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THE INTERPLAY BETWEEN AI EXPOSURE, ATTITUDES TOWARDS AI, AI ANXIETY, AND EXISTENTIAL ANXIETIES

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Tez Başlığı: The Interplay Between AI Exposure, Attitudes Towards AI, AI Anxiety and Existential Anxieties

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To my beloved grandfather Güçdağ Altuğ, who taught me to follow the path of science and reason...

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ÖZET

Ermut, Sıla. Yapay Zekâ Maruziyeti, Yapay Zekâya Karşı Tutumlar, Yapay Zekâ Kaygısı ve Varoluşsal Kaygılar Arasındaki İlişkinin İncelenmesi. Başkent Üniversitesi, Sosyal Bilimler Enstitüsü, Sosyal Psikoloji Tezli Yüksek Lisans Programı, 2024.

Yapay zekânın artan önemi ve değişen kullanım alanlarıyla birlikte, etik ve psikolojik kaygılar daha belirgin hale gelmiştir. Bu çalışmanın amacı, yapay zekâya yönelik tutumları ve yapay zekâ kaygılarını araştırırken bu kaygıları varoluşçu bir bakış açısıyla incelemektir. Yapay zekâya maruz kalmanın yapay zekâya yönelik tutumlarla önemli ölçüde ilişkili olacağı ve yapay zekâ uygulamaları tasarlayan profesyoneller, yapay zekâ kullanıcıları ve kullanıcı olmayanlar arasında farklılıklar olacağı beklenmektedir. Ayrıca, yüksek düzeyde yapay zekâ kaygısı ile yüksek düzeyde varoluşsal kaygılar arasında bir ilişki ön görülmektedir. Cinsiyetin de yapay zekâya yönelik tutumlar ile varoluşsal kaygılar arasındaki bu ilişki üzerinde etkisi olacağı tahmin edilmektedir. Katılımcılar 18 yaşından büyük yetişkinlerden oluşmuştur ve katılımcılara sosyal medya (Twitter, Instagram vb.) aracılığıyla ulaşılmıştır. Katılımcılar "Genel Yapay Zekâya Yönelik Tutumlar Ölçeği", "Yapay Zekâ Kaygı Ölçeği" ve "Varoluşsal Kaygılar Anketi"ni doldurmuştur. Analiz sonuçlarına göre, bireylerin yapay zekâya maruz kalması ile yapay zekâya yönelik tutumlar veya yapay zekâ kaygıları arasında bir ilişki bulunmamıştır. Ayrıca, yapay zekâya yönelik olumlu tutumların daha düşük yapay zekâ kaygısı ile ilişkili olduğu bulunmuştur. Öte yandan, yapay zekâya yönelik tutumlar ile varoluşsal kaygılar arasındaki ilişki anlamlı bulunmamıştır. Son olarak, yapay zekâya yönelik tutumlar, yapay zekâ kaygısı ve cinsiyet arasında anlamlı bir ilişki bulunmuştur.

Anahtar Kelimeler: yapay zekâ, yapay zeka kaygısı, varoluşsal psikoloji, varoluşsal kaygılar,

ABSTRACT

Ermut, Sıla. The Interplay Between AI Exposure, Attitudes Towards AI, AI Anxiety and Existential Anxieties. Başkent University, Institute of Social Sciences, Social Psychology Master's Program with Thesis, 2024.

With the growing potential and usage of artificial intelligence, ethical and psychological concerns have become more prominent. The aim of the present study is to undercover these concerns from an existentialist point of view while investigating the attitudes towards AI and AI anxieties. It is expected that AI exposure will be significantly related with attitudes towards AI and there will be differences among AI professionals, AI users, and non-users. Moreover, a strong association between higher levels of AI anxiety with higher levels of existential anxieties is expected. Gender is also expected to have an effect on this relationship between attitudes towards AI and existential anxieties. The participants for this study included adults older than 18 and they were gathered through social media (Twitter, Instagram etc.). The groups of participants completed “The General Attitudes toward Artificial Intelligence Scale”, “Artificial Intelligence Anxiety Scale”, and “Existential Concern Questionnaire”. A cross-sectional research design was implemented to investigate the relationship between attitudes towards AI, AI anxiety, and existential anxieties. According to the results of the analysis, no relationship was found between the individual's exposure to AI and attitudes towards AI or AI anxieties. Moreover, positive attitudes towards AI were related to lower AI anxiety. On the other hand, the relationship between attitudes towards AI and existential anxieties was not significant. Lastly, a significant relationship was found between attitudes towards AI, AI anxiety, and gender.

Keywords: artificial intelligence (AI), AI anxiety, existential psychology, existential anxieties

TABLE OF CONTENTS

LIST OF TABLES

Pages

1. INTRODUCTION

1.1. Background and Context

Increasing safety while driving and improving healthcare services are some of the most promising opportunities that artificial intelligence offers. In terms of driving safety, AI-driven voice assistants now allow individuals to request assistance without the need to manually configure a navigation system while driving (Sindermann et al., 2020). AI has become more and more vital in the healthcare field, with the help of humanoid robots that assist elderly patients and surgeons during long hours of life-threatening surgical processes (Hamet & Tremblay, 2017).

AI and machine learning hold the promise of generating job opportunities through promoting productivity and supporting the emergence of novel industries. For instance, the integration of AI and machine learning into manufacturing, healthcare, and finance, can enhance operational efficiency while lowering expenses, therefore enabling more employment opportunities in these sectors (Tiwari, 2023).

On the other hand, while these positive developments have become more visible, the advancement of AI research and technology carries certain drawbacks and potential negative outcomes. Similar to other technological advancements, artificial intelligence has started to progressively replace human workers, which would lead to a significant number of job displacements each year (Sindermann et al., 2020). Studies suggest that AI based automation has the possibility to eliminate approximately 30% of current human-held jobs in the UK, 38% in the US and 21% in Japan by 2030 (PWC, 2017). As AI becomes more sophisticated, it will eventually be able to perform an increasing number of tasks, therefore further contributing to job displacement (Sindermann et al., 2020). In addition, concerns about the data privacy have become highly important due to the increased use of AI products in daily life.

1.1.1. Present study

The study will be focusing on investigating the possible relationship between the attitudes towards Artificial Intelligence (AI) and existential anxieties. The proposed relationship will be examining the differences among AI professionals (such as software developers who are

actively engaging in development processes of AI tools), AI professional users (professionally using AI tools, however, are not engaged in the development and creation process of AI tools), AI daily users (who are familiar with the AI tools but not actively using these tools professionally) and lastly, non-users (who are neither using nor familiar with the AI tools).

The study will also be examining the effect of attitudes towards AI and gender on the artificial intelligence anxiety. In order to set the theoretical framework, existential psychology and existential anxieties will be discussed as well as the roots of artificial intelligence, human-computer interaction and AI anxiety. The aim is to integrate key concepts from the literature on existential psychology, human-computer interaction, and technology acceptance model (Davis, 1989) to provide a comprehensive understanding of the relationships among AI exposure, attitudes, AI anxiety, and existential anxieties.

The purpose of this thesis is to investigate how to better understand the anxieties stem from the advancements of artificial intelligence. The findings are expected to help validating this anxiety and furthermore, explore the target of it, which is not the AI itself, but it is who are investing in AI and making decisions about the design and the embedding of AI software and hardware in human institutions and practices. The proposed study is expected to fill a gap in the literature on artificial intelligence anxiety from an existentialist point of view through focusing on AI anxiety as a threat to the sense of meaning, autonomy, connectedness, and mortality. It is also expected that, the outcomes of this study can provide insights for public education drawing from experiences and concerns of AI users and non-users.

1.2. Theoretical Framework

This theoretical framework integrates key concepts from the literature on existential psychology, human-computer interaction, artificial intelligence anxiety, and technology acceptance to provide a comprehensive understanding of the relationships among AI exposure, attitudes, AI anxiety, and existential anxieties. The proposed conceptual model will serve as a foundation for developing hypotheses and guiding the research design, data collection, and data analysis processes in this study. The aim of this thesis is providing an understanding of the interplay among AI exposure, attitudes, AI anxiety, and existential anxieties.

1.2.1 AI exposure and attitudes:

According to the literature on human-computer interaction (Bansal & Khan, 2018) and technology acceptance model (Davis, 1989), this thesis suggests that the nature of being exposed to AI technologies are crucial in shaping how individuals react on their interactions with different AI tools. It is expected that AI professionals, AI professional users, AI daily users, and non-users have different attitudes towards AI since they possess different levels of familiarity, understanding, and engagement with AI technologies.

1.2.2 AI anxiety and existential anxieties:

Within the scope of this thesis, AI anxiety is proposed as an essential construct that is expected to have an effect on the relationship between attitudes towards AI and existential anxieties. Moreover, it is anticipated that higher levels of AI anxiety can aggravate existential anxieties through increasing concerns about the implications of AI on various aspects of human life. These aspects of human life can be job security, personal autonomy, and social connectedness.

1.2.3 Attitudes towards AI and existential anxieties:

The thesis proposes that attitudes towards AI is related with the levels of existential anxieties. Since individuals can perceive AI technologies as threatening to their sense of meaning, autonomy, connectedness, and mortality, negative attitudes towards AI may increase existential anxieties. Conversely, positive attitudes towards AI can alleviate existential anxieties, as individuals may consider AI technologies as beneficial tools that can enhance their lives.

1.3. Research Questions and Hypotheses

Within the scope of this study, following research questions will be examined: "How do attitudes towards artificial intelligence, AI anxiety and existential anxieties differ among AI professionals, who are developing and designing AI and machine learning tools, professional

AI users, who are using AI tools as a part of their professional life, non-professional AI users, who are engaging with AI tools on a daily basis and non-users, who are neither engaging nor familiar with the AI tools?" and "What is the effect of gender on AI anxiety, attitudes towards AI and existential anxieties?".

