Factors Affecting Consumers' Online Purchasingattitudes Towards Ads Guided By Artificial Intelligence[1]

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ABSTRACT

The aim of this study is to try to explain the factors that are thought to affect consumers' attitudes towards online advertisements guided by artificial intelligence. In this context, by utilizing the TAM model, innovation value, trust and perceived risk variables were added to the research model developed to explain the attitudes of individuals towards online advertisements guided by artificial intelligence. Although it is observed that the trust and perceived risk factors added to the model do not have a significant effect on AI-directed ads, it is thought that the non-significance of the two proposed hypotheses may be due to the data set. Because the literature in which the research model was developed shows that the perceived risk factor has a negative effect on attitudes. In this current study, it was observed that perceived risk had a negative effect on attitudes (R^2=-0,038, $p \leq$,106) but the hypothesis test was not significant. Similarly, although it was observed that trust had a positive effect on attitudes (R^2=0.050, $p \leq$,117), the hypothesis test was not significant. On the other hand, perceived usefulness (R^2=-0,407 $p \leq$,05), perceived ease of use (R^2=-0,507, $p \leq$,05), perceived novelty (R^2=-0,186, $p \leq$,05) positively affect attitudes towards AI-directed advertisements

Keywords: Artificial Intelligence, Attitudes Towards Ai, Perceived Usefulness, Perceived Ease of Use, Novelty Value, Trust to Ai, Perceived Risk.

TÜKETİCİLERİN YAPAY ZEKÂ TARAFINDAN YÖNLENDİRİLEN REKLAMLARA YÖNELİK ÇEVRİMİÇİ SATIN ALMA TUTUMLARINI ETKİLEYEN FAKTÖRLER

ÖZ

Bu çalışmanın amacı yapay zekânın yönlendirdiği çevrimiçi reklamlara ilişkin tüketicilerin satın almaya yönelik tutumlarını etkilediği düşünülen faktörleri açıklamaya çalışmaktır. Bu kapsamda TAM modelinden yararlanılarak, geliştirilen araştırma modeline, yenilik değeri, güven ve algılanan risk değişkenleri eklenerek, bireylerin yapay zekânın yönlendirdiği çevrimiçi reklamlara yönelik tutumları açıklanmaya çalışılmıştır. Modele eklenen güven ve algılanan risk faktörlerinin yapay zekânın yönlendirdiği reklamlara yönelik anlamlı bir etkisinin olmadığı gözlemlense de önerilen iki hipotezin anlamlı olmamasının veri seti kaynaklı olabileceği düşünülmektedir. Çünkü araştırma modelinin geliştirildiği literatür algılanan risk faktörünün tutumlar etkisi üzerinde negatif yönde etkisi olduğunu göstermektedir. Bu mevcut çalışmada da algılanan riskin tutumlar üzerinde negatif bir etkisi olduğu (R^2=-0,038, $p \leq$,106) ancak hipotez testinin anlamlı çıkmadığı görülmüştür. Yine benzer şekilde güvenin tutumlar üzerinde pozitif bir etkisi olduğu görülse de (R^2=0,050, $p \leq$,117) hipotez testinin anlamlı çıkmadığı gözlenmiştir. Bu karşın algılanan kullanışlılık (R^2=-0,407 $p \leq$,05), algılanan kullanım kolaylığı (R^2=-0,507, $p \leq$,05) ve algılanan

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yenilik değerlerinin (R²=-0,186, p≤ ,05) yapay zekânın yönlendirdiği reklamlara yönelik tutumları pozitif yönde etkilediği görülmüştür.

INTRODUCTION

Today's competition between businesses and rapid advances in technology have begun to radically change the way organizations do business. As a result of these technological developments, IS/IT research is increasing. Marketers have abandoned traditional methods of shaping consumer behavior and turned to digital technologies. Individuals' adaptation to and acceptance of newness involves a process and past research shows that even personality factors are effective in the acceptance of innovation (Rogers 1995). Rogers (1995) explained the process of adapting to the new situation in detail in his diffusion of innovation model (DOI) and this model has been the subject of many studies (Demir 2006; Wooliscroft & Wooliscroft 2016; Cheng, Kao & Lin 2004; Leerapong 2013). Since behavioral intention to use a system (INT) is the main determinant of the actual use of the system, intention-based models have been developed to determine technology acceptance and use. Fishbein & Ajzen (1975) define behavioral intention as a measure of the strength of the intention to perform a particular behavior.

The Theory of Reasoned Action (TRA) model developed by Ajzen & Fishbein (1980) is a popular intention model that can be used to examine behavioral intentions regarding technology acceptance or use. In addition to these studies, Ajzen (1991) The Theory of Planned Behavior (TPB) is another model that is highly accepted in explaining people's behaviors. However, this model cannot fully measure the variables specific to people's technology use (Marikyan, Papagiannidis & Stewart 2023). Therefore, there is a need to explain the determinants that affect the use of technology and information systems. To address the limitations related to the lack of a theoretical model and scales to measure technology acceptance, Davis (1989) developed the Technology Acceptance Model (TAM) based on the Theory of Reasoned Action (Marikyan et al. 2023). Today, this model is referenced by many studies in exploring the stages of technology use (Rafique et al. 2020; Hubert et al. 2017; Miller & Khera 2010).

As the use of technology has become widespread in the world and access to technology has become easier, studies in this field have also increased and gained importance. As in the diffusion of innovation model, people's adaptation to technology involves certain stages in

accepting and adapting to new technological developments and there are factors affecting this acceptance process. Venkatesh et al. (2003) in The Unified Theory of Acceptance and Use of Technology (UTAUT) model argues that four basic concepts (performance expectancy, effort expectancy, social influence and facilitating conditions) are direct determinants of behavioral intention and ultimately behavior, and that these concepts are regulated by gender, age, experience and willingness to use, respectively. This theory emerged by critically examining and synthesizing eight prominent theories and models, including the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behaviour (TPB), an amalgamation of TBP/TAM, the Model of PC Utilization, Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT) (Williams, Rana & Dwivedi 2015: 444).

Past research has shown that people's acceptance of new technologies is often reluctant at first, and this problem has long been discussed in management information systems (MIS) (Ginzberg 1981; Swanson 1987). In addition to their theoretical importance, more effective measures of predicting and explaining system usage can be of great practical benefit to vendors seeking to assess user demand for new design ideas and to information systems managers of user organizations seeking to evaluate these vendor proposals (Davis 1989: 319). In his research, Davis (1989) developed the Technology Acceptance Model (TAM) to provide more effective measures to better predict and explain the use of technology. According to TAM, technology acceptance takes place in a three-stage process. In this process, external factors (system design features) trigger cognitive responses (perceived ease of use and perceived usefulness). These cognitive reactions in turn generate an emotional response (attitude/intention to use technology), which in turn affects usage behavior (Davis 1989; Davis 1993).

