concerns associated with the use of AI. From the studies of Ramazanoğlu et al. (2023), it has been determined that prospective teachers have concerns about violations of rights, difficulties in accessing accurate resources for personal and professional development, and the protection of the content and products they create in the context of AI usage. Confusion and misunderstandings regarding AI constitute a significant portion of the anxiety and fears directed towards these technologies Concerns about the future development of AI, driven by the fear that it could potentially spiral out of control, are also widespread (Filiz et al., 2022). Anxiety related to AI can be examined in four different dimensions: learning, job displacement, sociotechnical blindness, and AI structuring (Akkaya et al., 2021). Anxiety about learning AI technologies is referred

to as learning anxiety. Job displacement anxiety is the fear stemming from the negative impacts of AI on the workforce. The sociotechnical blindness dimension suggests the possibility that AI could spiral out of control. This situation arises from insufficient knowledge about AI applications, and there is a prevailing belief that AI cannot operate without human intervention. AI structuring refers to the fear stemming from the perception that the combination of robotic and human-like features in AI is unsettling to individuals in the workforce (Takıl et al., 2022). Today, the drawbacks of AI are gaining more attention than its benefits. This is because it is increasingly being predicted that machines will eventually become smarter than humans, potentially leading to destructive consequences (Abanoz & Acar, 2023). Attitudes and anxiety towards AI can be influenced by some factors. In a meta-analysis study, it was observed that perceptions of AI are shaped by ethical issues, especially concerns about accuracy and data privacy. In the same study, the effects of AI were discussed, and the importance of examining the relationships established by societies with AI according to different demographic characteristics was emphasized (Karakoç Keskin, 2026).

In Türkiye, among the 1.256 postgraduate studies conducted between 2019 and 2022 on the subject, the majority were conducted at the Institute of Science and primarily focused on computer engineering, followed by electrical-electronics, industrial, and civil engineering fields (Buketçi, 2024). However, besides its scientific and technological aspects, the subject needs to be addressed from various perspectives, including individual, environmental, developmental, and psychosocial angles. There is a need for discussions that focus on topics beneficial to humanity and measures to prevent potential risks. Although AI offers valuable contributions to humanity, it also poses known and unknown threats. Unknown situations can create greater anxiety among people.

When examining studies related to AI into education, it is observed that various topics have been explored, including the use of AI and its applications in education (Arslan, 2020), teacher candidates' anxiety about AI and attitudes towards machine learning (Hopcan et al, 2023), tperspectives on the use of AI in education (Dülger & Gümüşeli, 2023), future scenarios of AI in education (Çetin & Aktaş, 2021), and teacher candidates' views on AI (Ramazanoğlu et al., 2023). In academic studies, alongside the benefits of AI, ongoing discussions around AI-related concerns, trust-distrust, ethics, and privacy-confidentiality issues are evident. The development and transformation of AI, trigger individuals' anxieties, creating environments of insecurity (Abanoz & Acar, 2023). When examining studies focused on AI in education, it has been found that AI primarily enhances student interactions and contributes to e-learning systems (Körükçüoğlu & Ata, 2023).

In some studies in the literature, a significant difference was found between gender, socio-economic level, age (Alp et al., 2025; Ateş & Uymaz, 2025; Çelebi et al., 2025; Öztürk & Ilıman, 2026) and AI anxiety. However, there have also been studies showing that gender and age do not make a difference (Banaz & Demirel, 2025; Sepetçioğlu & Topsakal, 2025). Çelebi et al. (2025) found that there was no significant relationship between pre-service teachers' AI literacy and anxiety level. Bozgüney ve Alp (2025), akademik unvana göre AI kaygı düzeylerinin farklılaştığını. Banaz ve Demirel (2025), Öztürk and Ilıman (2026) found that individuals who benefited from AI had lower anxiety levels. Nowadays, students can also use AI in their research and

assignments. Therefore, teachers need to know more about AI and realize the positive and negative aspects of using AI resources. However, AI anxiety and negative attitudes may lead to avoidance of learning about or using AI, which may reflect negatively on the education process. Determining which demographic characteristics affect AI anxiety and attitudes can contribute to awareness efforts in this direction. Unlike the existing literature, this study aimed to examine the effects of variables such as age, gender, professional seniority, use of technological tools in the classroom, and artificial intelligence knowledge on teachers' attitudes towards artificial intelligence. The following sub-problems were addressed in the study:

- Do teachers' anxiety about AI influence attitudes towards AI?
- Do teachers' age, seniority, use of technological tools, and level of knowledge about AI affect their attitudes towards AI?

Method

Model

A correlational survey model was utilized in this researh. The relationships and co-variations between variables were examined (Büyüköztürk et al., 2017).

Population and Sample

The study population consisted of teachers working in public schools in Kastamonu province (n=4552). In order to minimize the sampling error, it was aimed collect data from all branches teachers. For this reason, all teachers were invited to participate in the study. However, 456 teachers voluntarily participated in the study. After removing data that showed deviations from the normal according to the histogram graphs, the sample group consisted of 395 teachers. The distribution of certain personal information related to the sample group is presented in Table 1.