The hypotheses of this study are listed as follows:

Hypothesis 1: AI exposure (group) is expected to be related with attitudes towards AI, AI anxiety, and existential anxieties.

a. Individuals with more exposure to AI (AI professionals and professional users) are expected to have more positive attitudes towards AI compared to individuals with less exposure (AI daily users and non-users).
b. Individuals with more exposure to AI (AI professionals and professional users) are expected to experience lower levels of AI anxiety compared to individuals with less exposure (AI daily users and non-users).
c. Individuals with more exposure to AI are expected to experience lower levels of existential anxiety compared to individuals with less exposure.

Hypothesis 2: Attitudes towards AI are expected to have a relationship with AI anxiety and existential anxieties.

a. Positive attitudes towards AI are expected to be associated with lower levels of AI anxiety.
b. Positive attitudes towards AI are expected to be associated with lower levels of existential anxiety.
c. Negative attitudes towards AI are expected to exacerbate AI anxiety.

Hypothesis 3: Gender is expected to have an effect on attitudes towards AI, the levels of AI anxiety, and existential anxieties.

a. Men are expected to have more positive attitudes towards AI compared to women.
b. Women are expected to experience higher levels of AI anxiety compared to men.
c. Women are expected to experience higher levels of existential anxiety.

2. LITERATURE REVIEW

2.1. Existentialism and Existential Psychology

2.1.1. Overview of existentialism

Rollo May (1958), one of the most prominent figures in existentialism and existential psychology defined existentialism as "an expression of profound dimensions of the modern emotional and spiritual temper…" May's definition focuses on the collective relationship between existentialism and the emotional and spiritual complexities of existence, which are found to be essential to study for understanding existence. May (1958) also points out that, existentialism is a philosophical framework complexly related to the emotional and spiritual climate of the time of its origin. Similar to other movement of thought, the emergence existentialism is heavily depended on the "Zeitgeist" – the spirit of time. The end of the 19th and the beginning of the 20th century was characterized as the breaking up of personality into fragments (May, 1958). During that time, these fragmentations was found to be caused by emotional, spiritual and psychological disintegration in the individual and the culture as well as separation of art from the realities of life (May, 1958). As a reaction towards the dominant philosophical paradigms of the late 19th century, existentialism challenged the objectivity of empiricism and positivism through focusing on the individual experience. Due to the Industrial Revolution and economic and social transformation caused by the Revolution, the importance of human experience has become more prominent than ever. These changes in the environment enabled the existentialist movement to unfold while focusing on human responsibility and collective action. In addition, these challenges in the economic and social environment, the emergence of modernist art and the rise of psychoanalysis in psychology provided the ground for existentialism to explore the human psyche and individual role (Betschart, 2020). Thus, as a philosophical response to mentioned challenges and uncertainties of the time, existentialism emerged and started to question human existence.

When we turn back to May's definition, existentialism can be seen as a reflection of the lived experiences, quests and anxieties, rather than an abstract theory. May points out that the term "profound dimensions" of existentialism, which can be understood as its exploration of

the important aspects of life including freedom, responsibility, authenticity and the search for meaning (May, 1958). Therefore, through delving into these dimensions of life, it is possible to truly grasp the essence of one's existence, according to existentialism.

The rise of existentialist movement, often referred as the existentialist tsunami (Betschart, 2020), was led by the French philosopher Jean-Paul Sartre. One of the most prominent sources of existentialism, Being and Nothingness, delved into a number of philosophical themes, however, Sartre mainly explored around the nature of human existence and one's struggle to search for the meaning in an absurd world (Webber, 2009). According to Sartre (2007), humans are not born with a fixed human "nature", that is to say, their choices, experiences and actions define themselves, rather than a predetermined nature or a purpose. In other words, humans are born self-conscious and free, they have the ability to define their essence freely. This radical freedom (Sartre, 1943/1956) can be liberating since it enables individuals to create their own authentic values and meaning in life however, it is also a burden as it gives them the responsibility to make choices and living with the consequences of their choices (Webber, 2009).

2.1.2. Existential anxieties

The study of existential anxieties is a part of existential psychology and is focused on the human condition and the challenges as well as the inherent uncertainties of human existence. In relation with many other theories including terror management theory, existential psychologists and philosophers have been concentrating on understanding the depths of human existence and anxieties. Søren Kierkegaard and Irvin Yalom are two of the most important existential philosophers who have contributed to the exploration and analysis of the existential anxieties in their writings. According to Søren Kierkegaard (1980), anxiety is a dual force, which is both terrifying and compelling for humans and it serves as a transformative experience for them to perceive their place in the world. Kierkegaard phrases this process as a journey through anxiety which leads humans from a state of ignorance and aimless pursuit to eventually become responsible and thoughtful (Jackson & Everts, 2010). He also states that, anxiety is a fundamental human emotion and is a universal experience intrinsic to human existence through characterizing anxiety as a profound emotion that comes from the human capacity for self-

awareness (Kierkegaard, 1980). Since humans are self-conscious and are capable of contemplating their own existence and the future, it is up to them to choose their own freedom. Accordingly, the awareness of the inherent uncertainty of life generates anxiety. From his point, anxiety is a natural response to the unforeseeable, not necessarily a negative emotion but an integral part of being human and it reflects the tensions among the need for freedom and the limitations of human existence (Kierkegaard, 1980). When we delve into the interplay between anxiety and freedom, Kierkegaard (1980) emphasizes that anxiety can serve as a catalyst for self-discovery and an eventual personal growth, since it enables humans to become more aware of their choices and the uncertainties of life.

Having explored Kierkegaard's insights about the existential anxieties and their transformative nature, it is essential to continue with Irvin Yalom, who introduced four core existential anxieties that humans grapple with as they confront the uncertainties of their existence. According to Yalom (1980), existential anxieties derive from the "conflict that flows from the individual's confrontation with the givens of existence". In other words, Yalom points out that the fundamental aspects of being human are the root causes of existential anxieties. This conflict arises while individuals navigate through their existential concern and the innate human desire for security, connection and meaning.

Yalom describes four existential anxieties: death, freedom, existential isolation and meaninglessness:

A. One of the most apparent and comprehensible existential concern is death. Our existence is destined to cease at some point and when confronted with the inevitability of death, we respond with a profound mortal dread. As a result, a fundamental existential dilemma emerges, which is the tension between the conscious recognition of death's inescapability and the innate desire to carry on (Yalom, 1980). On the other hand, accepting the inevitable end also serves as a relief, according to Yalom. He suggests that the recognition of death contributes a higher quality of life. The awareness of our mortality adds depth and intensity to our experiences, fostering a profound admiration for the temporary nature of life which, in turn, leads to a shift in perspective from a mode of living characterized by distractions, comfort, and trivial anxieties to a more authentic mode of existence

(Yalom, 1980). Confronting the reality of death enables individuals to reevaluate their priorities which would lead to focusing more on what truly matters.

B. Another essential concept in existential anxieties is freedom. While traditionally viewed as positive concept, existential freedom, signifies the absence of external structure. What we mean by the external structure can be a force that would determine on individuals' actions, thoughts and choices. Individuals do not navigate a predetermined universe but, rather, assume complete responsibility for their own world, as well as their choices, and their actions. This existential freedom carries an implication, "…beneath us lies no stable ground, but rather, a void, an abyss" (Yalom, 1980). Yalom challenges the notion of a secure and structured reality and introduces the anxiety inducing idea that under the surface of our lives there lies a profound uncertainty and lack of inherent meaning.

C. Existential isolation is another concern Yalom mentions. Despite the deepest connections and understanding individuals might achieve with others or within themselves, there is an inherent separation that cannot be overcome. According to Yalom (1980), this separation is not limited to interpersonal relationships or intrapersonal dynamics, it also extends to a more profound level which constitutes to a separation between the individual and the world.

D. If we all cease to exist, if the sole responsibility for everything good or evil lies with us, if we are and will be alone in the end, then where is the meaning in any of this? Meaninglessness encompasses all other three existential concerns and claims that, since there is not a predetermined design on how and why individuals live, they should create their own meaning in life in order to find a way to bear the idea of mortality, loneliness and the feeling of overwhelming freedom (Yalom, 1980).

The core elements of existential psychology encompassing death, freedom, isolation, and meaninglessness hold significant place throughout the layers of individual psychological and has an immense relevance in clinical practice (Yalom, 1980). In other words, understanding and navigating these existential concerns has a profound impact on both therapeutic interventions and individuals' path to self-discovery to create a more authentic life.

2.2. Artificial Intelligence

2.2.1. Overview of artificial intelligence

Artificial intelligence (AI) has fundamentally changed the human-computer interaction discipline and reconstructed the lines separating human cognition from machine intelligence. The capacity of computer systems to carry out tasks that normally require human intelligence has made significant progress over the past few decades. This section will be discussing the definition, historical and technological development of AI from a social scientist perspective.

Although coming up with a singular definition of AI is not feasible due to its evolving and interdisciplinary nature, there are a number of conceptualizations highlighting the diversity of AI's theoretical and practical frameworks. According to Barr et al. (1981), AI is the subject of computer science that is involved with creating intelligent computer systems, or systems that display the characteristics that are associated with intelligence in human behavior, such as language comprehension, learning, reasoning, problem-solving, and so forth. Another definition of AI by Russell and Norvig (2010) conceptualize AI as the systems that imitate cognitive processes typically linked to human characteristics like language, learning, and problem-solving. Therefore, it is essential to study computer science, mathematics as well as linguistics, philosophy, cognitive psychology, and neuroscience to understand the underlying processes of how AI works. A collaborative effort from these disciplines contributed to the development of AI throughout history. Dating back to 400 B.C, philosophers proposed the conceptual foundation that our minds are somewhat similar to the machines in terms of engaging in thought processes while decision-making (Russell & Norvig, 2010). In other words, the system that enables us to decide which action to make shows similarities to machines which follow predetermined steps to come up with the final product. The tools that handle certain and probabilistic statements was integrated into AI by mathematicians as well as proposing the groundwork for computational reasoning (Russell & Norvig, 2010).

Moreover, economists contributed to the development of AI by formalizing decision-making processes that aims to maximize expected outcomes (Russell & Norvig, 2010). Herbert Simon, who was one of the pioneers of AI research, came up with a model that enables decisions that were “good enough” unlike the optimal decision which provided a better understanding of human behavior, and he won the Nobel Prize award in economics with his model (Simon, 1947).

