



**THE EFFECT OF ARTIFICIAL INTELLIGENCE ANXIETY AND LITERACY ON THE
INTENTION TO USE ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN THE
BUSINESS-TO-BUSINESS (B2B) MARKET**

*İşletmeler Arası (B2B) Pazarda Yapay Zekâ Kaygısı ve Okuryazarlığının Yapay Zeka
Teknolojilerinin Kullanılma Niyeti Üzerindeki Etkisi*

Behlül Can ŞENGÜL

Marmara Üniversitesi, behlulcansengul@gmail.com, İstanbul / Türkiye
<https://orcid.org/0009-0002-2035-1732>

Ceyda AYSUNA TÜRKİYILMAZ

Marmara Üniversitesi, İşletme Fakültesi, İşletme Bölümü, caysuna@marmara.edu.tr,
İstanbul / Türkiye <https://orcid.org/0000-0002-9015-4980>

Yusuf Ozan YILDIRIM

Dicle Üniversitesi, İktisadi ve İdari Bilimler Fakültesi, İşletme Bölümü, yoyildirim@gmail.com,
Diyarbakır / Türkiye <https://orcid.org/0000-0002-0346-2660>

Serdar PİRTİNİ

Marmara Üniversitesi, İşletme Fakültesi, İşletme Bölümü, serdarpirtini@marmara.edu.tr,
İstanbul / Türkiye <https://orcid.org/0000-0002-7838-4863>

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ABSTRACT

This research aims to examine the levels of AI literacy and anxiety towards AI that affect the adoption of AI technologies in business-to-business markets within the framework of the technology acceptance model. The data obtained through an online questionnaire administered to 407 decision-makers operating in various sectors in Turkey revealed AI literacy, efficient knowledge, reduced anxiety, and increased intention to use. In addition, it was determined that anxiety toward artificial intelligence negatively affected the intention to use it. The findings suggest that artificial intelligence literacy should not be limited to technical knowledge but should include ethical awareness and critical evaluation competencies. In this context, the study contributes to the literature and suggests a guiding framework for future research.

Keywords: Artificial Intelligence, Artificial Intelligence Literacy, Artificial Intelligence Anxiety, Business to Business Market (b2b), Artificial Intelligence Technologies.

ÖZ

Bu çalışma, teknoloji kabul modeli çerçevesinde, işletmeler arası pazarlarda yapay zekâ teknolojilerinin benimsenmesine etki eden yapay zekâ okuryazarlığı ve yapay zekâyâ yönelik kaygı düzeylerini incelemeyi amaçlamaktadır. Türkiye’de çeşitli sektörlerde faaliyet gösteren 407 karar vericiye uygulanan çevrim içi anket aracılığıyla elde edilen veriler, yapay zekâ okuryazarlığının özellikle uygulamaya yönelik bilgi düzeyinin kaygıyı azaltıcı ve kullanım niyetini artırıcı etkiler yarattığını ortaya koymuştur. Ayrıca, yapay zekâyâ yönelik kaygının kullanım niyetini olumsuz yönde etkilediği belirlenmiştir. Bulgular, yapay zekâ okuryazarlığının yalnızca teknik bilgi ile sınırlı kalmayıp etik farkındalık ve eleştirel değerlendirme yetkinliklerini de içerecek şekilde ele alınması gerektiğini göstermektedir. Çalışma, bu bağlamda literatüre katkı sunmakta ve gelecekteki araştırmalar için yönlendirici bir çerçeve önermektedir.

Anahtar Kelimeler: Yapay Zekâ, Yapay Zekâ Okuryazarlığı, Yapay Zekâ Kaygısı, İşletmeler Arası Pazar (B2B), Yapay Zekâ Teknolojileri

INTRODUCTION

Artificial intelligence technologies have a wide range of impacts, from business decision-making processes to customer relationships, and offer strategic advantages in business-to-business (B2B) markets. In particular, AI-based solutions have great potential to provide businesses with a competitive advantage, increase efficiency, and reduce costs (Davenport & Ronanki, 2018; Haenlein & Kaplan, 2019). In other words, adopting these technologies in B2B purchasing processes is closely related to data security, ethical responsibility, and risk management. In addition, AI literacy stands out as a competency that determines the capacity of businesses to evaluate AI solutions accurately and manage the potential risks associated with these solutions (Long & Magerko, 2020).

Cost increases in the labor force and difficulties in controlling humans have begun to be replaced by robots and artificial intelligence-supported applications. To illustrate with an example, in 2011, around 400,000 robots were working in Japanese factories, and today, the number of robots is increasing daily. In addition, serious investments have been made in Japan to replace 15% of the workforce with robots by 2025. As a result, in long-term planning, it is predicted that by 2050, there will be more robots than the number of computers in use in the world, and the share of the workforce in the sectors will decrease (Passig, 2011). However, it is forecasted that by 2050, a class of "dysfunctional" will emerge who will have no job and cannot contribute to any process (Harari, 2018). In this process, it will be a necessity for all working classes to receive the necessary equipment to make them more compatible with the developments related to artificial intelligence technologies (Wang & Wang, 2022). In this context, it is known that using artificial intelligence may have adverse effects on humans and the advantages it brings. At the heart of these effects are the effects of artificial intelligence literacy and anxiety. There are various concerns that artificial intelligence may create

adaptation problems, get out of control, replace humans, and affect the structure of society (Akkaya et al., 2021).