Table 1

Some Personal Information Regarding the Sample

Variables		f	%
Gender	Female	250	63.3
	Male	145	36.7
Age	25 years old and under	23	5.8
	26-30	86	21.7
	31-35	92	23.2
	36-40	67	16.9
	41-45	61	15.4
	46-50	35	8.8
	Over 50 years old	33	8.3
Seniority	Less than 5 years	88	22.3
	5-10	101	25.6
	11-15	83	21.0

	16-20	43	10.9
	21-25	41	10.4
	26 years and above	39	9.9
Use of technological tools in the classroom	Almost every lesson	165	41.8
	During part of the lesson	230	58.2
Information about AI	Have sufficient knowledge	49	12.4
	Partially informed	310	78.5
	No information	36	9.1

As seen in Table 1, 63.3% of the teachers in the sample group are female, and 36.7% are male. In terms of age distribution, 21.7% are between the ages of 26-30, and 23.2% are between 31-35. Regarding years of service, 22.3% have less than 5 years of experience, 25.6% have 5-10 years, 21% have 11-15 years, 10.9% have 16-20 years, 10.4% have 21-25 years, and 9.9% have 26 years or more of experience. Additionally, 41.8% of the teachers reported using technological tools in almost every lesson, while 58.2% indicated using them for part of the lesson. Regarding knowledge of AI, 12.4% stated that they have sufficient knowledge, 78.5% have partial knowledge, and 9.1% have no knowledge at all.

Data Collection Instruments

In the study, several tools were used to collect data. A personal information form was used to assess variables such as gender, age, seniority, the use of technological tools in lessons, and the teacher's self-assessment of their knowledge of AI. The AI Anxiety Scale was used to determine AI-related anxiety, and the General Attitude ScaleTowards AI to assess attitudes towards AI.

The AI Anxiety Scale

The scale was developed by Wang and Wang (2019) and adapted into Turkish by Akkaya et al. (2021). This scale is a 5-point Likert-type instrument consisting of 16 items divided into four sub-dimensions (Learning, Job Displacement, Sociotechnical Blindness, and AI Structuring). A high score in each sub-dimension indicates a high level of anxiety related to learning AI technologies, fear of AI's negative impact on the workforce, fear of AI spiraling out of control, and the belief that the combination of robotic and human-like features is frightening. For the Turkish sample, Cronbach's Alpha values for the sub-dimensions were found to be .95, .90, .88, and .95, respectively, with an overall scale reliability of .94. In the sample of this study, the Cronbach's Alpha values for the sub-dimensions were .92, .83, .83, and .95, respectively.

The General Attitude Scale Towards AI

The scale was developed by Schepman and Rodway (2020) and adapted into Turkish by Kaya et al. (2024). The scale is a 5-point Likert-type consisting of 20 items. There are two sub-dimensions (Positive and Negative Attitudes). The scale is evaluated based on its sub-dimensions. High scores in these sub-dimensions indicate strong

positive/affirmative or negative/adverse attitudes towards AI. In the Turkish sample, the Cronbach's Alpha value was found to be .82 for Positive Attitudes and .84 for Negative Attitudes. In the sample of this study, the Cronbach's Alpha values was found to be .91 for Positive Attitudes and .82 for Negative Attitude.

Data Collection and Analysis

After obtaining ethical and official permissions, the voluntary participation form and measurement instruments were distributed to teachers online. The data were then transferred to a statistical software program, and the assumption of normality was assessed using the Kolmogorov-Smirnov Test. Since the significance values in the sub-dimensions of both scales were below .05, skewness and kurtosis values, coefficients of variation, as well as Histogram and Q-Q Plot graphs were examined.

It was found that the skewness value in the Learning sub-dimension of the AI Anxiety Scale and the kurtosis value in the AI Structuring sub-dimension were above .3, and the coefficients of variation exceeded .3. For the other sub-dimensions of the scales, the skewness and kurtosis values were within the ±2 range, the coefficients of variation were below .3, the histogram graphs were unimodal, and the Q-Q plot graphs were consistent with a normal distribution (Mayers, 2013; Uysal & Kılıç, 2022). Based on these assessments, it was concluded that the data were normally distributed.

A multiple linear regression analysis was used to determine the impact of teachers' concerns about AI on their positive and negative attitudes toward it. Multiple regression is employed in situations where there is one dependent variable and two or more independent variables that are examined for their effects on the dependent variable. In the first stage, attitudes towards AI were considered the dependent variable, while the subdimensions of the AI Anxiety Scale-Learning, Job Replacement, Sociotechnical Blindness, and AI Structuring were taken as independent variables. In the second stage, being female, being 35 years old or younger, be having 10 or fewer years of experience, using technological tools in almost every lesson, and having sufficient knowledge about AI were assigned as dummy variables and coded as 1. In the analyses, the correlations between the independent variables ranged from .021 to .712, the tolerance values were above .20, the VIF values were below 10, the CI values were below 30, and the Durbin-Watson value was between 1.5 and 2.5. Based on all these values, it was seen that there was no multicollinearity problem among the variables (Büyüköztürk, 2003). In the analyses where demographic variables were considered as independent variables, despite the assumptions being met in the Negative Attitude subdimension, regression analysis was not performed because none of the demographic variables made a significant contribution to the variance in the regression model.