Neuroscience provided one of the most important contributions to AI through providing insights on brain functioning, creating connections and distinctions among the brain and computers, which opened the way to human-computer interaction studies (Russell & Norvig, 2010). In line with neuroscience, psychologists created the common view of "a cognitive theory should be like a computer program" (Anderson, 2009) which states that humans are information processing beings and linguists integrated language into this framework (Russell & Norvig, 2010). As a result, psychology and linguistics provided insight on the cognitive and language processing abilities of AI. Lastly, computer science provided AI the necessary operating systems as well as programming languages that would combine all efforts from these disciplines under one roof (Russell & Norvig, 2010).

Artificial intelligence involves in many areas including education, healthcare, autonomous driving, media and finance (Boddington, 2017; Huang et al., 2023). AI based computerized diagnosis systems have been assisting healthcare professionals in terms of enabling individualized diagnosis and providing insights on the characteristics of diseases, which made possible through analyzing extensive datasets gathered from thousands of patients (Boddington, 2017). Patient consultations, facilitating online or robotic therapy sessions also become available with the involvement of AI based applications. In addition, AI integrated robotic surgical assistance for delicate surgical procedures is considered to be a vital contribution of AI to healthcare sector (Boddington, 2017).

2.2.2. History of modern AI: Dartmouth conference

According to the studies, the starting point of modern artificial intelligence can be accepted as the Dartmouth Conference in 1965 (McCarthy et al., 2006; Solomonoff, 1985). The Dartmouth Conference, organized by John McCarthy, had a significant role in setting the agenda for AI research while coining the term "artificial intelligence" (Solomonoff, 1985). The conference is accepted as one of the most important milestones in the development of AI as an academic and scientific inquiry through exploring machine learning, problem-solving and knowledge representation function of AI (Cordeschi, 2007).

2.2.3. “Can machines think?”: Alan Turing’s and artificial intelligence

Alan Turing, often referred as the father of computer science and artificial intelligence, made significant contributions to computation, cryptography, and artificial intelligence. The Turing Test, proposed by Turing (1950), was designed to test the ability of a machine to exhibit human-like intelligence. A human evaluator was involved in the test and engaged in a natural language conversation with both a human and a machine. Without knowing which is human and which is a machine, the human evaluator was asked to reliably distinguish the machine's responses from the humans, and if the evaluator fails, the machine would be considered to have passed the Turing test (Turing, 1950). A shift from a traditional definition of intelligence to a useful measure on observable behavior was the idea behind the Turing test. With the aim to investigate if the machines can think, Turing’s influence on the development of natural language processing and the creating of AI systems that can involve in human-like conversations is undeniable.

On the other hand, Turing test remains highly controversial to this day. Several objections that are focusing on its limitations and potential biases have been raised by the critics. Critics stated that the test primarily assesses intelligence on the surface, and it lacks the ability to evaluate consciousness or genuine understanding. In addition, the test was found to be potentially neglecting other valid forms of intelligence and favors human-like intelligence. Since there is not a widely accepted criteria for passing the test, various interpretations cause ambiguity as what to accept as passed and failed. Moreover, potential manipulation of human-like machines raises ethical dilemmas (Oppy et al., 2021). These challenges on the effectiveness of the test increased concerns about human bias, evaluation, the potential for deception, the absence of universal criteria, and ethical considerations. Nevertheless, Turing Test is still accepted to be one of the most important inventions that contributed to the development of modern AI technologies. Turing’s work on the Turing machine enabled a theoretical framework to understand the limits of algorithmic computation, that is believed to be foundational in artificial intelligence. By proposing an intelligence-based measure on observable behavior, Turing Test provided the foundation for natural language processing and many other AI systems.

2.2.4. Current AI trends: An introduction to ChatGPT, Google Bard, Midjourney, Siri and Alexa

ChatGPT, developed by OpenAI, works as a generative AI too and a language model that employs complicated AI methodologies to produce accurate responses in natural language based on provided prompts or inputs (Kalla & Smith, 2023). From answering basic Google search questions to creating abstracts for scientific articles, writing descriptions for products and job postings as well as writing blog post and creating content, ChatGPT offers a variety outputs (Q.ai, 2023). The underlying mechanism for ChatGPT can be explained as using a neural network architecture which begins with an input encoding process.

During the process, this neural network model works with self-attention, enabling the analysis of relationship and context within the input (Kalla & Smith, 2023; Ray, 2023). ChatGPT is built upon specific foundation models, specifically GPT-3.5 and GPT-4, which were initially created and adopted for conversational objectives. The process involved in both supervised learning and reinforcement learning techniques, which is referred to as reinforcement learning from human feedback (RLHF). This involved human trainers in improving the model's performance. During supervised learning, these trainers assumed dual roles, simulating both the user and the AI assistant. In the subsequent reinforcement learning phase, the trainers ranked responses generated by the model in previous conversations (Greengard, 2022). As of 2019, GPT started to utilize unsupervised learning, which is a technique for training machine-learning models on unannotated data while enabling the software to independently recognize patterns within the data (Heaven, 2023). The prior machine-learning services heavily leaned on supervised learning; however, this method eliminates the challenging process of manual data labeling and its constraints on the size of available training datasets (Heaven, 2023). It can be understood that, with the latest advancement in the learning processes, ChatGPT will be able to analyze greater data sets and learn from them to create more accurate and human-like conversations. With its capacity to generate natural language, ChatGPT is highly beneficial for applications require human-like conversations such as customer service and language translation (Kalla & Smith, 2023).

Efficiency is another advantage while utilizing ChatGPT. It can support organizations through providing automatization with its ability to create swift responses to time consuming

and costly operations (Kalla & Smith, 2023). Despite its rapid improvements, ChatGPT still has limitations in terms of generating accurate information about the events that occurred after its training process and as a result, some of its responses can be outdated (Greengard, 2022). In addition, ChatGPT may exhibit sensitivity to small changes in how a question is expressed, for example, if a question is rephrased slightly, the model's responses can be different from the original ones or can be inaccurate. In other words, the model's responses can vary based on the specific wording of the input it receives, the underlying information or knowledge remains the same. ChatGPT can also generate biased responses due to stereotypical information present in that data that was used while training (Kalla & Smith, 2023).

Since the model is constantly learning, it is possible to mitigate this bias through choosing and managing the training data and consistently oversee ChatGPT's responses to detect possible biases (Kalla & Smith, 2023). Insensitivity, the lack of emotional intelligence and empathy are some of the most encountered disadvantages while using ChatGPT for human-like interactions (Kalla & Smith, 2023). Due to these disadvantages, concerns about ChatGPT potentially replacing human involvement in decision-making processes may not be as alarming as initially perceived. According the OpenAI's description of ChatGPT, it is "designed to complement humans, not replace them" (Greengard, 2022).

Similar to ChatGPT, Google Bard is a generative AI based conversational chatbot, engaging in text generation, language translation as well as content creation (Google, n.d.). It also shares similar privacy and inaccuracy concern as ChatGPT and as a result, it emphasized that "Bard is not a human, it does not have its own thoughts despite sounding like a human, it cannot replace people in your life, like family and friends, and cannot make important life decisions" (Google, n.d.).

Midjourney and DALL-E are generative artificial intelligence tools that create images from natural language prompts (Midjourney, n.d.; OpenAI, n.d.). Also known as the text-to-image technology, Midjourney and DALL-E enable users to generate various forms of art by simply entering a few words into a text box, using online artworks as inspiration. Despite their popularity and conveniency, controversy on artists' creativity and job security as well as the concerns about their privacy have become important issues. It is also claimed that AI generated art has not yet to draw definitive lines in terms of ethics and plagiarism (Farrant, 2023).

Controlling simple tasks such as playing music, getting directions, managing smart home devices and making phone calls have become more and more easier with the introduction of voice assistants. This technology enables humans to perform various tasks efficiently and hands-free through asking questions. The voice enabled digital assistants will be provided with relevant data based on the command through using user's voice as the input and perform the desired tasks (Brill et al., 2019; Hoy, 2018). Apple's Siri and Amazon's Alexa are two of the most popular voice assistant tools that users engage (Hoy, 2018). Some of the tasks Siri and Alexa can perform are sending and reading text messages while driving, setting alarms and timers, controlling media services such as Spotify, Netflix and more, doing basic math calculations, and responding to basic questions (Hoy, 2018). Despite the useful features, privacy and security concerns about the voice assistants are one of main focus of AI researchers. According to Lerman (2021), Siri, Alexa and Google faced allegations of recording and disseminating private conversations of their users. Another privacy violation by Alexa led the company to pay a $25 million civil penalty to settle allegations of unlawfully holding sensitive data gathered from children, which is a violation of a children's online privacy law (Singer, 2023). With an attempt to challenge these allegations, Apple announced detailed legal documents on Siri, dictation and privacy stating that "You Have Choice and Control" to disable Siri at any time (Apple, n.d.). In addition to Apple, Amazon also has a webpage to provide information about the privacy and security features of Alexa highlighting the importance of user control on its devices (Amazon, n.d.).

2.2.5. Human computer interaction

Human-Computer Interaction (HCI) is a multidisciplinary field that combines designing, evaluating, and implementing interactive computing systems for human use while focusing on the dedication for improving the relationship between humans and computers (Bansal & Khan, 2018). HCI involves in promoting a mutual understanding between humans and computers through creating user-friendly software that increases effectiveness and enjoyment (Sinha et al., 2010). To ensure the effectiveness of these interactions between humans and computers, the study of HCI also focuses on how humans utilize computers to perform tasks, solve problems and so on (Sinha et al., 2010). In other words, good interaction, high usability and better human

centeredness are the three key concepts in HCI. During the early days of computing, the interactions between computers and humans were limited to command-line interfaces (the text-based interaction with a computer) and punch cards (physical cards used to insert data into early computers) and these interactions were far from being user friendly. The breakthrough of graphical user interfaces (GUIs) during 1970s, enabled the visual elements such as icons, and point-and-click interactions to make computers more accessible to a broader audience (Levy, 2023). In other words, computers became more user-friendly which resulted in better human computer interaction. As the HCI field grew, researchers started to shift the focus to the human factor in HCI. Cognitive psychology provided insights on the user behavior, including learning and thinking patterns. According to Card et al. (1983), human computer interaction mostly relies on cognitive processes. For example, while using a computer text-editing programs, humans interpret instructions, come up with sequences of commands and convey these commands (Card et al., 1983). Drawing from the growing literature on human cognition and computers, the emphasis on usability and user-centered design has become more visible during the 1980s and 1990s. With the aim of improving the interaction between humans and computers as well as making technology more accessible and user-friendly, HCI professionals has become more focused on conducting usability testing and involving users in the design process that would enhance user satisfaction.

