



## A Study on the Impact of Artificial Intelligence Anxiety on the Innovation-Oriented Behaviours of Employees

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### ABSTRACT

The main purpose of this study is to investigate the effect of artificial intelligence anxiety on innovation-oriented behaviours of employees. In addition, it was examined whether demographic characteristics differ on artificial intelligence anxiety and innovation-oriented behaviours. The universe of the research consists of private sector employees working in Istanbul in 2022. Using the convenience sampling method, 412 private sector employees were reached between 26.06.2022 and 26.08.2022. Data analysis was done with SPSS 24.0. T test and ANOVA test were used in the analysis of demographic variables. The relationship between the scale items was analysed with the Pearson correlation test. The effect between the scale items was analysed with the regression test. According to the results of the analysis, artificial intelligence anxiety has a positive and significant effect on the innovation-oriented behaviours of the employees. ( $p<0.05$ ) Artificial Intelligence configuration score shows significant differences in terms of sector ( $p<0.05$ ) In addition, it has been understood that artificial intelligence anxiety and innovation-oriented behaviour show significant differences according to demographic characteristics. It is thought that the study will reduce anxiety in line with the proposed solutions to artificial intelligence anxiety and innovation-oriented behaviours experienced in the private sector, and it will also contribute to the creation of positive working environments where employees can adapt to innovation, change and transformations, and contribute to the organization by constantly improving themselves.

**Keywords:** Artificial Intelligence Anxiety, Innovation Orientation, Artificial Intelligence, Innovation

**JEL Classification:** M1, M12, M54, M52

## Yapay Zekâ Kaygısının Çalışanların Yenilik Odaklı Davranışlarına Etkisine Yönelik Bir Araştırma

### ÖZ

Bu çalışmanın temel amacı, yapay zekâ kaygısının çalışanların yenilik odaklı davranışlarına etkisinin araştırılmasıdır. Ayrıca demografik özelliklerin, yapay zekâ kaygısı ve yenilik odaklı davranışlar üzerinde farklılık gösterip göstermediğine bakılmıştır. Araştırmanın evrenini, İstanbul ilinde görev yapmakta olan özel sektör çalışanları oluşturmaktadır. Kolayda örneklem yöntemi kullanılarak 412 özel sektör çalışanına ulaşılmıştır. Verilerin analizi SPSS 24.0 ile yapılmıştır. Demografik değişkenlerin analizinde t testi ve ANOVA testi kullanılmıştır. Ölçek maddeleri arasındaki ilişki Pearson korelasyon testi ile analiz edilmiştir. Ölçek maddeleri arasındaki etki ise regresyon testi ile analiz edilmiştir. Analiz sonuçlarına göre yarı zamanlı çalışan bireylerin sabit, öğrenme, iş değiştirme, sosyo teknik körlük algıları tam zamanlı çalışan bireylere göre daha yüksek olduğu gözlenmiştir ( $p<0,05$ ). Yapay zekâ kaygısının çalışanların yenilik odaklı davranışları üzerinde pozitif yönlü anlamlı bir etkisi bulunmaktadır. Yapay Zekâ Yapılandırması puanı sektör bakımından anlamlı farklılıklar göstermektedir ( $p<0,05$ ). Ayrıca yapay zekâ kaygısı ve yenilik odaklı davranış demografik özelliklere göre anlamlı farklılıklar gösterdiği anlaşılmıştır. Bu sonuçlar değerlendirilerek önerilerde bulunulmuştur. Çalışmanın, özel sektörde yaşanan yapay zekâ kaygısı ve yenilik odaklı davranışlara önerilen çözümler doğrultusunda kaygının azalmasını sağlayacağı, ayrıca kaygı yerine çalışanların yeniliğe, değişim ve dönüşümlere uyum sağlayabilecekleri, kendilerini sürekli geliştirerek kuruma da aynı zamanda katkı sağlayabilecekleri pozitif çalışma ortamlarının yaratılmasına katkı sağlayacağı düşünülmektedir.

**Anahtar Kelimeler:** Yapay Zekâ Kaygısı, Yenilik Odaklılık, Yapay Zekâ, Yenilik

**JEL Sınıflandırması:** M1, M12, M54, M52

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## **1. INTRODUCTION**

Today, there is rapid change and transformation in the technological sense. All institutions and organizations must adapt to these changes and transformations to survive. Technological developments, impacting every aspect of our lives, greatly benefit humanity. However, concerns about the future development of artificial intelligence also appear in many places. The most well-known concern is that artificial intelligence has the potential to get out of control (Akkaya, Özkan, & Özkan, 2021: 1127). Therefore, most concerns about artificial intelligence are based on confusion and misunderstanding about what artificial intelligence is (Johnson & Verdicchio, 2017). Although transitioning to a new situation can always be painful, minimizing all fears and anxieties will benefit a success. The study objective is to examine the effect of artificial intelligence anxiety of private sector employees on their innovation-oriented behaviours. In addition, the study also tries to determine whether demographic characteristics differ in artificial intelligence anxiety and innovation-oriented behaviours. The questionnaire form used in the research consists of 3 parts. The first part is reserved for demographic characteristics, the second for the “Artificial Intelligence Anxiety Scale,” and the third for the “Innovation Orientation Scale.” A 5-point Likert scale was used in the survey.

The research universe comprises private sector employees from different sectors in Istanbul in 2022. For the convenience sampling method, 412 private sector employees were contacted between 26.06.2022 and 26.08.2022. The study used SPSS 24.0 for data analysis, the T-test and the ANOVA test for demographic variable analysis, and the Pearson correlation test to determine the relationship between the scale items. The effect between the scale items was analysed with the regression test. Suggestions were made depending on the study findings. The study is thought to reduce the employees' artificial intelligence anxiety levels for the solutions based on innovation-oriented behaviours, help them adapt to innovation, change, and transformation, and contribute to designing positive business environments where employees can add value to their organization through self-improvement.