The results obtained by testing the assumptions related to the Positive Attitudes and Negative Attitudes subdimensions of the General Attitude Scale Towards AI are presented in Figures 1a-b and 2a-b.

Figure 1a-b

The Histogram of Standardized Predicted Values with the Normal Distribution Curve and the Scatter Plot of Standardized Residuals versus Predicted Values for Positive Attitudes

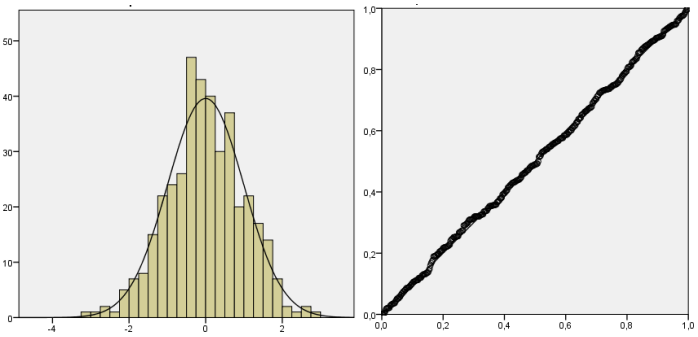
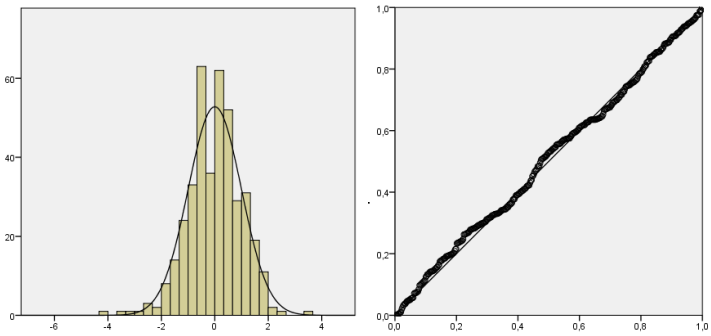


Figure 2a-b

The Histogram of Standardized Predicted Values with the Normal Distribution Curve and the Scatter Plot of Standardized Residuals versus Predicted Values for Negative Attitudes

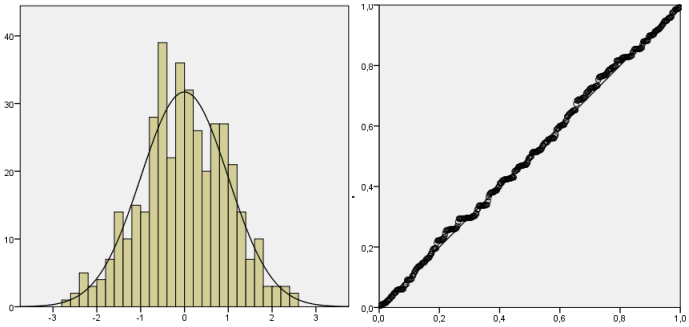


As seen in Figures 1 and 2, it can be stated that the predicted values follow a normal distribution, and the points in the scatter plots are clustered around an axis, indicating the presence of a linear and positive relationship. When examining the multicollinearity issue, the tolerance values for Positive Attitudes ranged between .47 and .77, the VIF values ranged between 1.29 and 2.42, and the Durbin-Watson value was 1.96. For Negative Attitudes, the tolerance values ranged between .41 and .77, the VIF values ranged between 1.29 and 2.42, and the Durbin-Watson value was 2.08.

The results obtained by testing the assumptions related to the subdimensions in the analyses of the prediction of positive attitudes towards AI by certain demographic variables are presented in Figures 3a-b.

Figure 3a-b

The Histogram of Standardized Predicted Values with the Normal Distribution Curve and the Scatter Plot of Standardized Residuals versus Predicted Values for Positive Attitudes



As seen in Figure 3, it can be stated that the predicted values follow a normal distribution, and the points in the scatter plots are clustered around an axis, indicating the presence of a linear and positive relationship. When examining the multicollinearity issue, the tolerance values for Positive Attitudes ranged between .63 and .97, the VIF values ranged between 1.03 and 1.59, and the Durbin-Watson value was 1.98.

Findings

The results of the regression analysis for predicting positive attitudes towards AI by the subdimensions of the AI Anxiety Scale are presented in Table 2, and the results for predicting negative attitudes are provided in Table 3.