When the literature on the use of artificial intelligence applications among businesses is examined, it is noteworthy that there is a limited number of studies. This study aims to contribute to the literature by examining the effects of artificial intelligence literacy and artificial intelligence anxiety on businesses' evaluation of artificial intelligence-based solutions. Within the scope of the study, current findings in the literature are evaluated within the scope of the preference for using artificial intelligence technologies in business-to-business (B2B) markets, the impact of artificial intelligence literacy on adopting these technologies, and the anxiety caused by artificial intelligence. In the general flow of the study, the concepts of artificial intelligence, artificial intelligence anxiety, and artificial intelligence literacy are first explained. Then the effects of artificial intelligence anxiety and literacy on B2B purchasing processes are examined. Finally, the study's findings are discussed, and implications for literature and the business world are presented.

LITERATURE

Artificial Intelligence Anxiety

Artificial intelligence is a rapidly developing field of technology that has been studied in the scientific world since the 1950s. The foundations of artificial intelligence theory were first laid with the question "Can machines think?" in the article "Computing Machinery and Intelligence" by Alan Turing, who is considered one of the pioneers of computer science (Turing, 1950). Within this understanding of whether machines can think, artificial intelligence applications, called advanced systems, began to be used commercially in the early 1980s. Considering these developments, the increase in the amount of data, big data, and advanced computing capacities have accelerated the adoption of artificial intelligence in the commercial field since the 1990s (Cox & Ellsworth, 1997). In the post-2010 period, technologies such as deep learning and neural networks have made the

potential of artificial intelligence visible. More broadly, artificial intelligence is the ability of machines or software to think, learn, and solve problems in a human-like manner. When we look at the class differences of artificial intelligence, narrow artificial intelligence, which is widely used today, focuses on a single task. In contrast, general artificial intelligence refers to systems that can perform a wide range of tasks like humans. Another class, super artificial intelligence, is at the theoretical level and can potentially exceed human intelligence (Russell & Norvig, 2016). However, the development of artificial intelligence has both positive and negative impacts on human life. This technological progress also creates certain uncertainties and risks for individuals' social and economic lives. As a result, it moves people away from a happy and secure environment (Brundage, 2018). Moreover, one of the most fundamental fears of human beings is the fear of uncertainty against the unknown. This situation was first addressed in the literary works of Lovecraft (1927) (Carleton, Gosselin, & Asmundson, 2010), and it has found a place in various works in the following processes.

Artificial intelligence, which had a limited usage area in its early years, has been integrated into all areas of life with the increase in data processing capacities and the development of algorithms in the 21st century. As a result of these developments, artificial intelligence is used to optimize business processes, personalize customer experiences, and make strategic decisions more efficient (Civelek, 2009). Especially in business-to-business (B2B) markets, purchasing AI-integrated products allows companies to gain long-term competitive advantage. However, in addition to the positive aspects of technology, it is seen that it also contains elements of anxiety and fear for businesses as well as individuals (Ha et al., 2011). These concerns stem from factors such as changes in the labor market, ethical issues, data privacy, and lack of transparency. In particular, the increase in AI-driven automation has led to transferring many jobs to machines, raising concerns about unemployment (Brynjolfsson & McAfee, 2019). According to a study conducted at Oxford University, it is estimated that artificial intelligence could lead to job losses of up to 47% in many sectors over the next decade (Frey & Osborne, 2017). In addition to AI's economic impacts, AI technologies' ethical limits are also

debated. The starting points of these debates are the lack of transparency of algorithms, not knowing exactly how decisions are made, and data privacy. Due to these risks, many businesses are cautious when adopting AI technologies. According to a report by the European Commission in 2022, algorithms' transparency and accountability are barriers to the broad adoption of AI systems (European Commission, 2022). The implications of this situation are that trust problems in artificial intelligence persist both in the business world and among individual users. Concerns about AI are influencing business-to-business (B2B) purchasing decisions. Many businesses consider long-term risk factors such as data security before adopting AI-based solutions. In particular, AI solutions that process customer data are considered within the scope of regulatory frameworks such as the General Data Protection Regulation (GDPR), and cautious steps are taken in integration processes due to possible data leakage risks (Accenture, 2020).