## **2. CONCEPTUAL FRAMEWORK**

### **2.1. Artificial Intelligence Anxiety**

The concept of "artificial intelligence" has become a curious subject today as intelligence, an abstract concept of its own, is codified with the concept of artificial. The emergence of the concept of "artificial intelligence" dates back to the 1950s. Based on the definitions of artificial intelligence, it can be briefly considered as "the science of machines that can think like humans" (Pirim, 2006: 84). In a broader expression, artificial intelligence is a science contributing to the development of computer systems in subjects such as visual perception, speaking, recognition, decision-making, and translation between languages, just as human intelligence does (Lillehaug and Lajoie, 1998: 198). Artificial intelligence consists of systems mimicking certain human behaviours (data computing, medical diagnosis, etc.). Although significant developments have been made in the field of artificial intelligence today, it is thought that the level of research is still in the incubation phase (Demirhan, Kılıç, & İnan, 2010: 32). While artificial intelligence technologies are developing rapidly, some questions arise: "Will the human race disappear?" "Will the human workforce be replaced by robots?" "Can artificial intelligence tools replace human power and intelligence in health?" (49 Journal of Academic Value Studies, 8(1), 2022, javstudies.com). It is thought that artificial intelligence technologies may force people to struggle with more difficulties than in the past.

Moreover, considering the speed of development of artificial intelligence technology, it is possible to say that these difficulties may soon be observed. However, according to Jarrahi (2018),

even if artificial intelligence technologies are currently very talented, they may fail to meet the favourable result in tasks requiring creativity, imagination, and intuition. Since artificial intelligence lacks such elements as emotional intelligence, it is considered unrealistic to think that artificial intelligence can threaten human beings. Therefore, it is more meaningful and realistic to fear not the artificial intelligence itself but its misuse for wrong reasons (Erismis, B., Karabela, S. N., Eksi, F., Karandere, F., Dogan, B., Okay, F., & Yasar, K. K., 2021). In artificial intelligence, imagination, intuition, and creativity are essential for people's confidence levels. In order to overcome these trust problems, studies continue to include human-specific features such as common sense and intuition in artificial intelligence. However, while some researchers have positive opinions on this issue, some have opinions that this is not possible. When the literature is examined, the concept of technophobia, which means abnormal fear and anxiety about health technologies, draws attention (Ha, Page and Thorsteinsson, 2011: 17). According to the concept of technophobia, if technology cannot be adapted, this situation negatively affects both business and private life of people and creates fear and anxiety against technology. Technophobia expresses much more than the daily fear of computers (Taş & Turanlıgil, 2020).

Technology-related concerns, which are situational, can take various forms, and the three most important concerns are explained as follows: The first two concerns are based on an optimistic view that technology will continue to grow and perhaps accelerate. A common concern is that technological progress will lead to the widespread substitution of machines for human labour, possibly leading to technological unemployment and increasing inequality in the short run despite its long-term benefits. The technological process's moral effects on human well-being are also a common concern. The third concern is a pessimistic one. Pessimists state that the era of significant technological progress has already been completed (Mokyr, Vickers, & Ziebarth, 2015:32).

## **2.2. Innovation Orientation**

Innovation has four essential factors: new ideas, people, processes, and institutional context. It is defined as the development and implementation of new ideas by people who transact with others over time within an institutional system (Van de Ven, 1986: 590). According to Porter, most innovations are mundane and incremental due to accumulating small insights and advances rather than a single major technological breakthrough. It often includes ideas that are not even "new" and are available but never vigorously pursued. At the same time, innovation always includes investments in skills and knowledge, physical assets, and brand reputation. The concept initially emerged as product and service innovation to ensure businesses' sustainability, provide a competitive advantage, and survive in aggressive market conditions (Üzüm, B., Şenol, L., & Dadashova, R., 2020). However, with the developments and innovations in every field, innovation is classified into product, process, managerial, marketing, organizational, technological, and re-innovation. The concept of innovation orientation is used in many innovation literature studies (Manu, F. A., 1992). One of the first to mention this concept, states that innovation orientation covers the company's entire innovation programs as a strategic concept determining the direction of the business while dealing with the markets. After grasping the constant changes in the market, the know-how to develop the necessary processes in the business and create dynamic capabilities at the same time is expressed as innovation orientation. Innovation orientation is conceptualized with three components: philosophy of learning, strategic instruction, and functional harmony (Siguaw, Simpson, and Enz 2006: 558).

### 2.3. Relationships Between Concepts

Artificial intelligence anxiety in organizations can affect the innovation-oriented behaviour of employees, as suggested by literature studies.

Filiz et al. point to a significant difference between health professionals' average artificial intelligence anxiety and the socio-demographic variables of education and job in the institution. (Filiz, E., Güzel, Ş., & Şengülab, A. 2022). Furthermore, Kolcu and Başer suggest that artificial intelligence contributes to increasing patient safety (Başer, A., Altuntaş, S. B., Kolcu, G., & Özceylan, G., 2021). Sevda and Sezgin conclude that artificial intelligence applications cause concerns about social classification. As a result of the study, it has been determined that algorithmic biases cause social classification and concerns and that a social structure is needed (Sevda, Ü., & Sezgin, A. A. 2021). Reveals that when businesses exhibit stakeholder-oriented and innovation-oriented behaviour, the performance of the business is positively affected. The study results determine that innovation orientation partially mediates the relationship between stakeholder orientation and business performance (Şenerol, H, 2020). As a result of the research conducted by Aydın in manufacturing companies located in organized industrial zones, it has been determined that sales control systems have an indirect and positive effect on firm performance with the mediation effect of market orientation (Aydın, U. B, 2021). No study has been found in the literature to determine the effect of artificial intelligence on innovation-oriented behaviours.