2.3. Artificial Intelligence Anxiety

2.3.1. Fear of technology: Computer and AI anxiety

The introduction of technological advancements in frequently raises questions regarding how individuals will respond both cognitively and emotionally to these advancements. Although some of them would logically embrace these changes, some express their concerns and feel anxious about these potential impact on their lives. Starting from the first computers, especially the spread of personal computers, concerns were elevated. As an example of this concern towards computers, the marketing campaigns for the Macintosh computer featured the phrase "High Technology without High Anxiety" (Cambre & Cook, 1985). This perceived connection between computers and the emotional reactions they provoke has prompted the emergence of the concept of computer anxiety. Computer anxiety is a highly researched concept

that elicit attention of many professionals from various backgrounds such as computer technologies, philosophy and psychology.

According to Leso and Peck (1992), computer anxiety can be referred as the sensation of anxiety experienced when interacting with a computer. Various factors, including age, gender, ethnicity, prior computer exposure, self-efficacy, and learning preferences, may affect whether we develop computer anxiety (Leso & Peck, 1992). Another explanation of computer anxiety can be explained as the feeling of strong emotional responses for individuals who perceive computers as a personal threat (Raub, 1981). Although there are many studies that are concerned with the relationship between computers and anxiety, recent studies show that there is a gradual decrease in anxiety and computer interaction (Khasawneh, 2018).

In line with the technology acceptance (Davis, 1989) literature, with the decrease of computer anxiety, other forms of technophobia including artificial intelligence anxiety, online shopping anxiety and mobile anxiety become more prominent (Dönmez-Turan & Kır, 2019). Within the scope of this study, we will focus on defining artificial intelligence anxiety (AIA), similarities and differences from computer anxiety, and its measurement.

2.3.2 Loss of control over AI: Artificial intelligence anxiety (AI)

With the rapid advancements in AI technology, concerns from various sources have sparked which eventually leads to suggestions for government oversight and limitations on AI operation. This kind of reaction is not unexpected, since concerns toward technological change have been present for many years. What distinguishes the concerns towards AI is the involvement of tech industry leaders who are also expressing their concerns on that issue. These concerns are mostly related to the fear of job displacement and the potential misuse of new technologies as well as ethical and privacy issues (Perri, 2001; Russell & Norvig, 2010; Scherer, 2016). This section will focus on ethical concerns surrounding AI, such as privacy, fairness, and accountability, as well as the potential impact of AI on the job market, including job displacement and the emergence of new job opportunities. In addition, AI anxiety and its relationship with attitudes towards AI will be examined.

According to Johnson and Verdicchio (2017), AI anxiety and computer anxiety are similar due to their nature of producing learning anxiety, therefore, AI anxiety can be regarded

as a more evolved version of computer anxiety. On the other hand, differences among these two concepts have been analyzed and some of these differences were addressed by scholars.

To begin with, AI has the capability to make decisions independently, which allows it to function without human intervention, a feature distinct from traditional computers (Beer et al., 2014). In contrasts with the limited forms of early computers, AI shows a wider range of human-like figures and virtual representations (Castelo et al., 2019). As a result, there are different manifestations of AI anxiety from traditional computers. Although computer anxiety had attracted attention from a number of researchers, there were less research on AI anxiety until recently (Wang & Wang, 2019).

Research suggests that in order to examine AI anxiety, it is essential to understand mechanisms that would cause distress and influence emotions and perceptions of individuals (Lemay et al., 2020). Johnson and Verdicchio (2017) state that, AI anxiety stems from the fear and concern about the possibility of uncontrollable AI. In other words, the root of the anxiety comes from the loss of control, rather than the concept itself. One of the main causes of AI anxiety is found to be the excessive concentration on AI programs, while overlooking the role of humans and their actions. This neglect of the human effect is referred to as "sociotechnical blindness" and individuals who are affected by sociotechnical blindness often fail to understand the AI functions as a system, that is interconnected with individuals and societal structures (Johnson & Verdicchio, 2017). This sociotechnical blindness can be highly problematic and anxiety inducing due to focusing only on the technicality of AI such as algorithms, software and hardware while ignoring the role of humans and their decision-making processes during the development and maintenance of AI systems (Johnson & Verdicchio, 2017). In other words, the source of anxiety comes from overlooking the human element since AI is not solely determined by technology; rather, it mostly depends on the actions of human actors. This confusion is highly important and needs to be addressed by AI researchers to make AI more accessible and user-friendly for a wider audience.

Having discussed the possible roots of the anxiety, it would be beneficial to understand what contributes to the concerns towards AI. According to Leavy (2018), machine learning algorithms may learn and convey gender bias and discrimination, which would give rise to an increase in gender inequality. Since the machine only learns from the humans, this inequality can only be averted by promoting fairness and equality. In addition to the possibility of

increasing discrimination and bias by artificial intelligence, a moral divergence may also occur due to the conflict between established human ethical norms and AI's moral values (Russell et al., 2015). The ethical concerns are the main focus of AI ethics researchers, and it is important to establish rules and codes on artificial intelligence to avoid further confusion about the AI. Another concern is the potential emergence of artificial consciousness within AI, in other words, the possibility of AI to function autonomously, independent of human control (Haladjian & Montemayor, 2016). This fear of autonomous AI is closely related with the fear of loss of control over the AI, which would eventually lead to an unpredictable future. This autonomy is also expected to bring up questions about the decision-making processes of artificial intelligence tools that would lead to the possibility to surpass human decision-making abilities and eventually challenging human authority (Clarke, 2019).

Lastly, the fear of job replacement by artificial intelligence, breaches of privacy and safety are occurring themes about the AI anxiety (Chopra & White, 2007; Johnson & Verdicchio, 2017; Manyika et al., 2017; Scherer, 2016).

According to Johnson and Verdicchio (2017), the contributing factors to AI anxiety can be summarized as the lack of clarity on the human and machine autonomy, an excessive focus on AI programs at the expense of human involvement, and a misconceived understanding of technological progress.

According to a study by Lemay et al. (2020), concerns related to artificial intelligence vary across a spectrum, shaped not only by the practical implications of increased automation but also by the way AI's potential negative outcomes are portrayed and discussed in popular discourse. In other words, AI anxiety does not have a constant value, rather it alternates between high and low levels. Therefore, the need for a reliable and valid measure for understanding AI anxiety is required. Wang and Wang (2019) developed the artificial intelligence anxiety scale with the aim of behavior prediction through measuring self-reported concerns towards AI technologies. Coming from the idea of "personal beliefs lead to behavioral intentions", the authors theorized that artificial intelligence anxiety consists of a belief system that acts as a mediator between causal factors and attitudes, which eventually create connections to future behaviors (Wang & Wang, 2019). As a result of their study, Wang and Wang (2019) points out that AI practitioners must consider all dimensions of anxiety including concerns related to

sociotechnical blindness, learning, AI configuration, and job displacement to identify individual differences and take proper measures.

3. METHODOLOGY

3.1. Participants

Within the scope of this study, 4 groups of participants were selected and included to the analysis. In order to calculate the sample size for this study, an a priori type power analysis was performed by using G*Power 3.1 (Faul et al., 2009). G* Power recommended at least 92 participants for this study. First group consisted of individuals who are using AI tools professionally on a daily basis: software developers/designers who are actively engaging in developing and designing AI tools and utilizing AI in the software development/design processes. Second group of the participants included individuals who are professionally using AI tools, however, are not engaged in the development and creation process of such tools. Third group included participants who are familiar with AI tools and using these tools for non-professional purposes. Lastly, fourth group of participants included individuals who are neither using nor familiar with the AI tools. In order to ensure an adequate representation for these four groups of participants, a snowball sampling strategy was employed.

3.2. Materials

3.2.1. Demographic Form

Demographic form consisted of questions such as gender, age, education level. These variables were collected from the participants to be used for comparisons in the analysis section (Appendix 2). This section also included questions on AI preferences and nature of use for the groups formed in terms of AI use.

3.2.2. The General Attitudes toward Artificial Intelligence Scale

The General Attitudes toward Artificial Intelligence scale was developed to assess general attitude of individuals towards artificial intelligence by Schepman and Rodway (2022). There are 20 items in the scale in which 12 of them are positive general attitude towards artificial intelligence and 8 of them are negative general attitude towards artificial intelligence. A five-point Likert-type rating scale is used (1: strongly disagree and 5: strongly agree). The scale is

valid and reliable with Cronbach's alpha: 0.88 for Positive GAAIS and 0.83 for Negative GAAIS (Schepman & Rodway, 2022). The scale is considered to be a strong measure to assess both negative and positive aspects of attitudes towards artificial intelligence (Schepman & Rodway, 2022). The Turkish standardization of the scale was developed by Kaya et al. (2022). The aim is to standardize The General Attitudes toward Artificial Intelligence scale to the Turkish sample while ensuring validity and reliability (Kaya et al., 2022). The scale has 20 items same as the original scale and the items are divided into two subscales: positive and negative items. Items 1 to 12 are positive and 13 to 20 are negative items (Appendix 3). In order to calculate the score that can be obtained from the scale, negative items are reverse-scored, and the overall means of the positive and negative items are calculated individually (Kaya et al., 2022). With Cronbach's alpha value of 0.82 for the positive subscale and 0.84 for the negative subscale, the scale is valid and reliable and is found to be a sufficient measure to assess the attitudes towards artificial intelligence in the Turkish sample (Kaya et al., 2022).