As mentioned before, Rogers (1995) many models have tried to explain the process of individuals' adaptation to new technologies (DOI - Diffusion of Innovation Model), Fisbein & Ajzen (1975) (TRA - Theory of Reasoned Action), Davis (1989) (TAM - Technology Acceptance Model, UTAUT (Venkatesh et al. 2003). However, explaining the adaptation process of individuals requires considering different variables. For example, socio-demographic characteristics (Rogers 2003; Quazi & Talukder 2010; Al Athmay 2015; Mutengezanwa & Mauchi 2013; Keramati, Taeb, Larijani & Mojir 2012; Kumar Sharma, & Madhumohan 2014) affect the adaptation process. The effects of psychographic characteristics on adaptation to new technologies have also been investigated (Rogers 2003; Strebinger,

Treiblmaier 2022; Basha, Aw & Chuah 2022; Sanguinetti, Karlin & Ford 2018; Gounaris & Koritos 2008; Nasir, Wu, Yago & Li 2015).

In this current study, the factors affecting consumers' attitudes towards advertisements and purchase recommendations guided by artificial intelligence algorithms are tried to be explained with the research model developed. In this context, the factors that are thought to affect attitudes are perceived usefulness, perceived ease of use, trust, perceived risk and novelty value. By explaining the effect of these variables on attitudes, consumers' attitudes towards advertisements and purchase recommendations guided by artificial intelligence are determined.

Literature Review

Innovation according to Rogers; "*defined as an idea perceived as new by an individual or organization. The newness of the idea means that individuals initially approach the innovation with a good deal of uncertainty*" (Rogers 1995: 26). The adaptation of individuals to innovation involves certain stages and processes and this issue is discussed in many models such as TAM, TRA, DOI. The use of artificial intelligence in the advertising sector is gradually included in daily life and the benefits and harms that it can provide to the field of advertising, as in many sectors, are being discussed both in academia and in the sector.

Today, it is a fact that advertising agencies in the advertising sector have also started to benefit from artificial intelligence technologies. In a report prepared by McKinsey & Co., it is emphasized that the use of artificial intelligence in advertising agencies has significant potential. In an analysis of the use of artificial intelligence in nineteen sectors, researchers have shown that the highest potential value of artificial intelligence belongs to advertising and sales-related fields (Chui et al. 2018 cited in Leszczynski, Salamon, Zielinski 2022: 1). However, this issue is still controversial. It is not correct to say that artificial intelligence is accepted by the entire advertising sector and used in all areas. On the contrary, to ignore the existence of artificial intelligence would be to deny the future. For this reason, it is a more accurate approach to present the research on this subject in two dimensions.

At this point, Leszczynski et al. (2022), using the technology acceptance model (TAM) to understand the factors affecting the acceptance of artificial intelligence, analyzed attitudes towards the use of artificial intelligence, approaches to replacing human labor with artificial intelligence, and the effects of artificial intelligence on the performance of advertising agencies through in-depth interviews conducted among advertising agency executives. According to the findings of the research, the participants exhibited both pessimistic and optimistic attitudes

when estimating the role of artificial intelligence in their professions. Especially in terms of creativity, it was seen that this work was evaluated as a human activity. As a general finding, the intention of advertising agencies to implement solutions offered by artificial intelligence is weak. Similarly, Zerfass, Hagelstein & Tench (2020) identified the major challenges and risks in the adoption of AI technology as lack of organizational and individual capabilities, uncertain responsibility, and apathy in AI adoption.

On the other hand, Zerfass et al. (2020) stated that the impact of artificial intelligence in the advertising sector will be significant. In a survey conducted among communication professionals in Europe, it was found that the participants did not use artificial intelligence in their daily lives, and based on these findings, it was stated that the ease of use and perceived usefulness of artificial intelligence have not yet been adopted in the light of the technology acceptance model. The perspective of the advertising sector on artificial intelligence remains current as a separate research topic. In this research, the attitudes of consumers exposed to advertising towards advertising content directed by artificial intelligence are investigated. In this context, it is examined how perceived usefulness, perceived ease of use, trust, perceived risk and novelty value affect consumer attitudes.

Impact of Socio-demographic Characteristics

There are many studies investigating the relationship between socio-demographic characteristics of individuals and their acceptance of technological innovations. In the last quarter century, there have been many developments in terms of technology and these developments have digitized many manual issues. For example, digital citizenship has been included in people's lives as a result of technological developments. Al Athmay (2015) considered two dimensions, e-openness and e-participation, as demographic factors determining citizens' perceptions of e-governance and found significant differences in gender, age, education and employment type. Keremati et al. (2012) examined customers' adoption of mobile payment (M-payment) services from a demographic and cultural perspective and concluded that these two factors have a significant impact on customers (Keremati et al. 2012: 1494). Quazi & Talukder (2010) investigated demographic characteristics and individuals' perception and adaptation process towards technological innovations in business life. According to the findings, age is positively related, while education is the strongest determinant of technological innovation perception and utilization. Mutengezanwa & Mauchi (2013) tried

to determine the socio-demographic factors affecting the adoption of internet banking. The findings of the study supported the hypotheses that age, occupation, income, gender and education level have a positive relationship with internet banking adoption. Venkatesh et al. (2003) also included demographic characteristics such as gender and age in the UTAUT model. In the current study, the differences between demographic factors were not examined since demographic characteristics are not suitable for Anova and T-testing due to the frequency differences between the data to be compared.

Perceived Usefulness of AI

Perceived usefulness, a concept of the Technology Acceptance Model (TAM), refers to a person's belief that work performance can be improved by using a particular technology. Perceived usefulness is significantly related to usage, i.e. the more useful a technology is perceived to be, the more likely it is to be adopted and used by users. Perceived usefulness is one of the main determinants of an individual's intention to use a technology (Davis 1989). Park & Chen (2007), using the TAM model to illustrate behavioral intentions associated with smartphone acceptance among medical staff, found that attitude towards using a smartphone is the factor that most strongly predicts the user's intention to use it. In addition, perceived utility (PU) was the second strongest predictor.

Daugherty & Wilson (2017) stated in their research that in the acceptance of artificial intelligence, which is not fully known, behaves like a "black box" and works with its algorithms, this complete unknowability is a critical factor in the non-acceptance of the technology. That is, while AI performance can be tested, it is impossible to explain its decision-making mechanism in a given situation. Leszczynski et al. (2022) analyzed the following factors to understand user acceptance of technology: The perceived ease of use of AI and the perceived usefulness of AI as an innovative solution. The structured scenario for the interview in the study relates to the following five areas: 1) the usefulness of the use of AI in an advertising agency; 2) the ease of working with and using the new technology; 3) employees' attitudes towards AI; 4) their reactions; and 5) external factors affecting the implementation of AI. Saadé & Bahli (2005) proposed a model to explain the acceptance of online learning systems. The results of the study supported that cognitive assimilation functions as a variable affecting TAM variables.

H1: Perceiving AI-directed advertisements as useful positively affects attitudes towards purchasing AI-directed products.

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Perceived Ease-of-Use AI

Perceived ease of use is a concept from the Technology Acceptance Model (TAM) that refers to the degree to which a person believes that using a technology will be effortless. This variable includes factors in terms of physical and mental effort requirement, clarity of use cases, ease of learning to operate various uses, likelihood of making mistakes in terms of functional efficiency of the use case, controllability, unexpected behavior and ease of recall, and user-friendliness of guidance (Grover, Kar, Janssen & Ilavarasan 2019: 12). The easier a system is to use, the more likely it is to be adopted by users (Davis 1989). There are studies in the literature for different technologies in relation to perceived ease of use. A study on blockchain technology was conducted by Grover et al. (2019) and Tsai, Wang & Lu (2011) investigated the use of mobile technologies within the scope of TAM; the use of information technologies was re-evaluated within the scope of TAM. There are many studies in the literature that incorporate the TAM model into the research method. In this context, the following research hypothesis was developed in the current study.