Table 2

Results of the Regression Analysis Regarding the Prediction of Positive Attitudes Toward AI by AI Anxiety Scale Scores

Variables	B	ΔR^2	β	t	p	Binary *r*	Partial *r*
Constant	51.723	1.805		28.648	.000		
Learning	-.441	.090	-.255	-4.889	.000	-.364	-.240
Job Change	-.164	.157	-.075	-1.047	.296	-.283	-.053
Sociotechnical Blindness	.157	.180	.062	.872	.384	-.211	.044
AI Configuration	-.575	.168	-.227	-3.423	.001	-.339	-.171
R=.422 R^2=.178 $F_{(4-394)}$=21.119 p=.000							
Positive Attitude=51.723-.441χ_1-.164χ_2+.157χ_3-.575χ_4							

When Table 2 is examined, it is observed that scores from the AI Anxiety Scale predict teachers' positive attitudes towards AI (r=.422, p=.000). The independent variables of Learning, Job Replacement, Sociotechnical Blindness, and AI Structuring together explain approximately 18% of teachers' positive attitudes towards AI (R^2=.178). According to the β values, the effect of the independent variables on teachers' positive attitudes towards AI is ranked as Learning, AI Structuring, Job

Replacement, and Sociotechnical Blindness. Regarding the significance of the regression test, Learning and AI Structuring have a significant predictive effect on positive attitudes towards AI, while Job Replacement and Sociotechnical Blindness do not have a significant effect. According to the bivariate correlations between the predictor and predicted variables, there are low-level negative relationships between teachers' Learning and AI Structuring scores and their positive attitudes towards AI (Learning *r*=-.364; AI Structuring *r*=-.339). A one-unit increase in teachers' Learning score leads to a .441 unit decrease in their positive attitude towards AI, while a one-unit increase in their AI Structuring score results in a .575 unit decrease in positive attitude. As teachers' anxiety towards AI increases, their positive attitudes decrease.

Table 3

Regression Analysis Results for the Prediction of Negative Attitudes Towards AI by AI Anxiety Scale Scores

Variables	B	ΔR^2	β	t	p	Binary *r*	Partial *r*
Constant	9.576	.966		9.916	.000		
Learning	.102	.048	.093	2.114	.035	.338	.106
Job Change	.174	.084	.124	2.074	.039	.536	.104
Sociotechnical Blindness	.420	.096	.262	4.363	.000	.570	.216
AI Configuration	.471	.090	.293	5.244	.000	.584	.257
R=.647 R^2=.419 $F_{(4\text{-}394)}$=70.283 p= .000							
Positive Attitude =9.576+.102χ_{1+}.174 χ_2+.420χ_{3+}.471χ_4							

When Table 3 is examined, it is observed that scores from the AI Anxiety Scale predict teachers' negative attitudes towards AI (*r*=.647, *p*=.000). The independent variables of Learning, Job Replacement, Sociotechnical Blindness, and AI Structuring together explain approximately 42% of teachers' negative attitudes towards AI (R^2=.419). According to the β values, the effect of the independent variables on teachers' negative attitudes towards AI is ranked as AI Structuring, Sociotechnical Blindness, Job Replacement, and Learning. Based on the bivariate correlations between the predictor and predicted variables, there is a positive and low-level relationship between teachers' Learning scores and their negative attitudes towards AI (*r*=.338), while there are positive and moderate-level relationships between teachers' scores on Job Replacement, Sociotechnical Blindness, and AI Structuring and their negative attitudes towards AI (*r*=.536; *r*=.570; *r*=.584). A one-unit increase in teachers' Learning score leads to a .102 unit increase in their negative attitude towards AI, while a one-unit increase in their Job Replacement score results in a .174 unit increase in negative attitude. Similarly, a one-unit increase in their Sociotechnical Blindness score causes a .420 unit increase, and a one-unit increase in their AI Structuring score leads to a .471 unit increase in negative attitudes towards AI. As teachers' anxiety towards AI increases, their negative attitudes also rise.

The results of the regression analysis regarding the prediction of positive attitudes towards AI by demographic variables are presented in Table 4.

Table 4

Results of the Regression Analysis on the Prediction of Positive Attitudes Towards AI by Demographic Variables

Variables	B	ΔR^2	β	t	p	Binary *r*	Partial *r*
Constant	40.554	.960		42.223	.000		
Gender	-1.875	.954	-.100	-1.965	.050	-.127	-.099
Age	.292	1.116	.016	.262	.794	.013	.013
Seniority	.730	1.118	.040	.653	.514	.026	.033
Use of technological tools	2.082	.913	.114	2.282	.023	.134	.115
Level of AI knowledge	4.425	1.384	.162	3.198	.001	.197	.160
R=.247 R^2=.061 $F_{(5\text{-}389)}$=5.071 p=.000							
Positive Attitude =40.554-1.875χ_1+.292χ_2+.730χ_3+2.082χ_4+4.425 χ_5							

When Table 4 is examined, it is observed that demographic variables predict teachers' positive attitudes towards AI (r=.247, p=.000). The five independent variables together explain approximately 6% of teachers' positive attitudes towards AI (R^2=.061). According to the β values, the relative importance of the demographic variables on teachers' positive attitudes towards AI is ranked as follows: level of AI knowledge, use of technological tools in every lesson, gender, seniority, and age. Based on the t-values related to the significance of the regression test, gender, use of technological tools in lessons, and AI knowledge level have a significant predictive effect on positive attitudes towards AI, while age and professional seniority do not have a significant effect. According to the bivariate correlations between the predictor and predicted variables, there is a low-level negative relationship between being female and positive attitudes towards AI (r=-.127), a low-level positive relationship between using technological tools in every lesson and positive attitudes towards AI (r=.134), and a low-level positive relationship between having sufficient knowledge about AI and positive attitudes towards it (r=.197).