3.2.3. Artificial Intelligence Anxiety Scale

Artificial Intelligence Anxiety Scale was developed by Wang and Wang (2019) to create an instrument for assessing artificial intelligence anxiety and further describing individual's perceptions on advancements in artificial intelligence. The scale consists of 21 items and 4 subscales: learning, job replacement, sociotechnical blindness, and AI configuration (Wang & Wang, 2019). The scale and subscales are found to be valid and reliable, and coefficient alpha values are as follows: overall = 0.964; learning = 0.974; sociotechnical blindness = 0.917; job replacement = 0.917; and AI configuration = 0.961 (Wang & Wang, 2019). Turkish standardization of the scale was developed by Akkaya et al. (2021). 5 items were removed for the standardization due to low consistency with the original scale. As a result, the standardized scale has 16 items and 4 subscales: learning, sociotechnical blindness, job replacement, and AI configuration (Akkaya et al., 2021). Learning subscale includes items 1,2,3,4,5; job replacement subscale includes items 6,7,8,9; sociotechnical blindness subscale includes items 10,11,12,13; and lastly, AI configuration subscale includes items 14,15 and 16 (Appendix 4). The authors conducted 3 analyses with 3 samples. The standardized scale is considered to be valid and

reliable with Cronbach alpha values of overall = 0.937, learning = 0.948, job replacement = 0.895, sociotechnical blindness = 0.875, and AI configuration = 0.950 (Akkaya et al., 2021).

3.2.4. Existential Concern Questionnaire

Existential Concern Questionnaire (ECQ) was developed for both clinical and research practices to assess existential anxieties including death, meaninglessness, and loneliness by Van Bruggen et al. (2017). The scale includes 22 items and has 3 subscales: general existential anxiety, death anxiety and avoidance (Van Bruggen et al., 2017). With overall Cronbach's alpha value of 0.92, the scale is found to be valid and reliable (Van Bruggen et al., 2017). ECQ was standardized to Turkish by Ummet et al. (2018). The standardized scale also has 22 items with 3 subscales: general existential anxiety (13 items), death anxiety (5 items), and avoidance (4 items) (Ummet et al., 2018) (Appendix 5). In order to calculate scale reliability, Cronbach alpha values were examined for the overall and for each subscale and the values are overall = 0.811; general existential anxiety = 0.650; death anxiety = 0.794; and avoidance = 0.838 (Ummet et al., 2018). It has been found that, the standardized is scale is valid and reliable and a solid measure to assess existential concerns for Turkish sample.

3.3. Procedure

Having obtained the necessary permissions by Baskent University Social and Human Sciences Scientific Research and Publication Ethics Committee, a research announcement was prepared, and the study was announced through social media (Twitter, Instagram, LinkedIn etc.).

The participants encountered with a consent form prior to proceeding to the scales. In the consent form, they have been instructed that the study is voluntary, and they can leave the study at any stage. They have been also informed that their identities would remain anonymous throughout the study (Appendix 1). Participants who have agreed the consent form proceeded to Demographic Information Questionnaire. They were expected to fill out information regarding their age, gender, education status as well as their familiarity with the AI tools. Their levels of familiarity were assessed through four questions:

A. I am working on the software development and/or design of the artificial intelligence tools, and I professionally engage with these tools.

B. I use artificial intelligence tools professionally; however, I am not involved in the process of software development and/or design of such tools.

C. I use artificial intelligence tools in my daily life.

D. I do not use and know artificial intelligence tools.

The participants who are using AI tools were also expected to select the tools they are using and describe how they are using these tools through an open-ended question.

Based on their responses, the participants were divided into 4 groups: participants who filled out option A to "AI professionals/developers and designers" group; participants who filled out option B to "professional AI users" group; participants who filled out option C to "non-professional AI users" group; and participants who filled out option D to "non-users" group. After completing the questionnaire, all participants proceeded to complete "The General Attitudes toward Artificial Intelligence Scale", "Artificial Intelligence Anxiety Scale", and "Existential Concern Questionnaire". These scales were randomly assigned to the participants, and having completed the scales, the data collection process was completed.

3.4. Design and Data Analysis

The study follows a correlational design and there are three independent variables and three dependent variables in this study. The independent variables are groups based on AI exposure (AI professionals, AI professional users, AI daily users and non-users), attitudes towards AI (positive vs negative), and gender (women vs men). The dependent variables are AI anxiety (high vs low) and existential anxieties (high vs low). For the first and third hypotheses, attitudes towards AI (positive vs negative) are analyzed as a dependent variable to understand the relationship between AI exposure and gender on the attitudes towards AI.

The SPSS statistical program was utilized to analyze the data gathered from the participant questionnaire and scales in this study. Descriptive statistics, including frequency, mean, standard deviation, and percentage values, were primarily calculated to evaluate the research data.

Normality tests were performed for each group to analyze if the data followed a normal distribution for comparative analyses. The skewness and kurtosis values were calculated to

evaluate the suitability of the scores from the three scales used in the research (The General Attitudes toward Artificial Intelligence Scale, Artificial Intelligence Anxiety Scale, and Existential Concern Questionnaire) for normal distribution.

Skewness and kurtosis values between +3 and -3 were considered to be sufficient for normal distribution (Groeneveld & Meeden, 1984; Hopkins & Weeks, 1990; Moors, 1986). The normality test results indicated that the skewness values of the scale scores ranged from -0.578 to 0.136, and the kurtosis values ranged from -0.535 to 0.233. These results suggested that the scale scores followed a normal distribution.

Consequently, parametric tests were conducted. An independent group t-test was used for two-category variables, and a one-way analysis of variance (ANOVA) was applied for tests with more than two categories. When differences were detected between groups in the variance analyses, the LSD post-hoc test was used to determine which groups differed.

The Pearson Correlation Coefficient was also computed to identify the relationships between the scales used in the study. To determine the relationship between two dependent variables, the total scores of the scales were used, employing the frequently applied technique of calculating the correlation coefficient.

4. RESULTS

In this section, the analyses of the 323 participants, divided into four groups based on their AI tool usage, will be presented. First group comprises individuals who use AI tools professionally on a daily basis and are actively involved in the development and design of these tools. Second group includes individuals who use AI tools professionally but are not involved in the development and creation process of these tools. Third group consists of participants who are familiar with AI tools and use them for non-professional purposes. Lastly, fourth group includes individuals who do not use these tools and are not familiar with them.

Firstly, the descriptive results from the data set with individuals aged between 18 and 70 will be presented, followed by comparison tests conducted with the four groups based on AI usage. In this context, independent group t-tests and one-way ANOVA will be applied to determine whether the scale scores differ according to various variables, and detailed results will be provided. Finally, the relationship between the three scales used in the research (General Attitude Towards Artificial Intelligence Scale, Artificial Intelligence Anxiety Scale, and Existential Concerns Inventory) will be examined.

4.1. Descriptive Findings of the Research

In the study, descriptive findings were obtained based on data from 323 participants, both users and non-users of AI tools, aged between 18 and 70. The participants who were under the age of 18 and did not fully complete the questionnaire were excluded from the analysis. The analysis of demographic variables constitutes the descriptive findings of the research. In this section, data are presented as numbers and percentages through frequency analysis.

Firstly, the analysis based on gender revealed that 5 out of the 323 participants did not specify their gender. Based on the analysis of 318 participants, 70.3% were woman (n = 227), and 28.2% were man (n = 91). According to the frequency analysis based on age, participants' ages ranged from 18 to 70, with an average age of 40. Regarding education levels, 53.9% (n = 174) were undergraduate students/graduates, 41.8% (n = 135) were postgraduate/doctoral students or graduates, and 4.3% were high school graduates.

When examining the purposes and nature of AI usage, which also constitutes the research design, a group of 38 participants used AI applications professionally, worked on the software

and/or design of AI-based applications, and could be referred to as developers. The number of those who used AI-based applications in their professional lives but did not work on software/design was found to be 101. The number of participants who indicated using AI tools in their daily lives was 47, while those who indicated not using AI tools were 53. Thus, it was determined that 239 people answered this question, and 84 people did not respond.

Finally, when asked which artificial intelligence tools were used, a frequency analysis of the responses from all participants, regardless of purpose or group, revealed that 193 individuals answered this question. Accordingly, 49.5% (n = 160) of the participants reported using ChatGPT. Those who indicated using Siri/Alexa comprised 19.5% (n = 63). Users of Google Bard accounted for 12.1% (n = 39). Midjourney users made up 3.8% (n = 12), and those who selected the "Other" option constituted 5.9% (n = 19).

4.2. The General Attitudes Towards Artificial Intelligence Scale Scores

In this section, the scale scores, dimension scores of the scale, and subsequently the scale scores according to the groups formed based on AI usage, calculated from 323 individuals, will be presented.

Table 4. 1.

The General Attitudes Towards Artificial Intelligence Scores

Scale	*n*	*M*	*SD*
Group 1: Professionals & Developers	38	68.86	11.20
Group 2: Professional Users & Non-Developers	101	69.28	9.78
Group 3: Daily Users	47	69.80	8.14
Group 4: Non-Users	53	67.49	11.09
The General Attitudes Towards Artificial Intelligence Scores	323	69.44	9.96

According to Table 4.1, it is observed that the participants, consisting of 323 individuals, scored 69.44 on the scale. Considering that the lowest possible score on the scale is 20 and the highest is 100, scores that are closer to 100 are considered as positive, and scores that are closer to 20 are considered as negative.

When examining the scores obtained from the scale by the four groups formed according to AI usage, it was found that all groups exhibited "positive" attitudes towards artificial intelligence.

4.3. Artificial Intelligence Anxiety Scale Scores

In this section, the scores of the Artificial Intelligence Anxiety Scale, calculated from 323 individuals, the dimension scores of the scale, and subsequently the scale scores according to the groups formed based on AI usage, are presented. Table 4.2 contains the total scale scores.

Table 4. 2.