H2: The belief that AI-directed advertisements facilitate purchasing positively affects attitudes towards purchasing AI-directed products.

Trust to AI

Trust is the foundation for the use of first-party data in smart advertising. More importantly, smart ads should be presented to the user voluntarily rather than being forced (Li 2019: 335). In addition, trust has been identified as a fundamental element for the effective functioning of marketing relationships (Ennew, Kharouf & Devlin 2014). Individuals' personal beliefs play an important role in perceived privacy risk. Individuals should accept a certain level of risk when sharing personal information; however, many consumers do not fully understand what personal information companies collect and how they use it (Hasan, Shams & Rahman 2021: 2). Nagy & Hadjú (2021) addressed the issue of trust and consumers' acceptance of AI in online retail, using the Technology Acceptance Model (TAM) as a theoretical foundation. As a result of the research, trust was found to be one of the main factors affecting consumers' attitudes towards AI.

Some potential ethical concerns may arise regarding the use of artificial intelligence applications in advertising, such as privacy, manipulation, transparency, discrimination, and

consumer trust. The use of AI in advertising may raise concerns about consumers' privacy, particularly with respect to the collection and analysis of personal data, and AI-assisted advertising techniques, such as personalized content delivery, may raise concerns about the potential manipulation of consumers' emotions and behaviors. Other ethical concerns include transparency, discrimination and consumer trust. The transparency of AI algorithms used in advertising may raise concerns about the lack of transparency about how consumers' data is processed and used to target ads. On the other hand, artificial intelligence algorithms used in advertising, if not carefully designed and monitored, can unconsciously perpetuate bias and discrimination, especially in targeted advertising. In addition, over-reliance on AI in advertising can erode consumer trust if consumers feel that their privacy has been violated or perceive the ad content as manipulative or misleading (Helsloot et al. 2018; Wang et al. 2018; Larsson & Heintz 2020 as cited in Gao et al. 2023: 12). Therefore, dealing with these ethical concerns requires the responsible and transparent use of AI in advertising as well as its compliance with privacy regulations and ethical codes. Thus, it can be said that compliance with privacy regulations and ethical rules may enable consumers to increase their trust in advertisements that include artificial intelligence applications.

A current topic of debate in the literature on trust is manipulated advertising, which is becoming an increasingly common phenomenon in advertising. Techniques such as deepfakes and GANs use artificial intelligence and machine learning to produce convincing, realistic synthetic ads that are almost impossible for consumers to detect (Campbell, Plangger, Sands & Kietzmann 2022). Aguirre, Mahr, Grewal, Ruyter & Wetzels (2015) show that click-through rates drop significantly when consumers realize that their personal information was collected without their consent. To examine the personalization paradox, this study uses three experiments that confirm that how customers react to online personalized ads is a critical determinant of a firm's information collection strategy from social media sites. They find that when firms overtly collect information, participants exhibit greater intention to click on personalized ads compared to their reactions when firms covertly collect information (Aguirre et al. 2015). The research hypothesis developed in this context is as follows:

H3: Trust in AI-directed advertisements positively affects attitudes towards purchasing AI-directed products.

Perceived Risk of AI

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Hasan, Shams & Rahman (2021) created a conceptual model to determine the impact of consumer trust, interaction, perceived risk, and novelty value on brand loyalty for AI-enabled devices. In the study, data was collected from 675 Apple iPhone users using the MTurk platform. The findings showed that perceived risk had a significantly negative impact on brand loyalty; however, other factors were found to have a significantly positive impact on brand loyalty. Araujo et al. (2020) investigated people's risk perceptions towards decision-making processes automated by artificial intelligence. In this study, they distinguished between different application domains such as media, health and medicine. For each application domain, two different scenarios were developed: high impact (high impact scenario) and low impact (low impact scenario). The study focused on the comparison of decisions made by human experts and decisions automated by artificial intelligence. The findings show that there is no significant difference in risk perception between the automated decisions made by AI and the decisions made by human experts in all three application domains. In high-impact scenarios, the AI's automated decisions were generally perceived as less risky. However, no significant difference was detected in low-impact scenarios. Furthermore, a positive relationship was found between the age of the participants and the perceived level of risk. This can be interpreted as participants perceived the decisions made by AI as more risky with increasing age (cited in Klein, Depping, Wohlfahrt et al. 2023: 1-2).

Scheuer (2020) "*Akzeptanz von Künstlicher Intelligenz Grundlagen intelligenter KI-Assistenten und deren vertrauensvolle Nutzung*" in his book, deals with the technological and psychological aspects of AI, examining users' interaction with and acceptance of AI. He also emphasizes the use of psychological models and the differences between emotional and rational use when AI is perceived as a personality or a complete person. In addition to TAM3 model, the study also considers other determinants such as system characteristics, intelligence level of the system, physical properties of the system, and societal implications. These determinants are expected to have varying degrees of influence on the acceptance of AI, depending on the specific context and individual differences. The study also examines the perception of the system as a personality or technology, which is expected to moderate the relationship between the determinants and the acceptance of AI.

In their study, Al-Gasawneh et al. (2022) examined the regulatory role of influencer recommendations and perceived financial benefits in the relationship between financial artificial intelligence services and perceived risk. The findings indicate that perceived risk has

a negative impact on financial artificial intelligence services and, simultaneously, influencer recommendations and perceived financial benefits have a moderating effect on the relationship between perceived risk. These results can guide companies in reducing perceived risk to encourage individuals to use business intelligence applications. Based on the literature review, the proposed research hypothesis is as follows:

H4: The belief that sharing personal information with artificial intelligence is dangerous negatively influences attitudes towards purchasing products guided by artificial intelligence.

Novality Value

Novelty value refers to the special value that users derive from the introduction or adoption of a new product, service or technology. The concept of novelty is defined by focusing on consumers' desire to learn about new products and technologies, and it is also explained as the desire to seek the new and different by associating it with the innate search for novelty (Hirschman 1980: 284-285 as cited in Sebastian, George & Jackson 2023: 3). The concept of novelty in advertisements is defined as the combination of unexpected and advertisement-related stimuli (Besemer & O'Quin 1986, 1987, 1999 as cited in Mercanti-Guérin 2008: 99). Therefore, it can be stated that perceived novelty value is a concept related to how a product, service or technology is perceived and evaluated by users. On the other hand, from a consumer perspective, it is known that the perception of novelty offers a strong and positive value to the consumer (Snelders & Hekkert 1999 as cited in Mercanti-Guérin 2008: 101). It can be said that this value can be based on a number of emotional reactions such as benefit, satisfaction or surprise that the user feels when they start using the product or service. Perceived novelty may arise from various factors such as the uniqueness of the physical attributes of the product or service, the uniqueness of its physical location and the way it is presented (Constantin & Grigorovici 2004 as cited in Hopp & Gangadharbatla 2004). Hopp & Gangadharbatla 2016: 115). The novelty value of technological products or services or advertising campaigns integrated with technology is a very important element. Hedman & Gimpel (2010: 168) found in their research that the novelty value of technological devices emerges as an important factor in the adoption process, arouses curiosity in users, and that users are eager to learn the uses of devices and experience the latest technologies.