## 3. RESEARCH METHODOLOGY

### 3.1. Research Objective

The study's objective is to examine whether private sector employees' artificial intelligence anxiety affects their innovation-oriented behaviours.

### 3.2. Research Model and Hypothesis

This study assumes that the artificial intelligence anxiety of private sector employees affects their innovation-oriented behaviours. Accordingly, the following hypotheses have been proposed:

**H1:** Artificial intelligence anxiety of employees in the private sector affect their innovation-oriented behaviours positively and significantly.

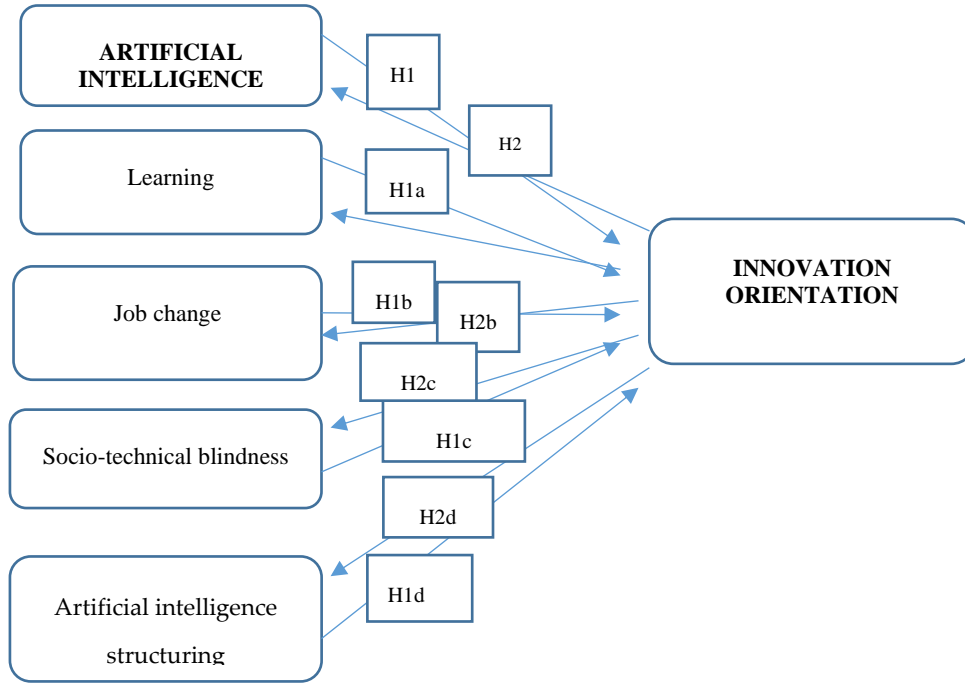
**H1a:** Employees' learning in the private sector positively and significantly affects innovation orientation.

**H1b:** Job change of employees in the private sector affects innovation orientation positively and significantly.

**H1c:** Sociotechnical blindness of private sector employees positively and significantly affects innovation orientation.

**H1d:** Artificial intelligence configuration of private sector employees positively and significantly affects innovation orientation.

The research model on the relationships between the artificial intelligence concerns of private sector employees and the sub-dimensions of their innovation-oriented behaviours is shown in Figure 1 below.



**Figure 1:** Research Model

### 3.3. Universe and Sample of the Research

The research universe comprises employees from education, information sector, finance, construction, culture, art and design, Commercial (Sales and Marketing), electricity and electronics, health, transportation, logistics and communication, media, communication, and publishing industries, as well as food, textile, ready-to-wear and leather, automotive, tourism, accommodation, food and beverage services, social and personal services sectors in Istanbul between June 2022 and August 2022. Ethics committee approval was obtained from Istanbul Esenyurt University. For the convenience sampling method, 412 employees were contacted through an online survey between 01 November - 30 February 2022.

### 3.4. Data Collection Tools of the Research

The questionnaire form used in the research consists of 3 parts. The first part was for demographic characteristics; the second was for the "Artificial Intelligence Anxiety Scale," and the third was for "The Innovation Orientation Scale." A 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree) was used in the questionnaire. A 5-question form was created, including demographic information, gender, total work experience, working style, sector, and the number of people working in the workplace.

The second part of the questionnaire is reserved for the Artificial Intelligence Anxiety scale (21 statements) developed by Wang and Wang (2019) and adapted into Turkish by Akkaya, Özkan, and Özkan (2021). The Artificial Intelligence Anxiety scale consists of four dimensions: learning, job switching, sociotechnical blindness, and artificial intelligence structuring. As a result of the reliability analysis performed by Akkaya, Özkan, and Özkan (2021), the Cronbach Alpha value was obtained as 0.809. Therefore, the scale is seen to have high reliability. Considering the Cronbach Alpha values for each sub-dimension of the scale, the value of the first sub-dimension was 0.886, and the value of the second sub-dimension was 0.884. The value of the third sub-dimension was 0.892, and the value of the fourth sub-dimension was 0.962. Accordingly, the

internal consistency coefficient of the scale was accepted to be reliable. The third part of the questionnaire is reserved for the Innovation Orientation scale (6 statements) used by Şenerol (2020) in his doctoral study in accommodation enterprises (Şenerol, H, 2020). The scale consists of one dimension. The Cronbach Alpha value of the innovation orientation scale was given as 0.949. It is seen that the internal consistency values of the items in this scale are extremely high than the generally accepted value of 0.70.