Companies are increasing their investments in AI due to the need for innovation and the desire to gain a competitive advantage. According to McKinsey's 2023 study, 63% of businesses prefer these technologies because they increase productivity despite concerns about AI (Cooper, 2024). As mentioned above, while concerns about AI are an important factor affecting business-to-business purchasing decisions, AI's competitive advantage and productivity gains stand out as a counterbalancing factor. Therefore, increasing regulations on ethics, transparency, and data security play a role in addressing these concerns (Jobin et al., 2019). More specifically, concerns about artificial intelligence have increased as technology has developed and has been extensively studied by academics and social scientists. Research findings show a growing concern about the risk of losing jobs, especially among low-skilled workers. At the same time, it has been emphasized that with the rapid development of technology, new talents and skills will be required in the labor market (Frey & Osborne, 2017). Companies adopting artificial intelligence technologies must invest in retraining processes to adapt their employees to these new technologies (Acemoğlu et al., 2022). The lack of transparency in the decision-making processes of artificial intelligence systems and uncertainties

about how algorithms work has created ethical concerns. Especially in artificial intelligence-based decision support systems, the fact that algorithms make biased decisions has led to ethical questioning of these systems. A Harvard University researcher, Cathy O'Neil emphasizes that the lack of transparency in artificial intelligence algorithms can deepen social inequalities (O'Neil, 2017). For this reason, companies tend to prefer more transparent and reliable artificial intelligence systems that align with their ethical responsibilities. The main reason for this trend is that since AI is a technology based on large data sets, privacy and security concerns have become dangerous for companies. Academic studies in line with these concerns have revealed different results regarding the purchase intention of businesses and consumers. Studies on consumer behavior show that concerns about innovative technologies can negatively affect purchase intentions (Venkatesh et al., 2012). Another study has shown that technological innovations can reduce purchase intention by increasing consumers' perceived risk. Accordingly, although consumers recognize the benefits of AI-based solutions, they may hesitate to invest in these technologies due to concerns about security, privacy, and ethics (Kim & Forsythe, 2008).

Research in business-to-business (B2B) markets shows that concerns about artificial intelligence can directly affect purchase intentions. In particular, data security, labor impacts, and ethical issues are among the factors that companies should carefully consider when investing in these technologies. Research on this topic shows that consumers' and businesses' purchase intentions towards AI solutions primarily relate to their trust in these technologies. Distrust in big data and AI technologies, especially data privacy and cybersecurity concern, negatively affects purchase intentions (Choi, 2017). One of the important studies on lack of trust is Eastin's (2002) study. This study examined how a lack of trust in digital technologies negatively affects purchase intention at both consumer and business levels. As a result of the research, Eastin stated that lack of trust postpones the purchase decision and encourages the use of alternative technologies (Eastin, 2002). Similarly, Li and Yi (2020), in their research on artificial intelligence technologies, found that trust in technology

positively affects purchase intention. The study's results emphasized the importance of transparency and accountability while integrating artificial intelligence solutions into business processes. In this framework, it is seen that companies operating in business-to-business markets especially attach great importance to the trust factor when making long-term technology investments (Gefen & Straub, 2000). Businesses have developed strategies to address concerns and increase trust in artificial intelligence (Balçioğlu & Artar, 2024). One example of these strategies is piloting AI solutions before purchasing them. Such practices reduce concerns and strengthen purchase intentions toward the technology (Bhattacharjee, 2001).

Artificial Intelligence Literacy

Artificial intelligence literacy refers to the ability of individuals and organizations to understand and use artificial intelligence technologies efficiently and safely. In addition, AI literacy is not only limited to the ability to use technology but also includes understanding how artificial intelligence works, how it is involved in decision-making processes, and the ethical and social implications of these processes (Long & Magerko, 2020). When literature is examined, it is seen that artificial intelligence literacy is addressed in three main dimensions. These dimensions are technical, ethical, and strategic dimensions, respectively. While the technical dimension requires understanding the working principles of algorithms and data analytics techniques, the ethical dimension includes evaluating the transparency of artificial intelligence systems and their impact on social justice (Jobin et al., 2019). The strategic dimension is related to the long-term competitive advantage of AI in businesses and its integration into business models (Haenlein & Kaplan, 2019). These findings show that in today's world, where artificial intelligence technologies are rapidly spreading, the importance of artificial intelligence literacy is increasing. In addition, with the rapid spread of artificial intelligence technologies, academic research on how technologies are understood, used, and evaluated is increasing daily. AI literacy has gained importance for individuals and businesses, and studies have focused on literacy's dimensions, levels, and impacts. This information has been

productive in understanding the working logic of artificial intelligence applications and using them more reliably and effectively (Yılmaz & Yılmaz, 2023). In this context, businesses with high AI literacy will enable users to evaluate how different AI solutions can be integrated into business processes more consciously and which technologies are more suitable for business needs. This provides a significant advantage in selecting AI-based tools in marketing, supply chain management, and customer relationship management (Huang & Rust, 2021). Another positive feature is that AI literacy improves businesses' risk management on data security and ethics issues. Accordingly, AI systems working on large data sets are important regarding data privacy and security.

On the other hand, businesses that are not AI literate may overlook the risks of data leakage. However, businesses with high AI literacy evaluate security protocols more consciously (Martin & Shilton, 2016). Studies have emphasized that data privacy and ethical considerations should be considered in artificial intelligence applications, and the importance of ensuring the safe use of algorithms has been highlighted. On the other hand, understanding the potential of artificial intelligence technologies offers businesses the opportunity to develop innovative solutions, optimize costs, and integrate these solutions into business processes (Jarek & Mazurek, 2019). Artificial intelligence literacy contributes to businesses' innovation and competitive advantage and helps them gain a stronger position in the market by making strategic decisions based on technology (Haenlein & Kaplan, 2019). Moreover, when the literature on the subject is examined, scale development studies to measure AI literacy have also attracted considerable attention (Long & Magerko, 2020).