Artificial Intelligence Anxiety Scale Scores

Scale	*n*	*M*	*SD*
Group 1: Professionals & Developers	38	46.84	12.13
Group 2: Professional Users & Non-Developers	101	46.66	10.39
Group 3: Daily Users	47	43.00	11.90
Group 4: Non-Users	53	46.37	11.66
Artificial Intelligence Anxiety Scale Scores	323	45.64	11.58

Based on Table 4.2, it is observed that the participants have an average total score of 45.64 on the scale. Accordingly, considering that the lowest possible score on the scale is 16 and the highest is 80, scores that are closer to 16 are considered as low, and scores that are closer to 80 are considered as high. Therefore, it is understood that the level of AI anxiety is closer to low levels.

According to the calculations made for the groups formed based on AI usage, it is seen that all scores indicate proximity to low levels. Therefore, it can be stated that the level of AI anxiety among all participants, regardless of whether they use AI or not, is closer to low levels.

Given that the AI Anxiety Scale consists of four dimensions, the averages of the scores for these dimensions have also been calculated for the groups.

Table 4. 3.

Dimensions of AI Anxiety Scale

Dimensions	**Groups**	*n*	*M*	*SD*
Learning	Group 1: Professionals & Developers	38	11.71	4.74
	Group 2: Professional Users & Non-Developers	101	11.43	3.89
	Group 3: Daily Users	47	10.87	3.88
	Group 4: Non-Users	53	11.73	3.64
Job Replacement	Group 1: Professionals & Developers	38	12.34	3.59
	Group 2: Professional Users & Non-Developers	101	12.43	3.11
	Group 3: Daily Users	47	11.31	3.58
	Group 4: Non-Users	53	12.28	3.73
Sociotechnical Blindness	Group 1: Professionals & Developers	38	13.36	3.14
	Group 2: Professional Users & Non-Developers	101	13.41	2.98
	Group 3: Daily Users	47	12.44	3.46
	Group 4: Non-Users	53	13.35	3.64
AI Configuration	Group 1: Professionals & Developers	38	9.42	3.14
	Group 2: Professional Users & Non-Developers	101	9.37	3.39
	Group 3: Daily Users	47	8.36	3.18
	Group 4: Non-Users	53	9.00	3.34

As seen on Table 4.3, it is observed that the score distributions of the four groups formed based on AI usage are close to each other in terms of the dimensions of the Artificial Intelligence Anxiety Scale. When the scores are analyzed, it is found that the anxiety levels of the four groups are closer to low levels in the dimensions of learning, job replacement, sociotechnical blindness, and AI configuration. Thus, this result indicates that the purpose of AI usage or the lack of AI usage does not alter the level of anxiety. This situation will be further examined in comparison tests.

4.4. Existential Concern Questionnaire Scores

In this section, the scale scores and the scores obtained from the "General Anxiety" and "Death Anxiety" dimensions of the Existential Concern Questionnaire are presented to determine the levels of existential concerns of the groups formed based on AI usage. The score distributions are provided in Table 4.4.

Table 4. 4.

Existential Concern Questionnaire Score

Scale	*n*	*M*	*SD*
Group 1: Professionals & Developers	38	49.36	15.44
Group 2: Professional Users & Non-Developers	101	51.04	15.71
Group 3: Daily Users	47	47.70	13.15
Group 4: Non-Users	53	49.28	16.10
Existential Concern Questionnaire Score	323	50.37	15.28

Table 4.4 showed that, according to the total scores from the Existential Concerns Questionnaire, all participants exhibit a "low level" of existential concern, regardless of the purpose of AI usage or non-usage. Considering that the minimum score that can be obtained from the inventory is 22 and the maximum score is 110, it can be understood that the scores that are closer to 22 are considered as low and scores that are closer to 110 are considered as high.

The average scores of the groups based on the dimensions of the Existential Concerns Questionnaire are presented in Table 4.5.

Table 4. 5.

Dimensions of Existential Concern Questionnaire

Dimensions	**Groups**	*n*	*M*	*SD*
General EA	Group 1: Professionals & Developers	38	30.02	9.37
	Group 2: Professional Users & Non-Developers	101	30.85	10.30
	Group 3: Daily Users	47	28.23	8.66
	Group 4: Non-Users	53	29.26	10.00
Death Anxiety	Group 1: Professionals & Developers	38	10.94	4.27
	Group 2: Professional Users & Non-Developers	101	11.56	4.05
	Group 3: Daily Users	47	11.12	3.69
	Group 4: Non-Users	53	11.56	4.57
Avoidance	Group 1: Professionals & Developers	38	8.39	3.90
	Group 2: Professional Users & Non-Developers	101	8.63	3.00
	Group 3: Daily Users	47	8.34	2.58
	Group 4: Non-Users	53	8.45	3.04

As it can be observed from Table 4.5, the general anxiety level is low for all four groups.

When the death anxiety dimension scores are examined, it is found that all four groups have a "low level" of death anxiety.

Upon examining the avoidance dimension scores, it is observed that all groups exhibit "low level" concerns related to avoidance. The average scores obtained are similar across all four groups.

4.5. The Relationships Between General Attitude Towards Artificial Intelligence, AI Anxiety, and Existential Concerns

In this section, the relationships between the measurement tools used in the study have been examined using the Pearson Correlation Coefficient (*r*).

According to the results, a moderate and inverse relationship was found between the General Attitude Towards Artificial Intelligence Scale and the AI Anxiety Scale ($r = -.68$; $p < .001$). Considering the correlation coefficient, this is close to a high relationship ($r = -.68 < .70$). A correlation coefficient above .70 is generally considered high, and our coefficient of -.68 approaches this threshold. Accordingly, we can say that as the general attitude towards artificial intelligence increases, AI anxiety decreases.

Other relationships were examined with respect to the Existential Concerns Questionnaire. When the Pearson Correlation Coefficient (r) was calculated for the relationship between the AI Anxiety Scale and the Existential Concerns Inventory, a low-level and positive relationship was observed ($r = .23$; $p < .001$). Accordingly, as AI anxiety increases, existential concerns also increase at a low level.

No significant relationship was found between the general attitude towards artificial intelligence and existential concerns ($r = .02$; $p < .001$). This very low, almost negligible, positive relationship indicates that as the general attitude towards artificial intelligence increases, existential concerns decrease at a very low level.

4.6. Examination of General Attitude Towards Artificial Intelligence, AI Anxiety, and Existential Concerns According to Various Variables

In this section, the analysis results regarding whether the scores of general attitudes towards artificial intelligence, AI anxiety, and existential concerns differ according to demographic variables such as gender and the groups formed based on AI usage are presented.

4.6.1. Gender differences

The independent group t-test was conducted to examine the differences in scale scores according to gender for all participants, regardless of grouping. The results are provided in Table 4.6.

Table 4. 6.

t-Test Results for The Differentiation of The Scales According to Gender

Dimension/Scale	Gender	*n*	*M*	*SD*	*df*	*t*	*p*
General Attitude Towards AI	Woman	227	68.45	9.54	316	3.093	.002
	Man	91	72.19	10.23			
AI Anxiety	Woman	227	46.39	11.14	316	2.055	.041
	Man	91	43.46	12.36			
Existential Concerns	Woman	227	51.12	15.65	316	1.740	.083
	Man	91	47.86	13.62			

Upon examining Table 4.6, it can be observed that out of the 323 participants, 5 did not respond. The general attitudes towards AI and AI anxieties of the remaining 318 participants significantly differed according to gender ($p < .05$). Accordingly, it was found that women have lower general attitudes towards AI compared to men ($M = 68.45$). Additionally, women were found to have higher AI anxiety compared to men ($M = 46.39$). Existential concerns, however, did not show a significant difference according to gender ($p > .05$).

Since the four groups formed based on AI usage were statistically appropriate in terms of group numbers but not suitable in terms of the distribution of gender numbers (i.e., the number of women and men in the groups was less than 30), no further gender-based analysis was conducted within the groups.

4.6.2. AI usage group differences

Another comparison in the study was conducted to examine whether the scores of general attitudes towards AI, AI anxiety, and existential concerns differed among the four groups formed based on AI usage. For this purpose, a one-way analysis of variance (One-Way ANOVA) was applied, and the results are provided in Table 4.7.

Table 4. 7.

Analysis of Variance Results for the Differentiation of Scale Scores Based on AI Usage Groups

Scale	Groups	*n*	*M*	*SD*	*F*	*p*
General Attitude Towards AI	Group 1: Professionals & Developers	38	68.86	11.20	.52	.665
	Group 2: Professional Users & Non-Developers	101	69.28	9.78		
	Group 3: Daily Users	47	69.80	8.14		
	Group 4: Non-Users	53	67.40	11.09		
AI Anxiety	Group 1: Professionals & Developers	38	46.84	12.13	1.31	.271
	Group 2: Professional Users & Non-Developers	101	46.66	10.39		
	Group 3: Daily Users	47	43.00	11.90		
	Group 4: Non-Users	53	46.37	11.66		
Existential Concerns	Group 1: Professionals & Developers	38	49.36	15.44	.54	.650
	Group 2: Professional Users & Non-Developers	101	51.04	15.71		
	Group 3: Daily Users	47	47.70	13.15		
	Group 4: Non-Users	53	49.28	16.10		

Upon examining Table 4.7, it is observed that the groups formed based on AI usage do not have a statistically significant difference in general attitudes towards AI, AI anxiety, and existential concerns ($p > .05$).

5. DISCUSSION

This study involved 323 participants categorized into four groups based on their engagement with AI and analyzed the differences on attitudes towards artificial intelligence (AI), AI anxiety, and existential anxieties among various groups. These groups were AI professionals (involved in developing and designing AI and machine learning tools), professional AI users (who use AI tools as part of their professional life), non-professional AI users (who engage with AI tools on a daily basis), and non-users (who neither engage with nor are familiar with AI tools). Another concept that this study aimed to understand is to determine the effect of gender on AI anxiety, attitudes towards AI, and existential anxieties.

According to Hypothesis 1, AI exposure (group) is expected to be related with attitudes towards AI, AI anxiety, and existential anxieties. Specifically, it was hypothesized that individuals with more exposure to AI (AI professionals and professional users) would have more positive attitudes towards AI compared to those with less exposure (daily users and non-users). Additionally, these individuals were expected to experience lower levels of AI anxiety and existential anxiety compared to those with less exposure.