### 3.5. Analysis Method of the Research

Data analysis was done with SPSS 24.0. The scale scores were calculated, and the kurtosis and skewness coefficients were examined to determine the conformity of the scores to the normal distribution. The kurtosis and skewness values obtained from the scales are between +3 and -3 for normal distribution (Groeneveld and Meeden, 1984; Moors, 1986; Hopkins and Weeks, 1990; De Carlo, 1997). The descriptive statistics and reliability coefficients of the scales are shown in Table 1 below.

**Table 1:** Descriptive Statistics

	n	Minimum	Maximum	Average.	ss
Learning	416	5.00	25.00	11.00	5.38
Job Change	416	4.00	20.00	10.68	4.60
Socio-technical blindness	416	4.00	20.00	10.99	4.63
Artificial Intelligence Structuring	416	3.00	15.00	8.05	3.59
Artificial Intelligence Anxiety	416	16.00	80.00	40.72	15.67
Innovative Orientation	416	6.00	30.00	18.95	6.58

According to the analysis results, the average Learning score is 11.00, and the average Job Switching score is 10.68. The average Sociotechnical Blindness is 10.99, and the average Artificial Intelligence Configuration is 8.05. The average Artificial Intelligence Anxiety is 40.72, and the Innovation-Orientation average is 18.95.

**Table 2:** Kurtosis and Skewness Values

	n	Skewness	Kurtosis
Learning	416	0.702	-0.134
Job Switches	416	0.071	-1.012
Socio-technical Blindness	416	0.026	-0.896
Artificial Intelligence Structuring	416	0.214	-0.865
Artificial Intelligence Anxiety	416	0.064	-0.518
Innovation Orientation	416	-0.209	-0.465

Analysis shows that each score's kurtosis and skewness coefficients are between -3 and +3. According to this result, it was concluded that the scores showed a normal distribution. Parametric test techniques were used in the study due to the normal distribution of scores. The t-test and ANOVA test were used to analyse the variation of the scale score according to demographic characteristics. While the t-test was used to analyse demographic variables with two groups, the ANOVA test was used to analyse variables with k ( $k > 2$ ) groups. However, while the relationship between the scale scores was analysed with the Pearson correlation test, the effect of

artificial intelligence anxiety on the innovation-oriented behaviours of the employees was analysed with the regression test.

#### 4. FINDINGS

Table 3 below shows the distribution of health personnel participating in the research according to demographic variables.

**Table 3:** Distribution of Demographic Characteristics

		n	%
Please state your gender	Female	286	68.75
	Male	126	30.29
	Prefer not to say	4	0.96
Please state your total Business Experience	0-3 years	278	66.83
	4-10 years	108	25.96
	11-20 years	22	5.29
	21 years and more	8	1.92
Please state your contract	Fulltime	190	45.67
	Part-time	100	24.04
	Freelance	64	15.38
	Periodical	62	14.90
Please state your business sector	Information Technologies	20	4.85
	Healthcare	126	30.58
	Education	88	21.36
	Electrics and Electronics	0	0.00
	Financing	10	2.43
	Food	28	6.80
	Construction	6	1.46
	Culture, Art and Design	0	0.00
	Media, Communication and Publishing	4	0.97
	Automotive	6	1.46
	Textile, Ready to Wear and Leather	80	19.42
	Commercial (Sales and Marketing)	28	6.80
	Tourism, Accommodation, Food and Drinks	8	1.94
Transportation, Aviation, Logistics and Communication	8	1.94	
Please state the number of employees in your workplace	0-10	130	31.86
	11-50	108	26.47
	51-200	80	19.61
	201-10000	78	19.12
	10001 and more	12	2.94

The demographic variables suggest that 68.75% of the gender distribution is women, and 66.83% of the total work experience is between 0-3 years. In addition, 45.67% of the contract type is full-time, and 30.58% of the sector distribution is the health sector. When we look at the distribution of employees in the workplace, 31.86% are composed of 0-10 people.

**Table 4:** Correlation Analysis

		Learning	Job Switches	Socio-technical blindness	Artificial Intelligence Structuring	Artificial Intelligence Anxiety	Innovation Orientation
Learning	r	1					
	p						
	n	416					
Job Switches	r	<b>.555**</b>	1				
	p	0.000					
	n	416	416				
Sociotechnical blindness	r	<b>.504**</b>	<b>.866**</b>	1			
	p	0.000	0.000				
	n	416	416	416			
Artificial Intelligence Structuring	r	<b>.533**</b>	<b>.730**</b>	<b>.803**</b>	1		
	p	0.000	0.000	0.000			
	n	416	416	416	416		
Artificial Intelligence Anxiety	r	<b>.778**</b>	<b>.908**</b>	<b>.907**</b>	<b>.864**</b>	1	
	p	0.000	0.000	0.000	0.000		
	n	416	416	416	416	416	
Innovation Orientation	r	0.082	<b>.178**</b>	<b>.145**</b>	<b>.247**</b>	<b>.180**</b>	1
	p	0.095	0.000	0.003	0.000	0.000	
	n	416	416	416	416	416	416

Correlation values suggest a moderate positive correlation between Learning and Job Switches ( $r=0.555$ ), Sociotechnical Blindness ( $r= 0.504$ ), and Artificial Intelligence Structuring ( $r=0.533$ ). There is a strong positive correlation between Artificial Intelligence Anxiety ( $r=0.778$ ).