Sheinin, Varki and Ashley (2011) found that advertising novelty and message usage affect attitude towards the brand and have a mediating role on attitude towards advertising. In addition, it was revealed that perceived novelty value helps short-term ad recall. Sebastian,

George & Jackson (2023) found that communication strategies play an important role in gaining the trust of users and increasing customer satisfaction in the promotional activities of artificial intelligence-based products, while innovativeness and perceived novelty value contribute to the adoption and preference of the product by a wider audience. The research hypothesis developed in this context is as follows:

H5: Considering advertisements directed by artificial intelligence as an innovation positively influences attitudes towards purchasing products guided by artificial intelligence.

Figure: 1. Proposed Theoretical Model
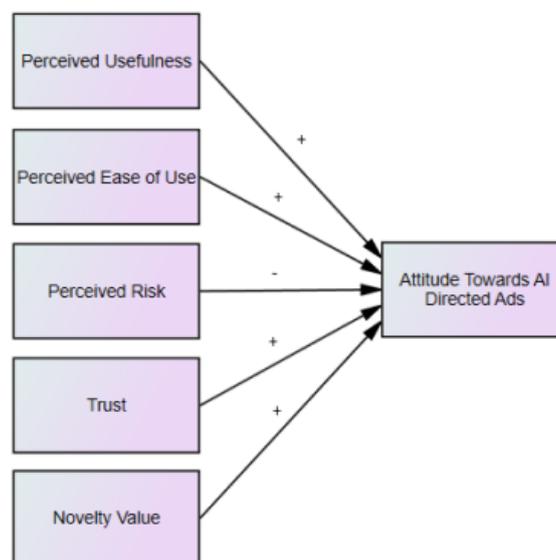
Research Methlology

Data Collection, Sample and Survey Instrument

In the research, the survey method was utilized during the data collection process. A total of 412 individuals participated in the survey. As no missing data was encountered in the data collection process, all surveys were included in the analysis. The surveys were conducted online via Google Forms between September 2023 and December 2023. As a convenience sampling method was employed in the research, research surveys were applied to anyone accessible. Since participation in the surveys was based on voluntary participation, participants were first asked whether they voluntarily participated in the survey, and after answering affirmatively,

they proceeded to other questions. Ethical approvals were obtained for the research as the survey method was applied[2].

In this study, structural equation modeling (SEM) was employed as a quantitative research method. Structural equation modeling is a general term used to describe various statistical models used to assess the validity of fundamental theories with experimental data. SEM adopts a confirmatory (hypothesis testing) approach for the multivariate analysis of a structural theory indicating causal relationships among multiple variables (Lei & Wu 2007: 33-34). To test the reliability of the scales used in the research, Cronbach's alpha analysis was initially applied. Confirmatory factor analysis was also employed to assess the internal consistency of the scales.

AMOS (Analysis of Moment Structures) software was used for SEM analysis, providing a robust environment for testing the hypothesized relationships among variables. To test the reliability of the scales used in the research, Cronbach's alpha analysis was initially applied. Confirmatory factor analysis was also employed to assess the internal consistency of the scales. The Cronbach's alpha values for each scale exceeded the acceptable threshold of 0.70, indicating good internal consistency (Nunnally 1978).

In addition to Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) were calculated to further verify the reliability and validity of the constructs. For the CR values to be considered adequate, they should exceed 0.70, and for AVE, the values should exceed 0.50 (Fornell & Larcker 1981).

The survey instrument included questions designed to measure participants' attitudes toward AI-directed advertisements, perceived usefulness, perceived ease of use, perceived risk, trust in AI Technologies and novelty value. These variables were operationalized using previously validated scales. For instance, the perceived usefulness and perceived ease of use, trust to AI and attitude towards AI scales were adapted from (Nagy & Hadjú 2021), while the perceived risk scale was adapted from Zhou (2011) and novelty value scale was adapted from Prebensen & Xie (2017).

Data analysis was performed in two stages: preliminary analysis and main analysis. Preliminary analysis involved data screening, checking for normality, and addressing any potential issues with multicollinearity. The main analysis involved testing the hypothesized

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[2] Ethics Committee permission for this study was obtained from Yozgat Bozok University Social Sciences and Humanities Ethics Committee with the decision dated September 20, 2023 and Decision Number 06/04.

structural model using SEM. Model fit was assessed using multiple fit indices, including the Chi-square statistic, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI).

RESULTS

A total of 412 people participated in the research. 146 of the participants are men and 266 are women. When the average age of the participants is examined, it is observed that the majority is in the 18-30 age range. The other majority is between the ages of 31-45. It was determined that the people aged 46-55 and 56 years and above who participated in the research constituted a majority of 7 percent in total. When the educational status of the participants was examined, it was seen that the majority of them had a bachelor's degree. While 11.9 percent of the other participants have a high school level education, 15.8 percent have a master's or PhD education level. When the participants were asked about their income levels, the majority of them said they had a medium to high income level. While there is a group of 2.7 percent who declare that they have a very good income level, there is a total of 11.9 percent who declare that they have a very bad and bad income level (See table 1).

Table: 1. Demographics

Characteristics	% of Sample	% of Population
Sex		
Male	146	64,6
Female	266	35,4
Age		
18-30	278	67,5
31-45	101	24,5
46-55	25	6,1
56 or over	8	1,9
Education		
High school graduate	49	11,9
College degree	298	72,3
Master's or PhD degree	65	15,8
Income		
Very bad	18	4,4
Bad	31	7,5
Middle	263	63,8
Good	89	21,6
Very good	11	2,7

In the research, after asking the participants questions about their demographic characteristics, they were asked about their artificial intelligence awareness, knowing the usage areas of artificial intelligence in their daily lives, and whether they were aware of the online artificial intelligence guidance in their daily lives. As can be seen from Table 2, the majority of the participants stated that they know what artificial intelligence is, that they are aware of its usage areas in daily life, and that they are aware of the online guidance of artificial intelligence. On the other hand, there is a group of 2.2 percent who do not know what artificial intelligence is, a group of 19.7 percent who do not know the using area of artificial intelligence in daily life, and a group of 22.3 percent who are not aware of the guidance of artificial intelligence in online environments (See table 2).

Table: 2. Other Descriptive Statistics

	% of Sample		% of Population	
	Yes	No	Yes	No
Knowledge of artificial intelligence	403	9	97,8	2,2
To know the usage areas of artificial intelligence in daily life	331	81	80,3	19,7
Being aware of the online directions of artificial intelligence	320	92	77,7	22,3

Research Scales

The study employed six different scales within its scope. The statements in the scales were measured using a 5-point Likert scale (1 Strongly Disagree – 5 Strongly Agree). Summary information for the research scales, including cronbach's alpha, composite reliability, average variance extracted (AVE), and standardized regression coefficient values, is provided in the table below (See Table 3).