RESEARCH DESIGN AND FINDINGS

Research Design

This research examines the factors of AI literacy and AI anxiety that affect the adoption of AI technologies in business-to-business markets within the framework of the technology acceptance model. The main problem of the research is to determine how AI literacy and AI anxiety affect the

adoption process of AI technologies in business-to-business markets. In the research conducted with the participation of decision-makers from different sectors in Turkey, the effects of AI literacy and AI anxiety on the intention to use AI applications were analyzed. In this context, the research assumes that increasing AI literacy can reduce AI anxiety. As anxiety decreases, the intention to use AI will be strengthened thanks to the increased level of knowledge. The study differs from studies on individual consumers by focusing on business-to-business markets. This is because decision-making processes in business-to-business markets are more complex. This research, conducted with participants from business life, aims to contribute to the literature to understand attitudes towards artificial intelligence and adoption processes in business-to-business markets. Since the subject is a current and new one, there are few studies on this subject in literature, which shows that this study can also benefit literature in this respect. In addition, the fact that the study differs from similar studies by focusing on B2B markets instead of consumers draws attention as another factor that emphasizes the importance of the study. One of the scales used in the study is the Artificial Intelligence Anxiety Scale (AIAS). It was developed to assess the anxiety levels of individuals towards artificial intelligence technologies. The scale was created by Wang and Wang (2019) and adapted into Turkish by Akkaya, Özkan, and Özkan (2021). This scale contributes to the understanding of the psychological barriers encountered in the adoption and integration processes of artificial intelligence technologies by determining the concerns of individuals towards artificial intelligence.

The information presented above is summarized in the table below together with important academic studies in relevant international literature.

Table 1: Artificial Intelligence Anxiety Scale (AIAS) Studies

Year	Author(s)	Article
2019	Wang & Wang	Development and validation of an artificial intelligence anxiety scale: an initial application in predicting motivated learning behavior.
2020	Dai, Chai, Lin, Jong, Guo & Qin,	Promoting students' well-being by developing their readiness for the artificial intelligence age
2020	Moreno-Guerrero, López-Belmonte, Marín-Marín & Soler-Costa,	Scientific Development of Educational Artificial Intelligence in the Web of Science
2020	Chiu & Chai,	Sustainable Curriculum Planning for Artificial Intelligence Education: A Self-Determination Theory Perspective

2021	Akkaya, Özkan & Özkan	Akkaya, B., Özkan, A., & Özkan, H. (2021). Yapay zekâ kaygı (YZK) ölçeği: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması.
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Another scale, the Artificial Intelligence Literacy Scale (AILS), was developed to measure individuals' understanding, use, and skills in artificial intelligence technologies. The scale developed by Laupichler et al. (2023) was adapted into Turkish by Fatma Gizem Karaoğlu Yılmaz and Ramazan Yılmaz in the same year. The Artificial Intelligence Literacy Scale aims to contribute to increasing the education and awareness of individuals by evaluating their level of knowledge about artificial intelligence and their attitudes towards these technologies.

The information presented above is summarized in the table below together with important academic studies in relevant international literature.

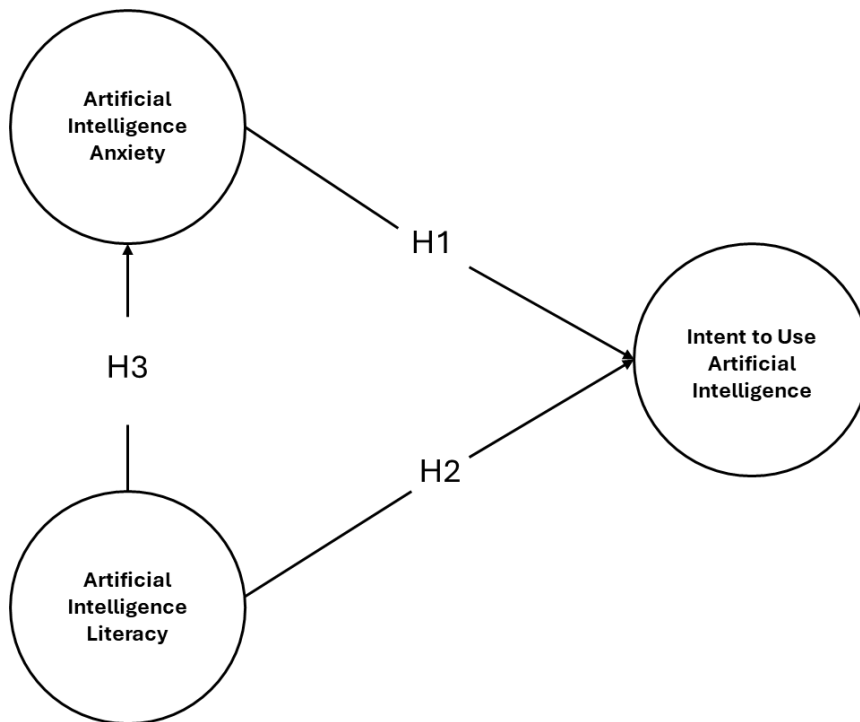
Table 2: Artificial Intelligence Literacy Studies