There is a strong positive correlation between job change and Artificial Intelligence Anxiety ( $r=0.908$ ). There is a strong positive correlation between Sociotechnical Blindness ( $r=0.866$ ) and Artificial Intelligence Configuration ( $r=0.730$ ). There is also a weak positive correlation with Innovation Orientation ( $r=0.145$ ).

There is a powerful positive correlation between sociotechnical blindness and Artificial Intelligence Anxiety ( $r=0.907$ ) and a strong positive correlation with Artificial Intelligence Configuration ( $r=0.803$ ). However, there is a very weak positive correlation between Innovation Orientation ( $r=0.145$ ). Correlation values suggest a moderate positive correlation between Learning and Job Switches ( $r=0.555$ ), Sociotechnical Blindness ( $r= 0.504$ ), and Artificial Intelligence Structuring ( $r=0.533$ ).

There is a strong positive correlation between Artificial Intelligence Configuration and Artificial Intelligence Anxiety ( $r=0.864$ ). There is a very weak correlation with Innovation Orientation ( $r=0.247$ ).



There is a weak positive correlation between Artificial Intelligence Anxiety and Innovation Orientation ( $r=0.180$ ).

**Table 5:** The Effect of Artificial Intelligence Anxiety on Innovation-Oriented Behaviours of Employees

Dependent Variable	Independent Variable	Standardized Co-efficient		Standardized Co-efficient	t	p	R <sup>2</sup>
		B	Standard Mistake				
Innovation Orientation	Constant	15.872	0.885		17.928	0.000	0.032
	Artificial Intelligence Anxiety	0.076	0.020	0.180	3.727	0.000	

Model: F=13.894 p=0.000

The results of the regression analysis established to examine the effect of artificial intelligence anxiety on innovation-oriented behaviours of employees are given in the table.

The analysis shows that the artificial intelligence anxiety scale positively and significantly affects innovation orientation (beta: 0.180;  $p<0.05$ ).

**Table 6:** Regression Analysis of the Effect of Artificial Intelligence Anxiety on Innovation-Oriented Behaviours of Employees

Dependent Variable	Independent Variable	Standardized Co-efficients		Standardized Co-efficients	t	p	R <sup>2</sup>
		B	Standard Mistake				
Innovation Orientation	Constant	15.970	0.867		18.422	0.000	0.081
	Learning	-0.104	0.071	-0.085	-1.451	0.148	
	Job Switches	0.285	0.141	0.199	2.020	0.044	
	Sociotechnical Blindness	-0.411	0.156	-0.289	-2.643	0.009	
	Artificial Intelligence Structuring	0.695	0.150	0.380	4.629	0.000	

Model: F=8.998 p=0.000

The results of the regression analysis established to examine the effects of artificial intelligence anxiety dimensions on innovation-oriented behaviours of employees are given in the table.

According to the analysis results, Job Switches (beta: 0.199;  $p<0.05$ ) and Artificial Intelligence Configuration (beta: 0.380;  $p<0.05$ ) have a positive and significant effect on innovation orientation. However, Sociotechnical Blindness (beta: -0.289;  $p<0.05$ ) has a significant negative effect on innovation orientation. Learning does not have a significant effect on innovation orientation. ( $p>0.05$ )

**Table 7:** Investigation of Artificial Intelligence Anxiety and Innovation Orientation Scale in Terms of Gender

Please State Your Gender		n	Average	ss	t	p
Learning	Female	286	11.10	5.21	<b>0.953</b>	<b>0.341</b>
	Male	126	10.56	5.56		
Job Switches	Female	286	10.80	4.64	<b>0.586</b>	<b>0.558</b>
	Male	126	10.51	4.57		
Socio-technical Blindness	Female	286	11.22	4.68	<b>1.271</b>	<b>0.204</b>
	Male	126	10.59	4.52		
Artificial Intelligence Structuring	Female	286	8.27	3.63	<b>1.682</b>	<b>0.093</b>
	Male	126	7.62	3.52		
Artificial Intelligence Anxiety	Female	286	41.38	15.57	<b>1.254</b>	<b>0.211</b>
	Male	126	39.27	16.07		
Innovation Orientation	Female	286	18.98	6.39	<b>0.285</b>	<b>0.776</b>
	Male	126	18.78	7.07		

The results of the t-test performed to examine the Artificial Intelligence Anxiety, and Innovation Orientation scale in terms of gender are given in the table.

According to the analysis results, Artificial Intelligence Anxiety and Innovation Orientation do not show significant differences according to gender. ( $p > 0.05$ )

**Table 8:** Analysis of Artificial Intelligence Anxiety and Innovation Orientation Scale in terms of Total Work Experience

		n	Average	ss	F	p
Learning	0-3 years	278	11.49	5.42	<b>3.875</b>	<b>0.022*</b>
	4-10 years	108	10.19	5.58		
	11 years and more	30	9.33	3.42		
Job Switches	0-3 years	278	10.73	4.68	<b>1.057</b>	<b>0.348</b>
	4-10 years	108	10.89	4.50		
	11 years and more	30	9.53	4.17		
Socio-technical Blindness	0-3 years	278	11.20	4.68	<b>0.917</b>	<b>0.401</b>
	4-10 years	108	10.57	4.55		
	11 years and more	30	10.47	4.44		
Artificial Intelligence Structuring	0-3 years	278	8.17	3.53	<b>0.716</b>	<b>0.489</b>
	4-10 years	108	7.93	3.78		
	11 years and more	30	7.40	3.50		
Artificial Intelligence Anxiety	0-3 years	278	41.59	16.02	<b>1.694</b>	<b>0.185</b>
	4-10 years	108	39.57	15.49		
	11 years and more	30	36.73	12.22		

Innovation Orientation	0-3 years	278	18.99	6.46	<b>0.034</b>	<b>0.966</b>
	4-10 years	108	18.93	6.96		
	11 years and more	30	18.67	6.48		

\*p<0,05

The table illustrates the results of the Anova test examining the Artificial Intelligence Anxiety and Innovation Orientation scale regarding total work experience.