Table: 3. Confirmatory Factor Analysis Results, Cronbach's Alpha, Composite Reliability and Average Variance Extracted

Scale Name		Scale Items	Scale	Cronbach α	β	CR		AVE
Perceived Usefulness	PU1	The use of AI in retail (shopping ads and webshops) allows me to find the best deals.	Nagy & Hadjú (2021)	Items ,805	,933	,838	,93	,77
	PU2	The use of AI in retail enhances my effectiveness in purchasing.		,869		,901		

	PU3	The use of AI in retail is useful to me.		,857		,891		
	PU4	The use of AI in retail saves time for me.		,836		,895		
Perceived Ease of Use	PEU1	AI-powered shopping apps and webshops are easy to use.	Nagy & Hadjú (2021)	,888	,940	,939	,93	,75
	PEU2	Shopping does not require a lot of my mental efforts if supported by AI (alternatives are offered by AI).		,796		,812		
	PEU3	Shopping is not so complicated if AI offers products to me.		,831		,860		
	PEU4	Learning how to use AI-powered shopping apps and webshops is easy for me.		,860		,894		
	PEU5	It is easy to become skilful at using AI-powered shopping apps and webshops.		,820		,844		
Perceived Risk	RISK1	It is risky to provide personal information to AI*	Zhou (2011).	,876	,945	,913	,94	,85
	RISK2	There will be much uncertainty associated with providing personal information to AI*		,907		,951		
	RISK3	There will be much potential loss associated with providing personal information to AI*		,870		,904		
Trust	TRUST1	I am convinced that AI in retail is used to provide customers with the best offerings.	Nagy & Hadjú (2021)	,752	,858	,848	,85	,75
	TRUST2	I trust in apps and webshops that use AI.		,752		,886		
Novelty Value	NOV1	Using AI is a unique experience	Prebensen & Xie (2017)	,818	,935	,851	,93	,74
	NOV2	Using AI is a once-in-a-lifetime experience.		,774		,809		
	NOV3	Using AI is an educational experience.		,857		,889		

	NOV4	The experience of using AI satisfies my curiosity		,831		,877		
	NOV5	Using AI provides an authentic/genuine experience.		,848		,884		
Attitude Towards AI Directed Ads	ATT1	Shopping in a webshop/shopping app that is powered by AI is a good idea	Nagy & Hadjú (2021)	,886	,926	,914	,92	,80
	ATT2	Shopping in a webshop/shopping app that is powered by AI is a wise idea		,855		,886		
	ATT3	I am positive towards webshop/shopping app that is powered by AI		,807		,897		

Notes: Probability level of 0.05; *reverse-coded

As a result of the analysis, it was determined that the Cronbach Alpha coefficient of the research scales was above the threshold value of 0.70 stated in the literature (Hair et al. 2014: 123). Therefore, all scales can be considered reliable. In addition, their convergent validity was examined in terms of construct validity. AVE and CR values were found to be above the threshold value recommended in the literature (AVE: 0.50; CR: 0.70). Therefore, it can be said that construct validity was achieved (Hair et al. 2019: 788). As a result of confirmatory factor analysis, CMIN/DF (3.945), NFI (.926), RFI (.911), IFI (.943), TLI (.932), CFI (.943), RMSEA (.085) were reported. Therefore, it was observed that the goodness of fit values of the scales obtained were at an acceptable level (Hu & Bentler 1999: 23-28; Tabachnick & Fidell 2012: 721-724).

Structural Equation Modelling and Research Hypotheses Results

According to the proposed research model, it has been observed that trust and perceived risk added to the model developed according to the proposed research model do not have a significant effect on attitudes towards advertisements directed by artificial intelligence. However, it is observed that perceived risk has a negative effect on attitudes in the research model. In the same way, it is determined that trust has a positive effect on attitudes, but the p-value is not significant. The insignificant p-value means that the available data do not support a particular hypothesis, but it does not indicate that this hypothesis is absolutely false. When a hypothesis results in a nonsignificant p value, it means that the data set does not support that hypothesis, but it does not mean that the hypothesis is completely invalid. Johnson (2012) points out in his article that a nonsignificant p-value of a hypothesis is not sufficient to falsify that

hypothesis, therefore, a nonsignificant p-value alone does not constitute sufficient evidence to falsify the hypothesis. Since the studies in the literature support the proposed hypotheses, it is anticipated that the proposed research model may yield different results with different data sets. Since the studies in the literature support the proposed hypotheses, it is anticipated that the proposed research model may yield different results with different data sets. For example, Gelman (2013) suggests that researchers should focus on estimates and confidence intervals rather than relying solely on p-values to better understand the potential variability and uncertainty associated with their findings. This approach is in line with the idea that repeated studies with different data sets may reveal important effects that initial studies did not reveal and emphasizes the importance of replication and accumulation of evidence in scientific research.

Other findings of the study show that perceived usefulness ($R^2= 0.407$, $p \leq 0.001$), perceived ease of use ($R^2= 0.507$, $p \leq 0.001$) and novelty value ($R^2= 0.186$, $p \leq 0.001$) have a significant effect on attitudes towards purchase of AI-directed advertisements (See table 4). At the same time, it is seen that perceived usefulness, perceived ease of use and novelty value have a positive effect on AI-directed ads. At this point, it can be said that when consumers think that the advertising content they encounter while spending time in online channels is useful for them, when they believe that it offers them an innovation or when they think that it is easy to use these directions, it can be said that advertisements can have a positive effect on consumers.

Table: 4. Structural Equation Modelling Analysis Estimates

			Estimate	S.E.	C.R.	P
Attitude Towards AI Directed Ads	<---	Perceived Usefulness	,407	,042	9,714	***
Attitude Towards AI Directed Ads	<---	Trust	,050	,032	1,567	,117**
Attitude Towards AI Directed Ads	<---	Perceived Ease of Use	,507	,045	11,339	***
Attitude Towards AI Directed Ads	<---	Novelity Value	,186	,029	6,317	***
Attitude Towards AI Directed Ads	<---	Perceived Risk	-,038	,024	-1,615	,106**

Notes: *Probability level of 0,001 (two-tailed), ** 0,05 level (two-tailed).

Figure: 2. Research Model
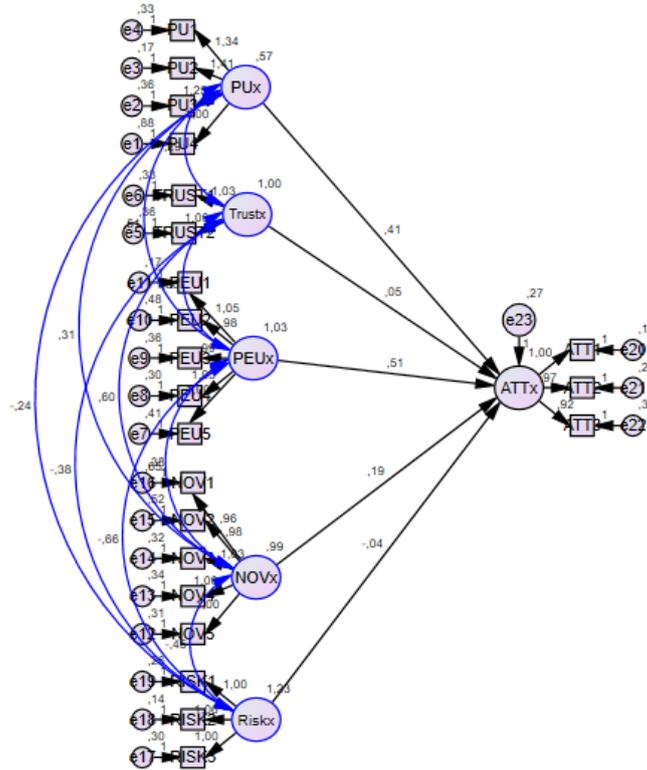
The goodness-of-fit results obtained from the structural equation model path analysis indicate that the model's fit indices are at an acceptable level. Reported as, CMIN/DF: (985,477/ 194), NFI (894), IFI (913), TLI (896), CFI (913), RMSEA (,085) (Hu & Bentler 1999; Schermelleh-Engel, Moosbrugger & Muller 2003).