Female teachers tend to have negative attitudes towards AI. Whereas teachers who use technological tools in every lesson and have sufficient knowledge about AI tend to have more positive attitudes.

Discussion, Conclusion and Suggestions

This study was conducted to determine the extent to which teachers' demographic characteristics and concerns about AI predict their attitudes towards AI. Resault of the study, it was found that both demographic variables and concerns about AI have a predictive effect on teachers' attitudes towards AI.

The study found that anxiety about AI accounted for approximately 18% of teachers' positive attitudes and 42% of their negative attitudes towards AI. While Learning and AI Structuring had a significant predictive effect on positive attitudes towards AI, Learning, Job Replacement, Sociotechnical Blindness, and AI Structuring had a significant predictive effect on negative attitudes. It was determined that as

teachers' anxiety towards AI increased, their positive attitudes decreased, and their negative attitudes increased. It is expected that anxiety levels would influence individuals' opinions, attitudes, and behaviors towards events and phenomena. Cho et al. (2024) found that AI anxiety had a negative correlation with acceptance of AI. Suseno et al. (2023) found that AI anxiety negatively affected managers' readiness for change in adopting AI. Schiavo et al. (2024) noted that AI literacy increases the acceptance of AI, but anxiety has a directly negative impact on the acceptance of AI. Kaya et al. (2024) emphasized that sociotechnical blindness was not a significant predictor of individuals' attitudes towards AI, but anxiety related to AI structuring led to less forgiving attitudes towards the negative aspects of AI. They also noted that AI learning anxiety significantly influenced both positive and negative attitudes towards AI, with overall AI anxiety predicting more negative attitudes towards AI. In their study with prospective Turkish language teachers, Eyüp and Kayhan (2023) identified a significant negative correlation between AI anxiety and attitudes towards AI. These findings support the results obtained in this study, which suggest that AI anxiety predicts negative attitudes towards AI. In other words, it can be said that teachers who have a negative attitude towards AI are worried about AI.

It was determined that gender, age, professional seniority, use of technological tools in class, and levels of knowledge about AI together explained approximately 6% of teachers' attitudes towards AI. A negative correlation was found between being female and positive attitudes towards AI, while positive correlations were observed with using technological tools in every lesson and having sufficient knowledge about AI. While female teachers had more negative attitudes towards AI, teachers who used technological tools in every lesson and had sufficient knowledge about AI demonstrated more positive attitudes. It can be expected that teachers who strive to adapt to new developments and use technological tools in can have a more positive attitude towards AI in classroom. Stein et al. (2004) noted that individuals with adaptable personalities had more positive attitudes towards AI. Yakut (2024) identified a significant relationship between profession, education level, relationship with technological products, knowledge of AI, and the frequency of following developments in the AI field with positive attitudes towards AI. Research involving academics and health students has demonstrated the effects of AI-related anxiety on life satisfaction, attitudes, and literacy, showing that anxiety has negative consequences; yet, simultaneous evaluation of attitudes and anxiety among teacher samples remains limited (Bozgüney & Alp, 2025; Alp et al., 2025; Öztürk & Ilıman, 2026). Some studies have partially examined the roles of AI usage experience and classroom technological tool integration on anxiety and attitudes, analyzing the relationship between anxiety and usage among vocational college students and foreign language learners (Banaz & Demirel, 2025; Ateş & Uymaz, 2025). Galindo et al. (2024) found that as teachers' knowledge of AI increased, their positive attitudes increased and their anxieties decreased. These findings support the results obtained from the research, reinforcing the link between AI knowledge and attitudes towards AI. Additionally, it was identified that male teachers (Pinto Dos Santos et al., 2019) exhibited more pronounced positive attitudes towards AI compared to female teachers. Yetişensoy (2024) similarly found that male teacher candidates had significantly higher positive attitudes and significantly lower negative attitudes towards AI than their female counterparts. These findings align with the current research results.

However, studies by Filiz et al. (2022), Sevimli Deniz (2022), Tan et al. (2023), Yakut (2024), and Şen (2024) found no significant difference between AI anxiety and variables such as age, gender, marital status, years of service at the institution, or the institution's use of AI. Furthermore, Tan et al. (2023) found that younger individuals with lower seniority exhibited more positive attitudes toward AI. Yeniçeri and Kenan (2025) found that female teacher candidates were more anxious about AI. It can be assumed that individuals who are introduced to technology at an earlier age and men are more interested in AI. Therefore, it can be said that AI knowledge has a stronger influence on participants' attitudes toward AI than demographic variables. This shows that increased AI knowledge leads to more positive attitudes towards it.

AI contributes to the field of education directly or indirectly. And its knowledge, data, or logic-based applications are present in every domain (Körükçüoğlu & Ata, 2023). In education, AI can be utilized in areas such as computer-assisted individual learning approaches, data analysis, school and student evaluation, as well as online and distance education. It can assist students in adapting to new technologies, help teachers manage classrooms and create course content, and provide parents with information regarding their children (Ramazanoğlu et al., 2023). Yolcu (2024) emphasized that AI will become more equipped for effective use in the educational process and that teacher training will be a necessity for adapting to this technology. Having sufficient knowledge about AI and paying attention to ethical issues are crucial for protecting individuals from potential risks. It can be said that teachers' anxiety will decrease as they become more knowledgeable about AI and their use increases. Teachers of all levels can be advised to know about AI.