According to the analysis results, the Learning score shows significant differences according to the total work experience (p<0.05), and the Learning score of 0-3 years of total work experience is higher than the average values.

**Table 9:** Analysis of the Artificial Intelligence Anxiety and the Innovation Orientation Scale in terms of Contract Type

		<b>n</b>	<b>Average</b>	<b>ss</b>	<b>F</b>	<b>p</b>
Learning	Fulltime	190	10.93	5.38	<b>0.866</b>	<b>0.459</b>
	Part-time	100	11.24	6.28		
	Freelance	64	11.63	3.97		
	Periodical	62	10.16	5.11		
Job Switches	Fulltime	190	10.13	4.43	<b>1.845</b>	<b>0.138</b>
	Part-time	100	11.08	5.02		
	Freelance	64	10.97	3.89		
	Periodical	62	11.45	4.96		
Socio-Technical Blindness	Fulltime	190	10.37	4.45	<b>2.234</b>	<b>0.084</b>
	Part-time	100	11.30	4.95		
	Freelance	64	11.78	3.83		
	Periodical	62	11.55	5.24		
Artificial Intelligence Structuring	Fulltime	190	7.99	3.62	<b>0.146</b>	<b>0.932</b>
	Part-time	100	8.26	3.82		
	Freelance	64	8.00	2.61		
	Periodical	62	7.97	4.04		
Artificial Intelligence Anxiety	Fulltime	190	39.41	14.87	<b>0.876</b>	<b>0.453</b>
	Part-time	100	41.88	18.10		
	Freelance	64	42.38	12.14		
	Periodical	62	41.13	17.06		
Innovation Orientation	Fulltime	190	17.94	6.36	<b>3.629</b>	<b>0.013*</b>
	Part-time	100	20.48	7.02		
	Freelance	64	18.88	5.59		
	Periodical	62	19.68	7.03		

\*p<0.05

The table illustrates the results of the Anova test analysing the Artificial Intelligence Anxiety and Innovation Orientation scale regarding contract type.

According to the analysis results, the Innovation Orientation score shows significant differences in contract types ( $p < 0.05$ ), and the Innovation Orientation score of the part-time employees is higher than the average values.

**Table 10:** Industry Analysis of Artificial Intelligence Anxiety and Innovation Orientation Scale

		n	Ort.	ss	F	p
Learning	Information Technologies	20	9.60	3.79	<b>1.948</b>	<b>0.072</b>
	Health	126	12.05	4.53		
	Education	88	10.45	4.93		
	Food	28	9.43	6.12		
	Textile. Ready-to-Wear and Leather	80	11.55	6.30		
	Commercial (Sales and Marketing)	28	11.07	5.13		
	Other	42	10.05	6.59		
Job Switches	Information Technologies	20	9.80	3.75	<b>2.840</b>	<b>0.010*</b>
	Health	126	11.44	4.50		
	Education	88	10.05	4.43		
	Food	28	8.86	4.63		
	Textile. Ready-to-Wear and Leather	80	11.15	4.89		
	Commercial (Sales and Marketing)	28	12.36	3.52		
	Other	42	9.71	5.10		
Socio-technical Blindness	Information Technologies	20	9.80	3.58	<b>2.397</b>	<b>0.027*</b>
	Health	126	11.83	4.21		
	Education	88	10.98	5.02		
	Food	28	8.86	4.39		
	Textile. Ready-to-Wear and Leather	80	10.68	5.02		
	Commercial (Sales and Marketing)	28	12.07	3.86		
	Other	42	10.29	5.00		
Artificial Intelligence Structuring	Information Technologies	20	6.90	2.69	<b>3.622</b>	<b>0.002*</b>
	Health	126	8.40	3.09		
	Education	88	8.25	4.06		
	Food	28	6.79	4.09		
	Textile. Ready-to-Wear and Leather	80	7.33	3.36		
	Commercial (Sales and Marketing)	28	10.29	3.25		
	Other	42	7.95	4.08		

Artificial Intelligence Anxiety	Information Technologies	20	36.10	12.21		
	Health	126	43.71	14.09		
	Education	88	39.73	15.82		
	Food	28	33.93	16.10	<b>2.739</b>	<b>0.013*</b>
	Textile. Ready-to-Wear and Leather	80	40.70	16.69		
	Commercial (Sales and Marketing)	28	45.79	13.25		
	Other	42	38.00	18.79		
Innovation Orientation	Information Technologies	20	20.50	6.31		
	Health	126	19.76	4.87		
	Education	88	18.93	6.95		
	Food	28	19.50	6.97	<b>3.449</b>	<b>0.002*</b>
	Textile. Ready-to-Wear and Leather	80	16.28	6.42		
	Commercial (Sales and Marketing)	28	21.00	6.96		
	Other	42	19.81	8.59		

The table illustrates the results of the Anova test examining the Artificial Intelligence Anxiety and Innovation Orientation scale in different sectors.

According to the analysis results, the Job Switches score shows significant differences in different sectors ( $p < 0.05$ ), and the Job Switches score of individuals in the health sector is above average. The Socio-technical Blindness score shows significant differences in terms of the sector ( $p < 0.05$ ), and the Socio-technical Blindness score of individuals in the Commercial (Sales and Marketing) sector is above average. The Artificial Intelligence Structuring score shows significant differences in terms of the sector ( $p < 0.05$ ), and the Artificial Intelligence Structuring score of the individuals in the Commercial (Sales and Marketing) sector is above average.