Year	Author(s)	Article
2023	Laupichler, M. C., Aster, A., Haverkamp, N., & Raupach, T.	Development of the “scale for the assessment of non-experts’ AI literacy”–An exploratory factor analysis.
2025	H Wu, Z Dong	What Motivates Second Language Majors to Use Generative AI for Informal Learning
2025	M Zhou, Q Hu, X Hong, X Song, Y Zhou	Evaluating ChatGPT-4o's Web-Enhanced Responses in Patient Education
2025	C Bohn, C Hand, S Tannir, M Ulrich, S Saniei	American Academy of Orthopedic Surgery OrthoInfo provides more readable information regarding meniscus injury than ChatGPT-4
2023	Yılmaz, F. G. K., & Yılmaz, R.	Yapay zekâ okuryazarlığı ölçeğinin Türkçeye uyarlanması.

In this study, which is based on the Technology Acceptance Model, the effects of knowledge level and anxiety level on adopting artificial intelligence technologies were tried to be determined. The Technology Acceptance Model, first developed by Davis in 1989, is a model created to understand and predict the behavior of computer users (Davis, 1989). Today, this model is widely used to predict individuals' intentions to adopt and use information systems. According to the Technology Acceptance Model, perceived ease of use and usefulness directly affect users' attitudes toward an information system. These attitudes contribute to technology adoption by shaping individuals' intentions to use the system. The theoretical basis of the model is based on the Theory of Reasoned

Action developed by Fishbein and Ajzen in 1975 (Fishbein & Ajzen, 1975). Over time, the Technology Acceptance Model has become one of the most popular models in the literature on adopting information technologies and predicting user intentions and is recognized as a proven framework in various studies (Lu et al., 2003).

Figure 1: Research Model



The hypotheses developed for the research model indicated in Figure 1 above are given below respectively. According to this;

H1: Artificial intelligence anxiety has a statistically significant and negative effect on the intention to use artificial intelligence.

H2: Artificial intelligence literacy has a statistically significant and positive effect on the intention to use artificial intelligence.

H3: Artificial intelligence literacy has a statistically significant and negative effect on artificial intelligence anxiety.

FINDINGS

In this study, the effects of artificial intelligence literacy and anxiety towards artificial intelligence on the adoption of artificial intelligence technologies by businesses are analyzed in detail. The research was conducted using quantitative methods, and data was collected through a questionnaire. Within the data collection process, a survey was conducted with 407 participants working in decision-making positions of companies to evaluate AI literacy, AI anxiety, and attitudes and intentions toward AI applications. In the online survey, participants were asked to answer questions about their level of knowledge about artificial intelligence, their concerns about these technologies, their attitudes towards artificial intelligence applications, and their intention to use them (1 = Strongly disagree - 7 = Strongly agree). The data collection process of the research aimed to reflect the views of influential individuals in the decision-making process and lasted four weeks starting in December 2024. In the research findings, the demographic characteristics of the participants were first assessed, and the results were reported by gender, age group, education level, and sector. Then, factor and reliability analyses of the variables used in the designed research model were conducted, and the research hypotheses were evaluated.

Table-3 below presents the demographic characteristics of the participants. This table shows the demographic distribution of 407 respondents.

Table 3: Demographic Distribution of Participants

Variable	Groups	Frequency	Percentage
Gender	Male	280	68,8
	Female	127	31,2
	Total	407	100
Age	18-24	8	2,0
	25-34	158	38,8
	35-44	195	47,9
	45+	46	11,3
	Total	407	100
Graduation	High school and below	7	1,7
	Bachelor's degree	332	81,6
	Master's Degree	54	13,3
	PhD	14	3,4
	Total	407	100

According to Table 3 above, 68.8% of the participants were male (280 people), and 31.2% were female (127 people). This shows that the majority of the respondents were male. This distribution can be explained by the nature of the target group of the research or the impact of gender ratios in specific sectors. For example, it is known that men are more likely to be employed in sectors such as technology and agriculture (Powell et al., 2009). 47.9% of the participants (195 people) were between the ages of 35-44, the largest age group. The second largest group is the 25-34 age group, with 38.8% (158 people). Regarding other age groups, the 18-24 age range was represented by 2.0% (8 respondents), and the 45 and over age group was represented at lower rates with 11.3% (46 respondents). This distribution shows that most participants are middle-aged individuals active in business life. When the educational level findings are analyzed, it is seen that 81.6% of the participants (332 people) have a bachelor's degree. Master's degree graduates, 13.3% (54 people), and doctorate graduates, 3.4% (14 people), are individuals with postgraduate education. Participants with a high school education or less have an exceptionally low rate of 1.7% (7 people). These results show that the individuals who participated in the research have a high level of education.