In this study, it was seen that, in addition to teachers' demographic variables, having knowledge of the subject and concerns about AI had an impact on their attitudes towards AI. While AI offers many opportunities in life, it can also cause anxiety. Some tech entrepreneurs and those using AI in the public sphere are expressing concerns. However, some individuals also point out the significant benefit offered by AI (Grassini, 2023). These types of scenarios can influence the complexity of thinking about AI. Technological advancements, much like in daily life, may make the use of AI in educational settings necessary and inevitable in the future. Teachers can utilize AI to carry out their instructional activities, but also they will need to be aware of the potential negative aspects of using AI in education. Having knowledge about the subject can be effective in reducing both anxiety levels and negative attitudes. Therefore, it is recommended that teachers be informed through pre-service and in-service training aimed at increasing their knowledge of AI. This would enable them to act more effectively in enhancing the quality of instruction at all levels of education and in preventing students from misusing AI for undesirable purposes.

This study was conducted with teachers in a specific region and their AI-related concerns and attitudes were evaluated using quantitative measurement tools. It is suggested that the topic of AI be examined with a larger sample and from different perspectives, with both quantitative and qualitative data being analyzed together for more in-depth insights. Studies on the use of AI in the field of education, as in many other fields, have been carried out in the last few years when the use of AI has started to become widespread. There is a need for comprehensive studies on AI, which has started to take place in social life as a relatively new phenomenon. In addition, it seems

important to conduct more academic studies and disseminate the results to a wider audience in order to reduce teachers' prejudices towards AI.

Limitations

The teachers in the sample group were asked to assess their level of knowledge about AI based on their own perceptions. The fact that the level of knowledge was determined by a question rather than by using a measurement tool can be considered a limitation of this study.

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Statement of Responsibility

AÖ: Conceptualization, methodology, analysis, review, supervision. **HG:** Research ideas, data collection, writing original draft. **AA:** Conceptualization, research, writing, review. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

There is no conflict of interest.

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References

Abanoz, M., & Acar, E. (2023). Yapay zeka ve ontolojik güvensizlik: Bireysel ve toplumsal kaygı dinamikleri üzerine bir değerlendirme. *LAÜ Sosyal Bilimler* Dergisi, *14*(1), 22-51. https://izlik.org/JA73BN55EK

Akkaya, B., Özkan, A., & Özkan, H. (2021). Yapay zeka kaygı (YZK) ölçeği: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması. *Alanya Akademik Bakış*, 5(2), 1125-1146. https://doi.org/10.29023/alanyaakademik.833668

Alp, F., Aslan, Y., & Güvensoy, T. (2025). Sağlık yönetimi bölümü öğrencilerinin yapay zekâ kaygısı: Kesitsel bir araştırma. *Yükseköğretim ve Bilim Dergisi*, *15*(3), 510-519.

An, X., Chai, C. S., Li, Y., Zhou, Y., Shen, X., Zheng, C., & Chen, M. (2023). Modeling English teachers' behavioral intention to use AI in middle schools. *Education and Information Technologies, 28*(5), 5187-5208. https://doi.org/10.1007/s10639-022-11286-z

Arslan, K. (2020). Eğitimde yapay zekâ ve uygulamaları. *Batı Anadolu Eğitim Bilimleri Dergisi*, *11*(1), 71-88.

Ateş, V., & Uymaz, G. (2025). Meslek yüksekokulu öğrencilerinde yapay zekâ kaygısı: Demografik özellikler açısından bir inceleme. *Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi*, (Sosyal Bilimlerde Yapay Zeka: Kuram, Uygulama ve Gelecek Perspektifleri), 320-335.

Banaz, E., & Demirel, O. (2025). Yabancı dil olarak Türkçe öğrenenlerin yapay zekâ kaygılarının çeşitli değişkenler açısından incelenmesi. *Uluslararası Türkçe Öğretimi Araştırmaları Dergisi*, *5*(Özel Sayı), 1-19.

Bozgüney, R., & Alp, H. (2025). Akademisyenlerde yapay zekâ kaygısının yaşam tatminlerine etkisinin incelenmesi. *Journal of Sport & Movement Sciences*, *6*(2), 76-85.

Buketçi, H. (2024). Investigation of master's theses in AI between 2019-2022. *Educational Academic Research*, 53, 55-64. https://doi.org/10.33418/education.1421766

Büyüköztürk, Ş. (2003). *Sosyal bilimler için veri analizi el kitabı*. Pegem A.

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2017). *Bilimsel araştırma yöntemleri*. Pegem.