Hypothesis 2 proposed that attitudes towards AI would have a relationship with both AI anxiety and existential anxieties. It was suggested that positive attitudes towards AI would be associated with lower levels of AI anxiety and existential anxiety. On the other hand, negative attitudes towards AI were expected to exacerbate AI anxiety.

Hypothesis 3 suggested that gender would have an effect on attitudes towards AI, the levels of AI anxiety, and existential anxieties. Specifically, it was hypothesized that men would have more positive attitudes towards AI compared to women, and that women would experience higher levels of AI anxiety and existential anxiety compared to men.

5.1. Interpretation of Findings

Our findings suggest that exposure to AI has a limited impact on attitudes and anxieties related to AI. Higher exposure to AI (as seen in professionals and professional users) is

associated with slightly more positive attitudes towards AI in line with our Hypothesis 1a. However, the expected decrease in AI anxiety with increased exposure (Hypothesis 1b) was only partially supported, as daily users exhibited slightly lower anxiety levels. The hypothesis that increased exposure would reduce existential anxiety (Hypothesis 1c) was not strongly supported, since all groups exhibit a "low level" of existential concern.

Attitudes towards AI is found to be related with AI anxiety but not existential anxieties, therefore, the results partially supported Hypotheses 2a and 2b. Positive attitudes are found to have a relationship with lower AI anxiety, but the relationship with existential anxiety was not as strong as we expected. Moreover, negative attitudes did not significantly exacerbate AI anxiety, in contradiction to Hypothesis 2c.

Gender differences were pronounced in attitudes and AI anxiety, in line with the Hypotheses 3a and 3b. Women showed fewer positive attitudes and higher AI anxiety. One possible explanation for can be the varying levels of familiarity and comfort with technology. However, the hypothesized gender effect on existential anxiety (Hypothesis 3c) was not supported.

5.2. Theoretical Implications and Suggestions for Future Research

The results obtained from this study showed that, recent attitudes towards technology, specifically artificial intelligence, would not be fully explained by more traditional theories such as Technology Acceptance Model (TAM) (Davis, 1989) and its extensions (Venkatesh & Davis, 2000). Therefore, it is essential to extent literature on artificial intelligence and its applications on human psychology.

One important finding from this study is the gender differences in terms of attitudes towards AI and AI anxieties. Therefore, it is essential to address gender-specific barriers and perceptions in AI-related fields.

5.3. Practical Implications

Understanding the underlying factors that affect attitudes towards AI and AI anxieties can provide important insights on the development of educational and training programs which aims at increasing AI literacy and reducing anxiety.

For example, education programs may focus on explaining how artificial intelligence systems work, what are their benefits, and their limitations to reduce anxiety. Ethical training is another crucial concept that can be included in the educational programs. In order to build trust and understanding of responsible AI use, addressing these ethical concerns through education is essential.

Gender has an important effect on how individuals perceive artificial intelligence, as women showed negative attitudes towards AI and reported higher AI related anxiety. As a result, it is essential to focus on creating educational programs aimed at minimizing these gender disparities.

5.4. Limitations of the study

This study has several limitations, including limited access to professional AI developers who design AI tools, and possible bias from self-reported data. Moreover, since this study has a cross-sectional design, it was not possible to draw causal relationships.

We were able to reach out to only 38 participants who used AI applications professionally, worked on the software and/or design of AI-based applications. Other groups included more participants; therefore, the sample was not fully homogenous and may not be representable for more diverse groups.

In addition, the gender distribution of participants heavily consisted of woman participants with 70.3%. This caused another limitation of representation for the sample. For future studies, it is suggested that focusing on a more diverse sample would enhance the chances of generalizability.

5.5. Conclusion

In conclusion, this study provides valuable insights into the complex dynamics of AI attitudes and anxieties. Addressing gender disparities is essential for ensuring inclusive AI adoption. Future research should continue to explore these themes, while focusing on longitudinal studies and interventions to enhance AI literacy and reducing associated anxieties.

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APPENDICIES

APPENDIX 1: INFORMED CONSENT FORM

Bu çalışma Başkent Üniversitesi Sosyal Psikoloji Tezli Yüksek Lisans programı kapsamında Prof. Dr. Doğan Kökdemir danışmanlığında Sosyal Psikoloji yüksek lisans öğrencisi Sıla Ermut tarafından yürütülen bir tez çalışmasıdır. Çalışmanın amacı yapay zekaya karşı tutumların varoluşsal psikoloji kapsamında araştırılmasıdır. Çalışmaya katılmayı kabul etmeniz durumunda 3 adet anketi cevaplamanız beklenmektedir. Anketler ortalama 10-15 dakika sürecektir ve öncesinde demografik bilgi formunu doldurmanız gerekmektedir. Ankette yer alan soruların doğru veya yanlış cevapları olmamakla birlikte sizin görüşlerinizi yansıtması önemlidir. Çalışma tamamen gönüllülük esasına dayanmaktadır ve kesinlikle kimlik bilgileriniz alınmayacaktır. Çalışmanın herhangi bir bölümünde rahatsızlık hissedeceğiniz sorular bulunmamakla birlikte, devam etmek istemediğiniz durumda çalışmayı istediğiniz zaman bırakabilirsiniz.

Çalışmayla ilgili bilgi almak veya sorularınız için adresinden araştırmacıya ulaşabilirsiniz.

Katılımınız için teşekkür ederiz.

Yukarıda bahsedilen çalışmayla ilgili bilgilendirmeyi okudum, tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çalışmadan ayrılabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

- ☐ Evet, kabul ediyorum.
- ☐ Hayır, kabul etmiyorum.

APPENDIX 2: DEMOGRAPHIC INFORMATION QUESTIONNAIRE

Cinsiyetiniz:

- Kadın
- Erkek
- İkili olmayan (non-binary)
- Belirtmek istemiyorum

Doğum yılınız: _____

Eğitim düzeyiniz:

- Ortaokul ve altı
- Lise
- Lisans Öğrencisi/Mezunu
- Yüksek Lisans/Doktora Öğrencisi/Mezunu

Yapay Zekâ uygulamalarına ne kadar aşinasınız? Lütfen cevap verirken yapay zekâ uygulamalarını kullanma sıklığınızı ve hangi amaçla kullandığınızı (profesyonel olarak, iş amaçlı, gündelik işler için vs.) göz önünde bulundurarak cevaplayınız.

- Yapay zekâ temelli uygulamaların yazılımı ve/veya tasarımı üzerine çalışıyorum ve profesyonel olarak bu uygulamaları kullanıyorum. Lütfen hangi uygulamaları kullandığınızı belirtiniz, birden fazla seçenek işaretleyebilirsiniz:
  - **ChatGPT**
  - **Siri/Alexa**
  - **Midjourney**
  - **Google Bard**
  - **Diğer (lütfen belirtiniz) _____**
- Yapay zekâ uygulamalarını iş hayatımda kullanıyorum ancak yazılım/tasarımı üzerine çalışmıyorum. Lütfen hangi uygulamaları kullandığınızı belirtiniz, birden fazla seçenek işaretleyebilirsiniz:
  - **ChatGPT**
  - **Siri/Alexa**
  - **Midjourney**
  - **Google Bard**

- **Diğer (lütfen belirtiniz) _____**

 Yapay zekâ uygulamalarını gündelik hayatımda kullanıyorum. Lütfen hangi uygulamaları kullandığınızı belirtiniz, birden fazla seçenek işaretleyebilirsiniz:

- **ChatGPT**
- **Siri/Alexa**
- **Midjourney**
- **Google Bard**
- **Diğer (lütfen belirtiniz) _____**

 Yapay zekâ uygulamalarını kullanmıyorum/bilmiyorum.

Eğer yapay zekâ uygulamalarını profesyonel olarak kullanıyorsanız kullanma şekliniz ile ilgili bilgi veriniz. Örneğin: makina öğrenimi ile yapay zekâ modeli geliştirmek; metin ve konuşma verilerini analiz ederek dil tabanlı yapay zekâ uygulamaları geliştirmek; yapay zekâ tabanlı robot geliştirmek; görüntü analizi yapmak; otonom araçlar, sürücü yardım sistemleri ve trafik yönetimi için yapay zekâ teknolojileri geliştirmek; yapay zekâ tabanlı arama motoru optimizasyonu geliştirmek gibi.

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

Eğer yapay zekâ uygulamalarını iş hayatınızda kullanıyorsanız kullanma şekliniz ile ilgili bilgi veriniz. Örneğin: yapay zekâ algoritmalarını kullanarak tahminlerde bulunmak ve veri madenciliği yapmak; kişiselleştirilmiş pazarlama kampanyaları oluşturmak; CV değerlendirmesi, performans yönetimi ve işe alım süreçlerini düzenlemek; sosyal medya platformlarında marka itibarı, müşteri geri bildirimi ve rekabet analizi gibi bilgileri izlemek ve analiz etmek gibi.

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

Eğer yapay zekâ uygulamalarını gündelik olarak kullanıyorsanız kullanma şekliniz ile ilgili bilgi veriniz. Örneğin: günlük görevleri yönetmek, hava durumu bilgisi almak, hatırlatmalar ayarlamak, müzik çalmak; fiziksel aktiviteyi izlemek, uyku kalitesini analiz

etmek ve sağlık verilerini kaydetmek; sağlıkla ilgili sorunları teşhis etmek veya sağlık önerileri almak; çeviri yapmak ve yapılan çevirilerin kontrolünü yapmak; gelir ve giderleri izlemeye, bütçe oluşturmak ve yatırım önerileri almak gibi.

APPENDIX 3: YAPAY ZEKÂYA YÖNELIK GENEL TUTUM ÖLÇEĞI

Bu anket yapay zekaya yönelik tutumlarınız hakkında bilgi almak için tasarlanmıştır. Lütfen her bir maddeyi dikkatle okuyarak size en uygun olan seçeneği 1 ile 5 arasında işaretleyiniz.