Table: 5. Structural Equation Modelling Results, Composite Reliability and Average Variance Extracted

Scale Name		β	S.E	CR	AVE
Perceived Usefulness	PU1	,872	,073	,94	,70
	PU2	,924	,074		
	PU3	,847	0,71		
	PU4	,698			
Perceived Ease of Use	PEU1	,932	0,39	,94	,75
	PEU2	,815	0,47		
	PEU3	,862	0,43		
	PEU4	,895	0,43		
	PEU5	,850			

Perceived Risk	RISK1	,913	0,34	,94	,85
	RISK2	,952	0,32		
	RISK3	,904			
Trust	TRUST1	,870	0,59	,85	,75
	TRUST2	,857			
Novelty Value	NOV1	,834	0,43	,92	,72
	NOV2	,793	0,47		
	NOV3	,888	0,42		
	NOV4	,874	0,42		
	NOV5	,870			
Attitude Towards AI Directed Ads	ATT1	,926		,92	,81
	ATT2	,896	0,33		
	ATT3	,881	0,33		

DISCUSSION AND CONCLUSION

Innovative applications are mostly in the field of technology, and it is more difficult for a target audience that is not comfortable with technology to accept new applications. Applications in the field of artificial intelligence are developing day by day and new applications are offered to users. However, "with every technological leap, various questions and concerns come to the fore. How do consumers, the target audience of advertisements, react to the AI-oriented approach? Do they appreciate the personalized touch? Or is this approach perceived as too intrusive for them? Do consumers have a sense of trust in the algorithms that decide which ads they see? Or is skepticism predominant? And perhaps most importantly, do they understand the role AI plays in the ads they encounter in their daily lives? There are a limited number of empirical studies examining consumers' acceptance of artificial intelligence in advertisements using the Technology Acceptance Model (TAM)" (Sarp 2023: 162-163). In this context, this current research aims to contribute to this area in the literature.

There are many studies in different fields that investigate the factors affecting people's attitudes in the process of acceptance of technological innovations. For example, Sharma & Govindaluri investigated the factors affecting the adoption of internet banking in urban areas of India. Perceived usefulness, perceived ease of use, social influence, awareness, quality of internet connectivity and computer self-efficacy are the key determinants of attitude towards the use of internet banking in urban India (Sharma & Govindaluri 2014). Quazi & Talukder (2010) found that employees' positive attitudes towards innovation lead to adoption of technological innovations in the workplace. Najib & Fahma (2020) suggest that the intention to use digital payments is determined by perceived ease of use, perceived usefulness, digital

payment attitude and trust. As supported by other studies in the literature, it is accepted that the ease of use and usefulness of an innovation positively affect the attitudes towards the innovation in the adoption of an innovation by users (Park 2009; Suki & Suki 2011).

Argan, Dinç, Kaya & Argan (2022) examined the behaviors of social media users towards AI-based advertisements in their study titled Artificial Intelligence (AI) in Advertising: Understanding and Schematizing the Behaviors of Social Media Users. The study emphasizes the importance of psychological variables such as perception and learning that affect consumers' reactions to AI ads. The study suggests that understanding users' reactions to AI ads can provide managers with opportunities to improve the ad creation process. This is with the aim of enhancing the customer experience by creating more relevant and compelling advertising messages.

Today, online retailers need a deeper understanding of how consumers perceive, accept and trust the use of AI in their web stores. They also need to know how to use AI most effectively to increase online spending and frequency of online purchases. Because the importance of time and cost efficiency in shopping has recently become even more critical (Nagy & Hadjú 2021: 156). In this change, the role of advertising content delivered by AI has become an important factor. Artificial intelligence is increasingly being used in advertising strategies, offering consumers several advantages. First of all, AI-supported advertising content draws attention with its ability to offer personalized experiences to consumers. Personalized ads, which are created by analyzing consumers' past shopping habits, preferences and behaviors, address users' needs in a more relevant and engaging way. In addition, artificial intelligence enables better understanding and segmentation of the target audience. This gives advertisers the opportunity to create a more effective and focused marketing strategy. Thus, advertising budgets can be used more efficiently and the likelihood of reaching the right audiences increases.

However, in addition to the advantages of AI-supported advertisements, there are also some negatives. Consumers may be concerned about the use of their personal data and have privacy concerns. Moreover, fully automated advertising processes can have a cold effect due to the lack of human touch. As a result, the integration of AI into advertising strategies must be carefully managed and designed to provide a valuable experience for consumers.

This study examines the factors affecting consumer attitudes towards advertisements guided by artificial intelligence. Our study shows some similarities and differences when

compared with the existing studies in the literature. The findings of this study provide important contributions to understanding consumer attitudes towards artificial intelligence (AI)-driven advertisements. As a result of the analysis, perceived usefulness, perceived ease of use and novelty value were found to have significant and positive effects on consumer attitudes. However, trust and perceived risk factors did not have a significant effect. These findings are consistent with some studies in the existing literature, but show some differences.

Our finding that perceived usefulness and perceived ease of use positively affect attitudes towards AI-directed advertisements is consistent with Davis' (1989) Technology Acceptance Model (TAM). According to Na Seunguk et al. (2023) technological and organizational factors positively influence perceived usefulness and perceived ease of use in AI-based technologies adoption, with higher satisfaction levels leading to higher intention to use. According to Ho, Yi-Hui et al. (2022) perceived usefulness and ease of use significantly affect behavioral intention in the adoption of AI-powered online service in the tourism and hospitality sector.

The finding that perceived novelity value also positively affects consumer attitudes is in line with Rogers' (2003) Diffusion of Innovations Theory. According to Rogers, perceived novelty value plays an important role in the adoption of innovations. The fact that AI-directed ads are perceived as innovative by consumers leads to the development of positive attitudes towards these ads. This finding suggests that the use of artificial intelligence technologies in advertising can have a positive impact on consumers. AI technologies in advertising improve efficiency and meet market demand, consisting of four steps: consumer insight discovery, ad creation, media planning and buying, and ad impact evaluation (Qin & Jiang 2019).

The lack of a significant effect of trust and perceived risk factors differs from some studies in the literature. For example, McKnight & Chervany (2001) stated that trust has a significant effect on consumer behavior in online shopping. However, the lack of a significant effect of trust factor on attitudes towards artificial intelligence-guided advertisements in this study may be due to the fact that these technologies are not yet fully understood. This suggests that consumers do not yet fully trust artificial intelligence-based advertisements and therefore trust does not have a significant effect on attitudes.

Recent studies show that the use of artificial intelligence technologies in advertising is increasing and that these technologies have significant effects on consumer attitudes. For

example, Leszczynski, Salamon & Zielinski (2022) studied the acceptance of artificial intelligence technologies by advertising agencies and the impact of these technologies on performance. This study shows that the use of AI technologies in advertising positively affects consumer attitudes.