Chassignol, M., Khoroshavin, A., Klimova, A., & Bilyatdinova, A. (2018). AI trends in education: A narrative overview. *Procedia Computer Science, 136*, 16-24. https://doi.org/10.1016/j.procs.2018.08.233

Cho, K. A., & Seo, Y. H. (2024). Dual mediating effects of anxiety to use and acceptance attitude of AI technology on the relationship between nursing students' perception of and intention to use them: A descriptive study. *BMC Nursing*, *23*(1), 212. https://doi.org/10.1186/s12912-024-01887-z

Çelebi, M., Kongül, R., & Çoşkun, G. (2025). Öğretmen adaylarının yapay zekâ okuryazarlığı ve kaygı düzeylerinin sosyodemografik değişkenlere göre incelenmesi. *Türk Eğitim Bilimleri Dergisi*, *23*(3), 3282- 3304.

Çetin, M., & Aktaş, A. (2021). Yapay zeka ve eğitimde gelecek senaryoları. *OPUS International Journal of Society Researches*, *18* (Eğitim Bilimleri Özel Sayısı), 4225-4268. https://doi.org/10.26466/opus.911444

Dülger, E. D., & Gümüşeli, A. İ. (2023). Okul müdürleri ve öğretmenlerin eğitimde yapay zekâ kullanılmasına ilişkin görüşleri. *ISPEC International Journal of Social Sciences & Humanities*, *7*(1), 133-153. http://doi.org/10.5281/zenodo.7766578

Eyüp, B., & Kayhan, S. (2023). Pre-service Turkish language teachers' anxiety and attitudes toward AI. *International Journal of Education and Literacy Studies*, *11*(4), 43-56. https://doi.org/10.7575/aiac.ijels.v.11n.4p.43

Filiz, E., Güzel, Ş., & Şengül, A. (2022). Sağlık profesyonellerinin yapay zekâ kaygı durumlarının incelenmesi. *Journal of Academic Value Studies*, *8*(1), 47-55. https://doi.org/10.29228/javs.57808

Galindo-Domínguez, H., Delgado, N., Campo, L., & Losada, D. (2024). Relationship between teachers' digital competence and attitudes towards AI in education. *International Journal of Educational Research*, *126*, 102381. https://doi.org/10.1016/j.ijer.2024.102381

Grassini, S. (2023). Development and validation of the AI attitude scale (AIAS-4): A brief measure of general attitude toward artificial intelligence. *Frontiers in Psychology Media Psychology, 14*. https://doi.org/10.3389/fpsyg.2023.1191628

Haenlein, M., & Kaplan, A. (2019). A brief history of artifical intelligence: On the past, present, and future of artificial intelligence. *California Management Review,* 1-10. https://doi.org/10.1177/0008125619864925

Honavar, V. (2006). AI: An overview. Retrieved from https://faculty.ist.psu.edu/vhonavar/Courses/ai/handout1.pdf on 24 April 2026.

Hopcan, S., Türkmen, G., & Polat, E. (2023). Öğretmen adaylarının yapay zeka kaygısı ve makine öğrenmesi tutumlarının incelenmesi. *Eğitim ve Bilgi Teknolojileri,* 1-21.

Karakoç Keskin, E. (2026). Bilim iletişimi ve yapap zeka: Kavramsal dönüşümler ve tematik eğilimler çerçevesinde bir araştırma gündemi. *Abant Sosyal Bilimler Dergisi,* 26(1), 301-322. https://doi.org/10.11616/asbi.1824136

Kaya, F., Aydin, F., Schepman, A., Rodway, P., Yetişensoy, O., & Demir Kaya, M. (2024). The roles of personality traits, AI anxiety, and demographic factors in attitudes toward AI. *International Journal of Human–Computer Interaction, 40*(2), 497-514. https://doi.org/10.1080/10447318.2022.2151730

Kazak, M. (2023). *Yapay zekâ kaygısı, yabancılaşma ve dindarlık ilişkisi* [Master's dissertation]. Pamukkale Üniversitesi İslami İlimler Enstitüsü, Denizli.

Körükçüoğlu, A. & Ata, R. (2023). Eğitimde yapay zeka uygulamaları, güncel yönelimler ve meseleler. In M. Ramazanoğlu & B. Ayaz (Eds.), *Geleceğin eğitimi: Yapay zeka ve dijital öğrenme* (pp. 5-26). Bidge.

Köseoğlu, İ., & Köse, N. (2025). Yetişkinlerin yapay zekaya yönelik tutumlarının belirlenmesi. *Bartın University Journal of Educational Research*, *9*(1), 40-49. https://izlik.org/JA35ER95XM

Lee, D., & Yoon, S. N. (2021). Application of AI-based technologies in the healthcare industry: Opportunities and challenges. *International Journal of Environmental Research and Public Health, 18*(1), 271. https://doi.org/10.3390/ijerph18010271

Mayers, A. (2013). *Introduction to statistics and SPSS in psychology*. Pearson.

Meylani, R. (2024). Artificial intelligence in the education of teachers: a qualitative synthesis of cutting-edge research literature. *Journal of Computer and Education Research, 12*(24), 600-637. https://doi.org/10.18009/jcer.1477709

Öztürk, E. U., & Ilıman, E. (2026). Sağlık alanında eğitim alan öğrencilerin yapay zekâ okuryazarlık düzeylerinin ve yapay zekâ kaygı düzeylerinin belirlenmesi: Ağrı ili örneği. *Doğuş Üniversitesi Dergisi*, *27*(1), 824-841.