Table 4 below presents the characteristics of the participants' work profiles. The table shows the sector, department and position distribution of 407 respondents.

Table 4: Participants' Work Profiles

Variable	Groups	Frequency	Percentage
Sector	IT	33	8,1
	Education	13	3,2
	Finance	29	7,1
	Food	54	13,3
	Service	52	12,8
	Construction	32	7,9
	Logistics	38	9,3
	Retail	27	6,6
	Health	7	1,7
	Agriculture	73	17,9
	Textile	19	4,7
	Tourism	17	4,2
	Production	13	3,2
	Total	407	100
Department	R&D Department	52	12,8
	Finance Department	46	11,3
	Legal Department	6	1,5

	Human Resources Department	20	4,9
	Marketing and Sales Department	62	15,2
	Production Department	136	33,4
	Administration Department	85	20,9
	Total	407	100
Position	Support Personnel	10	2,5
	Entry Level Positions	9	2,2
	Mid-Level Management	55	13,5
	Experts and Technical Staff	318	78,1
	Top Management (C-Level)	15	3,7
	Total	407	100

According to Table 4 above, the most significant % of respondents come from the agricultural sector, 17.9% (73 people). This suggests that the agricultural sector is highly interested in artificial intelligence applications. When other sectors are analyzed, the food sector is represented by 13.3% (54 respondents) and the service sector by 12.8% (52 respondents). On the other hand, participation from the health (1.7% (7 people) and education (3.2% (13 people) sectors was more limited. Looking at the departments where the participants work, it is seen that the largest group is in the production department, with 33.4% (136 people). This result shows that integrating production processes with artificial intelligence is an important focus. Other prominent departments include the administration department, with 20.9% (85 people), and the marketing and sales department, with 15.2% (62 people). Participation from the legal department was low at 1.5% (6 people). When the respondents' positions are analyzed, it is seen that the vast majority are experts and technical staff, 78.1% (318 people). This shows that the research collects data from individuals with technical knowledge. Middle management represents a smaller group with 13.5% (55 people), while senior management (C-level) accounts for 3.7% (15 people). Entry-level positions accounted for 2.2% (9 people) and support staff for 2.5% (10 people). In general, the survey targets experienced and knowledgeable individuals.

Table 5 below presents the factor, reliability and normality findings of the scales used in the study.

Table 5: Factor, Reliability, Normality Findings

Variable	Factor	Kmo / Bartlett	TAV	#	Factor Loadings	α	Mean	Skewness	Kurtosis
Anxiety	Learning	,968/0	87,603	7	,720-,834	0,975	4,29	-0,745	-1,001
	Job Loss			6	,645-,768	0,964	4,57	-0,911	-0,731
	Controlled by AI			3	,676-,754	0,958	4,52	-0,764	0,765
Literacy	Technical Knowledge	,973/0	81,007	11	,698-,827	0,974	4,68	-0,872	-0,407
	Practical Knowledge			10	,680-,836	0,976	4,87	-1,079	0,039
Intention to Use		,862/0	95,604	4	,973-,984	0,985	5,21	-0,727	0,854

According to Table 5, the AI Anxiety Scale consists of three factors: "Learning," 'Job Loss' and 'Being Controlled.' The loadings of these factors range between 0.720-0.834, 0.645-0.768, and 0.676-0.754, respectively. Cronbach Alpha values of the factors are 0.975, 0.964 and 0.958, respectively, indicating that the internal consistency of the scale is high. According to normality, skewness and kurtosis values were calculated as -0.745 and -1.001 for "Learning," -0.911 and -0.731 for "Job Loss," and -0.764 and 0.765 for "Being Controlled."

The Artificial Intelligence Literacy Scale consists of two factors: "Technical Knowledge" and 'Practical Knowledge.' Factor loadings are in the range of 0.698-0.827 and 0.680-0.836, respectively. Cronbach's Alpha values were calculated as 0.974 and 0.976, indicating the scale has high reliability. In normality, skewness and kurtosis values were calculated as -0.872 and -0.407 for "Technical Knowledge" and -1.079 and 0.039 for "Practical Knowledge". These findings indicate that normality assumptions are met. The Intention to Use Artificial Intelligence Scale has factor loadings ranging between 0.973-0.984, and Cronbach's Alpha value was calculated as 0.985. This value confirms that the scale has a high level of reliability. In the normality analysis, the skewness value was -0.727, and the kurtosis value was 0.854, indicating that the normality assumptions were met.

Table 6 below presents the test results of the research hypotheses. While evaluating the regression findings related to the hypotheses tested in Table 6, the model, ANOVA and coefficients table will be interpreted, respectively.