The Artificial Intelligence Anxiety score shows significant differences in terms of the sector ( $p < 0.05$ ), and the Artificial Intelligence Anxiety score of the individuals in the Commercial (Sales and Marketing) sector is above average.

The Innovation Orientation score shows significant differences in terms of the sector ( $p < 0.05$ ), and the Innovation Orientation score of individuals in the Commercial (Sales and Marketing) sector is above average.

**Table 11:** Analysis of the Artificial Intelligence Anxiety and the Innovation Orientation Scale in terms of the Number of Employees in the Workplace

		<b>n</b>	<b>Average</b>	<b>ss</b>	<b>F</b>	<b>p</b>
Learning	0-10	130	11.08	5.57	<b>0.958</b>	<b>0.430</b>
	11-50	108	10.15	5.26		
	51-200	80	11.23	5.25		
	201-10000	78	11.62	5.22		
	10001 and more	12	11.17	7.35		
Job Switches	0-10	130	10.71	4.75	<b>2.499</b>	<b>0.042*</b>
	11-50	108	9.91	4.72		
	51-200	80	10.18	4.35		
	201-10000	78	11.92	4.17		
	10001 and more	12	11.17	4.65		
Socio-technical Blindness	0-10	130	11.18	4.89	<b>3.566</b>	<b>0.007*</b>
	11-50	108	10.00	4.70		
	51-200	80	10.35	4.34		
	201-10000	78	12.21	4.20		
	10001 and more	12	12.83	3.74		
Artificial Intelligence Structuring	0-10	130	8.35	3.84	<b>1.934</b>	<b>0.104</b>
	11-50	108	7.35	3.38		
	51-200	80	7.75	3.27		
	201-10000	78	8.51	3.63		
	10001 and more	12	9.00	3.95		
Artificial Intelligence Anxiety	0-10	130	41.32	16.91	<b>2.540</b>	<b>0.039*</b>
	11-50	108	37.41	15.75		
	51-200	80	39.50	14.61		
	201-10000	78	44.26	13.27		
	10001 and more	12	44.17	18.40		
Innovation Orientation	0-10	130	20.68	7.16	<b>4.409</b>	<b>0.002*</b>
	11-50	108	18.37	6.84		
	51-200	80	17.03	5.99		
	201-10000	78	19.15	5.01		
	10001 and more	12	20.33	7.18		

\*p<0.05

The table illustrates the Anova test results examining the Artificial Intelligence Anxiety and Innovation Orientation scale regarding the number of people working in the workplace.

According to the analysis results, Job Switches differ significantly in terms of the number of people working in the workplace ( $p < 0.05$ ), and the Job Switches score of the 201-1000 employee group is above average.

Socio-technical Blindness differs significantly in terms of the number of people working in the workplace ( $p < 0.05$ ), and the Socio-technical Blindness score of the 10001 and more employee group is above average.

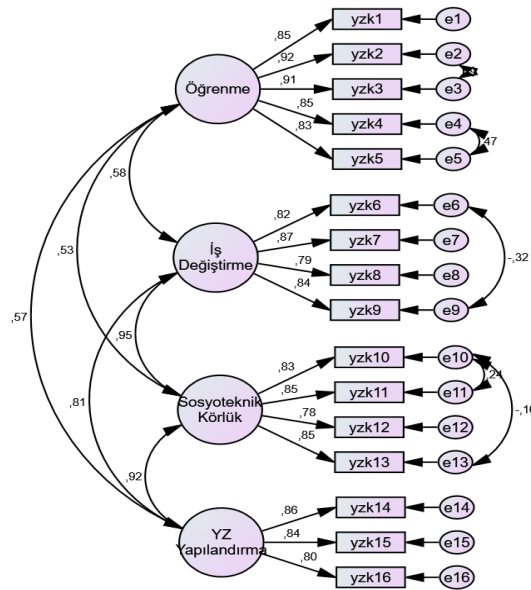
Artificial Intelligence Anxiety differs significantly in terms of the number of people working in the workplace ( $p < 0.05$ ), and the Artificial Intelligence Anxiety score of the 201-1000 employee group is above average.

Innovation Orientation shows a significant difference in terms of the number of people working in the workplace ( $p < 0.05$ ), and the Innovation Orientation score of the 0-10 employee group is above average.

**Table 12: DFA Results and Road Map for Artificial Intelligence Anxiety**

Acceptable Compliance Indexes	Calculated Compliance Indexes
$\chi^2/sd < 5$	5.75
GFI > 0.90	0.87
AGFI > 0.90	0.81
CFI > 0.90	0.93
RMSEA < 0.08	0.07
RMR < 0.08	0.08

The roadmap created in the DFA analysis for Artificial Intelligence Anxiety is given below. It is seen that the CFI, RMSEA, and RMR indexes calculated in the DFA analysis provide an acceptable compliance index. Anderson and Gerbing (1984), Cole (1987), and Marsh, Balla, and McDonald (1988) state that situations where the GFI value is above 0.85 and the AGFI value above 0.80 are also acceptable for compliance.