In this previous study provides important data to understand consumer attitudes towards AI-directed ads. The findings highlight the positive effects of perceived usefulness, ease of use and novelty value, while the effects of trust and perceived risk are not significant. In future research, it is important to confirm and extend these findings using different datasets and methodological approaches. Furthermore, to increase consumer trust, AI technologies need to be better understood and promoted in a transparent manner.

REFERENCES

Aguirre, E., Mahr, D., Grewal, D. et al. (2015). Unraveling the Personalization Paradox: The Effect of Information collection and Trust-Building Strategies on Online Advertisement Effectiveness, *Journal of Retailing*, 91(1), 34-49. https://doi.org/10.1016/j.jretai.2014.09.005

Al Athmay, A. A. A. R. A. (2015). Demographic Factors as Determinants of e-Governance Adoption: A Field Study in the United Arab Emirates (UAE), *Transforming Government: People, Process and Policy*, 9(2), 159-180.

Al-Gasawneh, J., Alfityani, A., Al-Okdeh, S. et al. (2022). Avoiding Uncertainty by Measuring the İmpact of Perceived Risk on the Intention to Use Financial Artificial İntelligence Services, *Uncertain Supply Chain Management*, 10(4), 1427-1436.

Argan, M., Dinc, H., Kayac, S. et al. (2022). Artificial Intelligence (AI) in Advertising: Understanding and Schematizing the Behaviors of Social Media Users, *Advances in Distributed Computing and Artificial Intelligence Journal,* 11(3), 331-348. https://doi.org/10.14201/adcaij.28331

Basha, N. K., Aw, E. C. X. & Chuah, S. H. W. (2022). Are We So Over Smartwatches? Or Can Technology, Fashion, and Psychographic Attributes Sustain Smartwatch Usage?, *Technology in Society*, 69, 101952.

Campbell, C., Plangger, K., Sands, S. et al. (2022). Preparing For An Era of Deepfakes and AI-Generated Ads: A Framework for Understanding Responses to Manipulated Advertising, *Journal of Advertising*, 51(1), 22-38, DOI: 10.1080/00913367.2021.1909515

Cheng, J. M., Kao, L. L. & Lin, J. Y. C. (2004). An Investigation of the Diffusion of Online Games in Taiwan: An Application of Rogers' Diffusion of Innovation Theory, *Journal of American Academy of Business*, 5(1/2), 439-445.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly,* 13(3), 319.

Davis, F. D. (1993). User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts, *International Journal of Man-Machine Studies*, 38 (3), 475-487.

Demir, K. (2006). Rogers'ın Yeniliğin Yayılması Teorisi ve İnternetten Ders Kaydı, *Kuram ve Uygulamada Eğitim Yönetimi* Yaz, 47, 367-392.

Fornell, C., Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error, *Journal of Marketing Research*, 18, 39-50. https://doi.org/10.2307/3151312

Gao, B., Wang, Y., Xie, H. et al. (2023). Artificial Intelligence in Advertising: Advancements, Challenges, and Ethical Considerations in Targeting, Personalization, Content Creation, and Ad Optimization, *SAGE Open*, 13(4). https://doi.org/10.1177/21582440231210759

Gelman, A. (2013). P-values and Statistical Practice. *Epidemiology,* 24(1), 69-72. https://doi.org/10.1097/EDE.0b013e31827886f7

Ginzberg, M. J. (1981). Early Diagnosis of Mis Implementation Failure: Promising Results and Unanswered Questions, *Management Science,* 27(4), 459-478.

Gounaris, S., Koritos, C. (2008). Investigating the Drivers of Internet Banking Adoption Decision: A comparison of Three Alternative Frameworks, *International Journal of Bank Marketing,* 26(5), 282-304.

Grover, P., Kar, A. K., Janssen, M. et al. (2019). Perceived Usefulness, Ease Of Use and User Acceptance of Blockchain Technology for Digital Transactions – Insights from User-generated Content on Twitter, *Enterprise Information Systems*, 1-30. DOI: 10.1080/17517575.2019.1599446

Hair, J. F., Black, W. C., Babin, B. J. et al. (2014). *Multivariate Data Analysis* (Pearson New International Edition), USA: Pearson.

Hair, J. F., Black, W. C., Babin, B. J. et al. (2019). *Multivariate Data Analysis*, China: Cengage.

Hasan, R., Shams, R. & Rahman, M. (2021). Consumer Trust and Perceived Risk for Voice-Controlled Artificial Intelligence: The Case of Siri, *Journal of Business Research, Elsevier,* 131(C), 591-597.

Hedman, J., Gimpel, G. (2010). The Adoption of Hyped Technologies: A Qualitative Study, *Information Technology and Management*, 11, 161-175.

Ho, Y., Alam, S., Masukujjaman, M. et al. (2022). Intention to Adopt AI-Powered Online Service Among Tourism and Hospitality Companies, *Int. J. Technol. Hum. Interact.,* 18, 1-19. https://doi.org/10.4018/ijthi.299357.

Hopp, T., Gangadharbatla, H. (2016). Novelty Effects in Augmented Reality Advertising Environments: The Influence of Exposure Time and Self-Efficacy, *Journal of Current Issues & Research in Advertising*, 37(2), 113-130.

Hu, L. T., Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives, *Structural Equation Modeling*, 6, 1-55. http://dx.doi.org/10.1080/10705519909540118

Hubert, M., Blut, M., Brock, C. et al. (2017). Acceptance of Smartphone-Based Mobile Shopping: Mobile Benefits, Customer Characteristics, Perceived Risks, and the Impact of Application Context, *Psychology and Marketing*, 34(2), 175-194. https://doi.org/10.1002/mar.20982

Johnson, D. H. (1999). The Insignificance of Statistical Significance Testing, *The Journal of Wildlife Management*, 63(3), 763-772. http://www.jstor.org/stable/3802789

Keramati, A., Taeb, R., Larijani, A. M. et al. (2012). A Combinative Model of Behavioural and Technical Factors Affecting "Mobile"-Payment Services Adoption: An Empirical Study, *The Service Industries Journal,* 32(9), 1489-1504. DOI: 10.1080/02642069.2011.552716

Klein, U., Depping, J., Wohlfahrt, L. et al. (2023). Application of Artificial Intelligence: Risk Perception and Trust in The Work Context with Different Impact Levels and Task Types, *AI & Soc* (2023). https://doi.org/10.1007/s00146-023-01699-w

Kumar Sharma, S., Madhumohan Govindaluri, S. (2014). Internet Banking Adoption in India, *Journal of Indian Business Research*, 6(2), 155-169. DOI: 10.1108/jibr-02-2013-0013

Leerapong, A. (2013). Applying Diffusion of Innovation in Online Purchase Intention through Social Network: A Focus Group Study of Facebook in Thailand, *Information Management and Business Review*, 5(3), 144-154.

Legris, P., Ingham, J. & Collerette, P. (2003). Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model, *Information & Management*, 40(3), 191-204.