Pinto Dos Santos, D., Giese, D., Brodehl, S., Chon, S. H., Staab, W., Kleinert, R., Maintz, D., & Baeßler, B. (2019). Medical students' attitude towards AI: A multicentre survey. *European Radiology*, *29*(4), 1640–1646. https://doi.org/10.1007/s00330-018-5601-1

Pirim, A. G. H. (2006). Yapay zeka. *Yaşar Üniversitesi E-Dergisi*, *1*(1), 81-93. https://doi.org/10.19168/jyu.72783

Ramazanoğlu, M., Çetin, A., & Ayaz, B. (2023). Eğitsel yapay zekaya ilişkin öğretmen adaylarının görüşleri. In M. Ramazanoğlu & B. Ayaz (Eds.), *Geleceğin eğitimi: Yapay zeka ve dijital öğrenme* (pp. 43-58). Bidge.

Saatçioğlu, Ö., & Topsakal, E. (2025). Öğretmen adaylarının yapay zekâya yönelik tutumlarının çeşitli değişkenler açısından incelenmesi. *Uluslararası Toplumsal Bilimler Dergisi*, *9*(2), 168-191.

Sarıkaya, B., & Kavan, N. (2024). Türkçe öğretmeni adaylarının yapay zekâya yönelik tutumlarının incelenmesi. *Elektronik Eğitim Bilimleri Dergisi, 13*(26), 191-203. https://doi.org/10.55605/ejedus.1550010

Schiavo, G., Businaro, S., & Zancanaro, M. (2024). Comprehension, apprehension, and acceptance: Understanding the influence of literacy and anxiety on acceptance of AI. *Technology in Society*, *77*, 102537.

Sevimli Deniz, S. (2022). Yapay zekâ kaygısının incelenmesine ilişkin bir araştırma, *International Social Mentality and Researcher Thinkers Journal, 8*(63), 1675-1677. http://dx.doi.org/10.292

Stein, J. P., Messingschlager, T., Gnambs, T., Hutmacher, F., & Appel, M. (2024). Attitudes towards AI: measurement and associations with personality. *Scientific Reports*, *14*(1), 2909.

Suseno, Y., Chang, C., Hudik, M., & Fang, E. S. (2022). Beliefs, anxiety and change readiness for artificial intelligence adoption among human resource managers: the moderating role of high-performance work systems. *The International Journal of Human Resource Management*, *33*(6), 1209–1236. https://doi.org/10.1080/09585192.2021.1931408

Şen, A. T. (2024). Kamu çalışanlarının yapay zeka kaygı düzeylerinin belirlenmesi: Kastamonu örneği. *Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *17*(2), 232-246. https://doi.org/10.25287/ohuiibf.1384435

Takıl, N., Erden, N. K., & Sarı, A. B. (2022). Farklı meslek grubu adaylarının yapay zekâ teknolojisine yönelik kaygı seviyesinin incelenmesi. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *25*(48), 343-353. https://doi.org/10.31795/baunsobed.1165386

Tan, Ç., Ceylan, Y., & Öztürk, O. (2023). Öğretmenlerin yapay zekaya karşı tutumlarının incelenmesi. *The Journal of Social Sciences*, *67*(67), 72-83. https://doi.org/10.29228/SOBIDER.73772

Turing, A. M. (1950). Computing machinery and intelligence. *Mind, 49*, 236-433. Retrieved: https://courses.cs.umbc.edu/471/papers/turing.pdf

Uysal, İ. & Kılıç, A. (2022). Normal dağılım ikilemi. *Anadolu Journal of Educational Sciences International*, *12*(1), 220-248.

Wang, Y. Y., & Wang, Y. S. (2022). Development and validation of an AI anxiety scale: An initial application in predicting motivated learning behavior. *Interactive Learning Environments, 30*(4), 619-634. Retrieved from https://www.tandfonline.com/doi/full/10.1080/10494820.2019.1674887

Yakut, İ. (2024) Yapay zekâya yönelik tutum ve dindarlık ilişkisi. *Kocatepe İslami İlimler Dergisi*, *7*(1), 37-59. https://doi.org/10.52637/kiid.1426977

Yeniçeri, Ü., & Kenan, A. (2025). Öğretmen adaylarının yapay zekaya yönelik tutum ve kaygılarının çeşitli değişkenler açısından betimsel analizi. *Ege Eğitim Dergisi, 26*(2), 226-245. https://doi.org/10.12984/egeefd.1625648

Yetişensoy, O. (2024). Tomorrow's teachers and AI: Exploring attitudes and perceptions of Turkish prospective social studies teachers. *Eurasian Journal of Teacher Education*, *5*(1), 1-31. https://izlik.org/JA73FE58LY

Yolcu, H. H. (2024). Yapay genel zekâ çağında öğretmen rolünün yeniden tanımlanması: öngörüler. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi (AUAd),* 10(1), 155-167. https://doi.org/10.51948/auad.1383166

Zhang, C., Schießl, J., Plößl, L., Hofmann, F., & Gläser-Zikuda, M. (2023). Acceptance of AI among pre-service teachers: a multigroup analysis. *International Journal of Educational Technology in Higher Education*, *20*(1), 49-71.