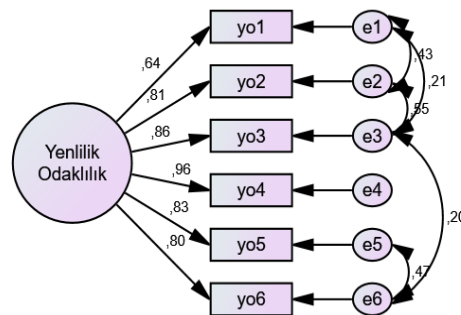


**Figure 2: Road Map for Innovation Orientation**

**Table 13:** DFA Results and Road Map for Innovation Orientation

Acceptable Compliance Indexes	Calculated Compliance Indexes
$\chi^2/sd < 5$	1.33
GFI > 0.90	0.99
AGFI > 0.90	0.98
CFI > 0.90	0.99
RMSEA < 0.08	0.03
RMR < 0.08	0.02

The roadmap created in the DFA analysis for Innovation Orientation is given below. It is seen that all compliance indexes calculated in the CFA analysis provide acceptable compliance indexes.



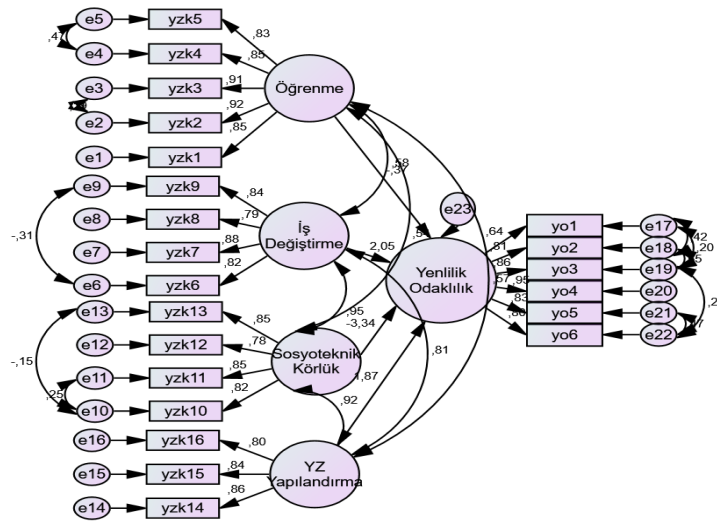
**Figure 3:** Road Map for the Impact of Artificial Intelligence Anxiety on Innovation Orientation

**Table 14:** DFA Results and Road Map for the Impact of Artificial Intelligence Anxiety on Innovation Orientation

Acceptable Compliance Indexes	Calculated Compliance Indexes
$\chi^2/sd < 5$	4.49
GFI > 0.90	0.85
AGFI > 0.90	0.80
CFI > 0.90	0.93
RMSEA < 0.08	0.08
RMR < 0.08	0.07

The roadmap created in the DFA analysis for the effect of Artificial Intelligence Anxiety on Innovation Orientation is given below. It is seen that all compliance indexes calculated in the CFA analysis provide acceptable compliance indexes.





**Figure 4:** DFA Analysis for the Impact of Artificial Intelligence Anxiety on Innovation Orientation

**Table 15:** Impact Results

			Beta	S.E.	C.R.	P
Innovation Orientation	<---	Learning	-.370	.225	-1.397	.162
Innovation Orientation	<---	Job Switches	2.053	1.290	1.296	.195
Innovation Orientation	<---	Socio-technical Blindness	-3.344	1.886	-1.340	.180
Innovation Orientation	<---	Artificial Intelligence Structuring	1.871	.893	1.575	.115

Artificial Intelligence Anxiety does not have an impact on Innovation Orientation ( $p>0,05$ ).

## 5. RESULT AND EVALUATION

Another finding from the study is that innovation orientation has a positive and significant effect on business performance. According to the research findings, private sector employees are moderately concerned about using artificial intelligence, possibly because they do not have sufficient knowledge about artificial intelligence applications and have not yet encountered such a technology. According to the literature, although many private sector employees agree on the benefits of using artificial intelligence, most professionals do not fully understand the principles of artificial intelligence. Generally, they may experience the anxiety that artificial intelligence technologies will take over their profession and their duties in the institution. Recent advances in artificial intelligence studies have led to the proliferation of technologies that significantly affect our daily lives. In this case, contrary to fear, it can enable employees to handle their jobs faster, easier, and more comfortably. There is an expectation that artificial intelligence will significantly impact professional professions in the next few decades and perhaps even threaten the existence of many professional fields, especially the law and medicine fields (Tredinnick, 2017). Employees who think artificial intelligence technologies will replace their duties and responsibilities may have difficulty adapting to them. In addition, employees performing the same task in the same institution for a long time may be resistant to change and transformation in terms of adaptation to

new technologies. In this case, it may cause them to be resistant to innovation. Corporate managers and teammates must motivate employees resistant to innovation, change, and transformation and facilitate adaptation processes.

### **Recommendations:**

Based on the findings of this study, the following can be suggested:

- Experts using artificial intelligence technology should explain this technology to other employees in order to put an end to the anxiety and confusion
- Employees should make individual efforts to reach accurate and reliable information about artificial intelligence
- More comprehensive studies should be conducted to understand employees' concerns about artificial intelligence.
- Unit managers should take on the role of mentoring so that employees can adopt and use new technologies.
- Teammates should motivate and support employees who cannot adapt to change in order to adapt them.

In line with all these suggestions and inferences, it should not be forgotten that institutions need employees with agility who can adapt quickly to innovation to be more productive.

Today, employees who can quickly adapt to new business processes, technologies, teammates, and working conditions are required. In this context, the relationships between Artificial Intelligence Anxiety and innovation-oriented behaviours of employees working in different countries can be investigated in future studies.

### **Araştırma ve Yayın Etiği Beyanı**

Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır. Bu çalışma için etik kurul onayı, İstanbul Esenyurt Üniversitesi Etik Kurulu/Komitesinden 17/06/2022 tarihli ve 2021/06-13 nolu toplantısında E-12483425-199-3814 sayılı karar ile alınmıştır.

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Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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