Table 6: Hypothesis Testing (Regression Results)

Hypothesis	Independent	Dependent	Model	Anova	Coefficients Table		
	x	Y	R ²	F	Constant	Beta	p
H ₁	Learning	Intention to Use	0,123	18,842	6,173	-0,439	0,001
	Job Loss					0,243	0,044
	Controlled by AI					-0,131	0,225
H ₂	Technical Knowledge	Intention to Use	0,585	284,889	1,935	0,003	0,968
	Practical Knowledge					0,763	0,001
H ₃	Technical Knowledge	Learning	0,152	36,07	6,083	0,352	0,001
	Practical Knowledge					-0,65	0,001
	Technical Knowledge	Job Loss	0,082	18,16	6,144	0,068	0,474
	Practical Knowledge					-0,344	0,001
	Technical Knowledge	Controlled By	0,077	16,924	5,988	0,155	0,102
	Practical Knowledge					-0,401	0,001

According to Table 6, the hypothesis tests used in the research revealed the relationships between AI anxiety, literacy and intention to use in detail.

Within the scope of hypothesis H1, the effect of artificial intelligence anxiety on intention to use was examined. The beta value for the Learning factor was calculated as -0.439 ($p=0.001$), indicating that anxiety has a significant and negative effect on intention to use. In contrast, the Job Loss factor was found to have a significant and positive effect on intention to use (Beta=0.243, $p=0.044$). However, no significant effect was found for the Controlled by AI factor (Beta=-0.131, $p=0.225$). According to the research findings, hypothesis 1 is partially accepted.

In line with hypothesis H2, the effect of AI literacy on intention to use was evaluated. The effect of Practical Knowledge factor on usage intention is quite strong (Beta=0.763, $p=0.001$). This finding indicates that increasing knowledge about artificial intelligence applications positively affects the intention to use. On the other hand, the effect of the Technical Knowledge factor on intention to use was insignificant (Beta=0.003, $p=0.968$). The overall explanatory rate of the model ($R^2=0.585$) is high and supports the determinant role of AI literacy on intention to use. According to the research findings, hypothesis 2 is partially accepted.

Within the framework of hypothesis H3, the effect of AI literacy on anxiety was examined. The effect of the Technical Knowledge factor on the Learning factor is positive and significant ($\text{Beta}=0.352$, $p=0.001$), indicating that an increase in the comprehension dimension may increase anxiety. On the other hand, the effect of the Practical Knowledge factor on Learning is negative and significant ($\text{Beta}=-0.65$, $p=0.001$), which means that an increase in the level of knowledge about artificial intelligence applications decreases anxiety. The effects of the Practical Knowledge factor on Job Loss and Being Controlled by AI factors are also negative and significant ($\text{Beta}=-0.344$, $p=0.001$; $\text{Beta}=-0.401$, $p=0.001$), indicating that practical knowledge about artificial intelligence reduces anxiety about job loss and being controlled by ai. However, the Technical Knowledge factor's effects on these variables were insignificant ($p>0.05$). According to the research findings, hypothesis 3 is partially accepted.

CONCLUSION

Based on the technology acceptance model, this research examines the factors of AI literacy and AI anxiety that affect AI adoption in business-to-business (B2B) markets. Accordingly, a study was conducted with decision-makers in Turkey to determine the impact of AI anxiety and AI literacy on the intention to use AI applications. When the demographic characteristics of the participants are examined, it is seen that their education levels are generally high, they consist of individuals active in the business world, and men in the middle age group are predominant. When the research data is analyzed, it is observed that the subjects who participated in the research consisted of employees with professional knowledge and experience. The participation of employees with high levels of education increases the generalizability of the results and contributes to obtaining reliable findings (Bryman, 2012). When the working profiles of the users who participated in the research are analyzed, it is found that employees with technical knowledge who are actively involved in production processes and concentrated in specific sectors such as agriculture stand out.

Research findings show that AI anxiety negatively affects individuals' intention to use AI. It has been observed that individuals with high concerns about artificial intelligence are less willing to use these technologies. This suggests that negative perceptions of artificial intelligence constitute an important obstacle to adoption. On the other hand, it was found that artificial intelligence literacy positively affects individuals' attitudes towards using artificial intelligence. It was observed that individuals with practical knowledge of artificial intelligence were more willing to use these technologies. This finding reveals that it is important for individuals to gain direct experience to encourage using artificial intelligence. However, the effect of AI literacy on anxiety differs. It is observed that anxiety decreases as the level of practical knowledge increases, but an increase in technical knowledge may increase anxiety. This suggests that mastering technical details may increase individuals' awareness of artificial intelligence risks and anxiety. Considering this situation, it was concluded that AI anxiety reduces the intention to use AI, while practical knowledge reduces anxiety by increasing this intention. However, it should be considered that technical knowledge may increase individuals' anxiety towards artificial intelligence. In this direction, it is recommended that practical training should be emphasized to encourage the use of artificial intelligence, and awareness-raising activities should be conducted to prevent technical knowledge from causing anxiety in individuals.