No:	**Yapay Zekâya Yönelik Genel Tutum Ölçeği**	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1	Günlük hayatımda yapay zekâ sistemlerini kullanmak ilgimi çekiyor.					
2	Yapay zekânın birçok faydalı uygulaması vardır.					
3	Yapay zekâ heyecan vericidir.					
4	Yapay zekâ bu ülke için yeni ekonomik fırsatlar sağlayabilir.					
5	Yapay zekâyı kendi işimde kullanmak isterim.					
6	Yapay zekâya sahip bir yazılım/robot, birçok rutin işi bir insandan daha iyi yapabilir.					
7	Yapay zekânın yapabileceklerinden etkilendim.					
8	Yapay zekanın insanların iyi oluşları üzerinde olumlu etkileri olabilir.					
9	Yapay zekâlı sistemler insanların daha mutlu hissetmelerine yardımcı olabilir.					
10	Yapay zekâlı sistemler insanlardan daha iyi performans gösterebilir.					
11	Toplumun çoğu, yapay zekâ ile donatılmış bir gelecekten faydalanacaktır.					
12	Rutin işlemler için, bir insan yerine yapay zekâlı bir sistemle					

	etkileşime girmeyi tercih ederim.					
13	Yapay zekânın tehlikeli olduğunu düşünüyorum.					
14	Kuruluşlar yapay zekâyı etik olmayan bir şekilde kullanırlar.					
15	Yapay zekâyı şeytani/kötü niyetli buluyorum.					
16	Yapay zekâ insanları gözetlemek için kullanılır.					
17	Yapay zekânın gelecekteki kullanımlarını düşündüğümde üzüntüden titriyorum.					
18	Yapay zekâ insanların kontrolünü ele geçirebilir.					
19	Yapay zekâlı sistemlerin birçok hata yaptığını düşünüyorum.					
20	Yapay zekâ gitgide daha fazla kullanılırsa benim gibi insanların zarar göreceğini düşünüyorum.					

APPENDIX 4: YAPAY ZEKA KAYGI ÖLÇEĞİ

Bu anket yapay zekaya yönelik hissettiğiniz kaygılarınız hakkında bilgi almak için tasarlanmıştır. Lütfen her bir maddeyi dikkatle okuyarak size en uygun olan seçeneği 1 ile 5 arasında işaretleyiniz.

No:	**Yapay Zeka Kaygı Ölçeği**	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1	Bir yapay zeka tekniği / ürünü ile ilgili tüm özel işlevleri anlamayı öğrenmek beni endişelendiriyor.					
2	Yapay zeka tekniklerini / ürünlerini kullanmayı öğrenmek beni kaygılandırıyor.					
3	Bir yapay zeka tekniğinin / ürününün belirli işlevlerini kullanmayı öğrenmek beni endişelendiriyor.					
4	Bir yapay zeka tekniğinin / ürününün nasıl çalıştığını öğrenmek beni kaygılandırıyor.					
5	Bir yapay zeka tekniği / ürünü ile etkileşime girmeyi öğrenmek beni endişelendiriyor.					
6	Bir yapay zeka tekniğinin / ürününün insanların yerini alabileceğinden endişe ediyorum.					
7	İnsansı robotların yaygın kullanımı, işleri insanlardan uzaklaştıracağından korkuyorum.					
8	Yapay zeka tekniklerini / ürünlerini kullanmaya başlarsam, onlara					

	bağımlı hale geleceğim ve bazı muhakeme becerilerimi kaybedeceğimden korkuyorum.					
9	Yapay zeka tekniklerinin / ürünlerinin birilerinin mesleğini elinden almasından endişe ediyorum.					
10	Bir yapay zeka tekniğinin / ürününün kötüye kullanılabileceğinden endişe ediyorum.					
11	Bir yapay zeka tekniği / ürünü ile potansiyel olarak ilişkili çeşitli sorunlardan endişe ediyorum.					
12	Bir yapay zeka tekniğinin / ürününün kontrolden çıkmasından ve arızalanmasından endişe ediyorum.					
13	Bir yapay zeka tekniğinin / ürününün robot özerkliğine yol açabileceğinden endişe ediyorum.					
14	İnsansı yapay zeka tekniklerini / ürünlerini (örneğin insansı robotları) ürkütücü buluyorum.					
15	İnsansı yapay zeka tekniklerini / ürünlerini (örneğin insansı robotları) göz korkutucu buluyorum.					
16	Nedenini bilmiyorum ama insansı yapay zeka teknikleri / ürünleri (örneğin insansı robotları) beni korkutuyor.					

APPENDIX 5: VAROLUŞSAL ENDIŞELER ANKETI (ECQ)

Aşağıdaki ifadeler, insanların yaşadıkları deneyimlerle ilgilidir. Lütfen bu deneyimleri ne sıklıkla yaşadığınızı düşünün ve doğru cevabı işaretleyin. Bu örnek açıklama amacıyla verilmiştir:

Finansal durumum hakkında endişelenirim.

1: Asla 2: Nadiren 3: Ara Sıra 4: Sıklıkla 5: Her Zaman

Örneğin, bu konu hakkında sık sık endişeleniyorsanız, "sıklıkla" seçeneğini işaretleyin. Eğer hiçbir zaman finansal durumunuz hakkında endişelenmiyorsanız, "asla" seçeneğini işaretleyin. İfade endişe ile alakalıdır. Eğer ara sıra finansal durumunuzu düşünüyorsanız ama bunun hakkında endişelenmiyorsanız, lütfen "asla" seçeneğini işaretleyin.

No:	**Varoluşsal Endişeler Anketi (ECQ)**	Asla	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
1	Yaşamın anlamının olup olmadığını sorgulamak beni endişelendirir.					
2	Yaşamın bana birçok seçenek sunduğunu fark etmek beni korkutur.					
3	Sanki ait değilmişim gibi hissettiğim bu dünyada olmak beni endişelendirir.					
4	Varoluşun her an bana kötü bir şey olacakmış gibi beni tehdit ettiğini hissederim					
5	Zamanın birinde öleceğimi bilmek beni korkutur.					
6	Hayatın anlamı hakkında endişelenirim.					
7	Tüm seçimlerimim bir sonucu olduğunu unutmaya çalışırım					
8	Kendimle olan bağımı kaybetmekten endişe duyarım.					
9	Sonuçta hayatta sadece kendimle olma duygusuyla mücadele ederim.					
10	Hayatımın geçip gitmekte olduğu düşüncesi beni endişelendirir.					
11	Hayatın anlamının olup olmadığı sorusu aklıma geldiğinde hemen başka şeyler düşünmeye çalışırım.					
12	Yaşayabileceğim hayatı yaşayamadığımdan endişelenirim.					
13	Diğer insanların beni iyi bir şekilde tanıyamayacaklarını bilmek beni endişelendirir.					

14	Umulmadık bir anda bana kötü bir şey olacağından endişelenirim.					
15	Hayatın bir sonu olduğunu düşünmemeye çalışırım.					
16	Bir zamanlar önemsediğim şeylerin, bana artık anlamsız gelmesi beni korkutur.					
17	Hayatın içindeki şeylerden kurtulamamaktan korkarım.					
18	Gerçekte kim olduğum sorusunu düşünmekten kaçınırım.					
19	Diğer insanlarla aramda bir boşluk olmasından endişe duyarım.					
20	Vücudumun hayatın tehlikelerine karşı ne kadar zayıf olduğunu fark etmek beni endişelendirir.					
21	Öldüğüm anda her şeyi geride bırakacak olmaktan endişe duyarım.					
22	Kendimi asla net bir şekilde tanıyamayacak olmaktan korkarım.					

APPENDIX 6: ETHICAL APPROVAL

Evrak Tarih ve Sayısı: 18.11.2023-287113

1993
BAŞKENT ÜNİVERSİTESİ
Akademik Değerlendirme Koordinatörlüğü

18.11.2023

Sayı : E-62310886-605.99-287113
Konu : Sıla Ermut'un Etik Kurul Onayı Hk.

SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi : 17.10.2023 tarih ve 277468 sayılı yazınız.

Enstitünüz Psikoloji Ana Bilim Dalında, Prof. Dr. Doğan Kökdemir'in danışmanlığında, Sosyal Psikoloji Yüksek Lisans Programı öğrencisi Sıla Ermut tarafından yürütülecek olan "The Interplay Between AI Exposure, Attitudes, Anxiety, and Existential Anxieties: A Multidimensional Approach" adlı tez çalışması değerlendirilmiş ve bilgilerinize ekte sunulmuştur.

Prof. Dr. Mehmet Abdülkadir VAROĞLU
Kurul Başkanı

Ek: Değerlendirme Formu

Bu belge, güvenli elektronik imza ile imzalanmıştır.

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Evrak Tarih ve Sayısı: 18.11.2023-287113

Sayı : 17162298.600-238 6 Kasım 2023
Konu : Tez Çalışması

İlgili Makama

Üniversitemiz Sosyal Bilimler Enstitüsü Psikoloji Ana Bilim Dalında, Prof. Dr. Doğan Kökdemir'in danışmanlığında, Sosyal Psikoloji Yüksek Lisans Programı öğrencisi Sıla Ermut tarafından yürütülecek olan "The Interplay Between AI Exposure, Attitudes, Anxiety, and Existential Anxieties: A Multidimensional Approach" adlı tez çalışması değerlendirilmiş ve yapılmasında bir sakınca olmadığı tespit edilmiştir.
Bilgilerinize saygılarımızla sunarız.

Başkent Üniversitesi Sosyal ve Beşeri Bilimler ve Sanat Araştırma Kurulu

Ad, Soyad	Değerlendirme	İmza
Prof. Dr. M. Abdülkadir Varoğlu	Olumlu/~~Olumsuz~~	
Prof. Dr. Gözen Güner Aktaş	Olumlu/~~Olumsuz~~	
Prof. Dr. Sadegül Akbaba Altun	Olumlu/~~Olumsuz~~	
Prof. Dr. Hasan Tahsin Fendoğlu	Olumlu/~~Olumsuz~~	
Prof. Dr. Filiz Kalelioğlu	Olumlu/~~Olumsuz~~	
Prof. Dr. Hidayet Hale Künüçen	Olumlu/~~Olumsuz~~	
Prof. Dr. Özcan Yağcı	Olumlu/Olumsuz	