The findings show that increasing AI literacy is important in reducing individuals' anxiety towards these technologies and increasing their intention to use them. Increased knowledge, especially in application dimensions, enables individuals to adopt AI technologies more easily (Venkatesh & Davis, 2000). However, the adverse effect of anxiety on intention to use reveals that psychological factors are determinants in the adoption of AI technologies. Within the technology acceptance model framework, perceptual risks and individual concerns are among the important components (Davis, 1989; Kim & Kankanhalli, 2009). It was determined that the participants' work-related artificial intelligence concerns were more prominent than other factors. The transformation created by artificial

intelligence technologies in business processes may lead to concerns such as uncertainty and job loss. On the other hand, the knowledge and skill levels of the participants regarding artificial intelligence applications are high. It is understood that the respondents' education, experience, and technical competencies enable them to use artificial intelligence technologies in business processes effectively. In this direction, it has been determined that the respondents' intention to use artificial intelligence is high. It is seen that the advantages provided by artificial intelligence technologies, such as efficiency, time saving, and decision support mechanisms, strengthen the respondents' positive attitudes towards technology.

Durmuş's (2024) studies on marketing and consumer behavior strengthen the theoretical background of this research. It is seen that artificial intelligence concerns are shaped not only by technological but also by ethical, data security, and social perception dimensions. Durmuş, especially with his studies on adaptation to innovative technologies and the determinant role of trust perception in this process, has enabled the concept of artificial intelligence literacy to be addressed in a broader context. The findings showing that the adaptation process towards innovative technologies is shaped by individuals' psychological tendencies and perceptual factors align with studies focusing on social media addiction and the concept of "fear of missing out" in the online environment (Durmuş et al., 2024). In this context, research examining the effects of technologies on marketing strategies offers an important contribution to understanding the multidimensional nature of AI anxiety. Especially in light of its contributions to data-driven decision-making processes, it is recommended that awareness-raising programs be developed to increase AI literacy. These programs can effectively reduce AI anxiety by increasing the knowledge level of individuals and supporting businesses in adapting to technologies more consciously. In this way, the barriers to adopting AI technologies will be reduced, and the role of these technologies in the business world will be made more effective.

This research presents detailed findings by examining the impact of AI literacy and anxiety on the acceptance processes of technological innovations in business-to-business (B2B) markets. The results

show that AI literacy increases individuals' knowledge levels, strengthens trust in technology, and reduces anxiety. The study reveals that businesses can increase organizational success and competitive advantage by adopting AI-based solutions more efficiently. Increasing the level of knowledge in the application dimension enables individuals and businesses to integrate innovative technologies faster and more effectively. Accordingly, a roadmap is presented for the broader adoption of AI technologies in business. However, more research is needed to understand the sectoral differences of AI applications. In particular, the motivations and barriers in the adaptation processes of businesses in different fields, such as agriculture, manufacturing, and service sectors, need to be analyzed comparatively. In addition, investigating the impact of cultural factors on perceptions and usage intentions towards artificial intelligence can contribute to global adoption strategies. In future research, the role of cultural values, organizational structures, and local technological infrastructures in AI applications should be examined in more depth. Investigating the effectiveness of educational programs to increase AI literacy also stands out as a critical area for future studies.

This research aims to make theoretical and practical contributions to literature by examining the impact of AI literacy and anxiety on technology adoption in business-to-business markets. The research results reveal that AI anxiety is shaped by technology and multidimensional factors such as ethics, data security, and social perception. According to the research results, considering the role of technology in marketing strategies and data-based decision-making processes, it is recommended that awareness-raising programs be developed to increase artificial intelligence literacy. Such programs will increase individuals' trust in technology and contribute to businesses using artificial intelligence-based applications more consciously and effectively. In addition, evaluating how businesses handle the ethical dimensions of AI solutions and data security standards increases confidence in technology. Such studies not only provide theoretical depth but also offer concrete implementation suggestions that will enable businesses to use artificial intelligence more in their strategic decision-making

processes. Due to the rapidly changing technological innovations in this type of research, the risk of the research findings losing their validity over time should be considered.

In conclusion, although this research primarily focuses on the agricultural sector, it is important to emphasize that the applications of artificial intelligence (AI) technologies are highly significant across various other industries. For example, in the manufacturing sector, AI contributes to process automation and increased productivity, whereas in the service sector, it enhances customer experience and reduces operational costs. In high-risk domains such as finance and cryptocurrency, AI is actively utilized in areas such as fraud detection, risk analysis, and automated transaction systems. While artificial intelligence enables faster and more accurate decision-making by analyzing large data sets, it also supports the development of proactive measures against security threats (Kocabıyık, 2024). In this context, examining inter-sectoral differences is essential to fully uncover the potential of AI technologies.

To ensure the effective and sustainable adoption of AI technologies, sector-specific policies and strategies must be developed. To increase artificial intelligence literacy in organizations, customized training programs should be designed, and these programs should be constantly updated to increase the technical competencies of employees. Government-funded AI integration grants should be provided to SMEs, along with access to professional consultancy services. Furthermore, pilot projects should be promoted through university-industry collaborations, allowing both practical field testing of AI technologies and the professional development of young specialists. Last but not least, the ethical dimensions of AI applications need to be reconsidered for each sector, and regulatory frameworks, particularly regarding data privacy, transparency, and algorithmic fairness, need to be established accordingly. These initiatives will help ensure that AI technologies contribute to an inclusive, socially beneficial, and long-term transformation across industries.

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