Lei, P.-W., Wu, Q. (2007). Introduction to Structural Equation Modeling: Issues and Practical Considerations, *Educational Measurement: Issues and Practice*, 26(3), 33-43. DOI: 10.1111/j.1745-3992.2007.00099.x

Leszczynski, G., Salamon, K. & Zeilinski, M. (2022). Acceptance of Artificial Intelligence in Advertising Agencies. 37th International Business-Information-Management Association Conference.

Li, H. (2019). Special Section Introduction: Artificial Intelligence and Advertising, *Journal of Advertising*, 48(4), 333-337.

Marikyan, D., Papagiannidis, S. & Stewart, G. (2023). Technology Acceptance Research: Meta-Analysis, *Journal of Information Science,* 0(0). https://doi.org/10.1177/01655515231191177

McKnight, D. H., Chervany, N. L. (2001). What Trust Means in E-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology, *International Journal of Electronic Commerce*, 6(2), 35-59. https://doi.org/10.1080/10864415.2001.11044235

Mercanti-Guérin, M. (2008). Consumers' Perception of the Creativity of Advertisements: Development of a Valid Measurement Scale, *Recherche et Applications en Marketing (English Edition)*, 23(4), 97-118.

Miller, J., Khera, O. (2010). Digital Library Adoption and the Technology Acceptance Model: A Cross-Country Analysis, *The Electronic Journal of Information Systems*, 40(6), 1-19.

Mutengezanwa, M., Mauchi, F. N. (2013). Socio-Demographic Factors Influencing Adoption of Internet Banking in Zimbabwe, *Journal of Sustainable Development in Africa,* 15(8), 145-154.

Na, S., Heo, S., Choi, W. et al. (2023). Firm Size and Artificial Intelligence (AI)-Based Technology Adoption: The Role of Corporate Size in South Korean Construction Companies, *Buildings*, 13(4), 1066. https://doi.org/10.3390/buildings13041066

Najib, M., Fahma, F. (2020). Investigating the Adoption of Digital Payment System Through an Extended Technology Acceptance Model: An Insight from the Indonesian Small and Medium Enterprises, *International Journal on Advanced Science, Engineering and Information Technology*, 10(4), 1702-1708.

Nasir, M. A., Wu, J., Yago, M. et al. (2015). Influence of Psychographics and Risk Perception on Internet Banking Adoption: Current State Of Affairs in Britain, *International Journal of Economics and Financial Issues*, 5(2), 461-468.

Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.), McGraw-Hill.

Papagiannidis (Ed). *TheoryHub Book*. Available at http://open.ncl.ac.uk / ISBN: 9781739604400.

Park, S. Y. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use E-Learning, *Journal of Educational Technology & Society*, 12(3), 150-162.

Park, S. Y., Chen Jengchung, V. (2007). Acceptance and Adoption of the Innovative Use of Smartphone, *Industrial Management & Data Systems,* 107(9), 1349-1365.

Qin, X., Jiang, Z. (2019). The Impact of AI on the Advertising Process: The Chinese Experience, *Journal of Advertising*, 48, 338-346. https://doi.org/10.1080/00913367.2019.1652122.

Quazi, Al., Talukder, M. (2011) Demographic Determinants of Adoption of Technological Innovation, *Journal of Computer Information Systems*, 52(1), 34-42, DOI: 10.1080/08874417.2011.11645520.

Rafique, H., Almagrabi, A. O., Shamim, A. et al. (2020). Investigating the Acceptance of Mobile Library Applications with an Extended Technology Acceptance Model (TAM), *Computers & Education*, 145, 103732.

Rogers, E. M. (1995). *Diffusion of Innovations*, Fourth edition, New York: Free Press.

Rogers, E. M. (1995). Diffusion of Innovations: Modifications of a Model for Telecommunications. In: Stoetzer, MW., Mahler, A. (eds) Die Diffusion von Innovationen in der Telekommunikation. Schriftenreihe des Wissenschaftlichen Instituts für Kommunikationsdienste, vol 17. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-79868-9_2

Saadé, R., Bahli, B. (2005). The Impact of Cognitive Absorption on Perceived Usefulness And Perceived Ease of Use In On-Line Learning: An Extension of the Technology Acceptance Model, *Information & Management*, 42(2), 317-327.

Sanguinetti, A., Karlin, B. & Ford, R. (2018). Understanding the Path to Smart Home Adoption: Segmenting and Describing Consumers Across The Innovation-Decision Process, *Energy Research & Social Science*, 46, 274-283.

Sarp, S. (2023). Artificial Intelligence in Advertisements: A Conceptual Framework Based on the Technology Acceptance Model*, Journal of Economics, Business and Organization Research*, 5(2), 161-174.

Schermelleh-Engel, K., Moosbrugger, H. & Muller, H. (2003). Evaluating The Fit of Structural Equation Models: Tests of Significance and Descriptive Goodness-of-Fit Measures, *Methods of Psychological Research*, 8, 23-74.

Scheuer, D. (2020). Akzeptanz von Künstlicher Intelligenz. Grundlagen Intelligenter KI-Assistenten und Deren Vertrauensvolle Nutzung. Springer, Wiesbaden. https://doi.org/10.1007/978-3-658-29526-4

Sebastian, G., George, A. & Jackson Jr, G. (2023). Persuading Patients Using Rhetoric to Improve Artificial Intelligence Adoption: Experimental study, *Journal of Medical Internet Research*, 25, e41430.

Sekhon, H., Ennew, C., Kharouf, H. et al. (2014). Trustworthiness and Trust: Influences and Implications, *Journal of Marketing Management*, 30(3-4), 409-430. https://doi.org/10.1080/0267257X.2013.842609.

Sheinin, D. A., Varki, S. & Ashley, C. (2011). The Differential Effect of Ad Novelty and Message Usefulness on Brand Judgments, *Journal of Advertising*, 40(3), 5-17.

Strebinger, A., Treiblmaier, H. (2022). Profiling Early Adopters of Blockchain-Based Hotel Booking Applications: Demographic, Psychographic, and Service-Related Factors, *Inf Technol Tourism*, 24, 1-30. https://doi.org/10.1007/s40558-021-00219-0

Suki, N. M., Suki, N. M. (2011). Exploring the Relationship Between Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, Attitude and Subscribers' Intention Towards Using 3G Mobile Services, *Journal of Information Technology Management,* 22(1), 1-7.

Swanson, E. B. (1987). Information Channel Disposition and Use, *Decision Sciences*, 18(1) 131-145.

Tabachnick, B., Fidell, L. (2012). *Using Multivariate Statistics* (Global Edition), USA: Pearson.

Tsai, C. Y., Wang, C. C. & Lu, M. T. (2011). Using the Technology Acceptance Model to Analyze Ease of Use of a Mobile Communication System, *Social Behavior and Personality: An International Journal*, 39(1), 65-69.

Venkatesh, V., Morris, M. G., Davis, G. B. et al. (2003). User Acceptance of Information Technology: Toward a Unified View, *MIS Quarterly,* 27(3), 425-478.

Williams, M. D., Rana, N. P. & Dwivedi, Y. K. (2015), The Unified Theory of Acceptance and Use of Technology (UTAUT): A Literature Review, *Journal of Enterprise Information Management*, 28(3), 443-488. https://doi.org/10.1108/JEIM-09-2014-0088

Wooliscroft, A. G., Wooliscroft, B. (2016). Diffusion of Innovation: The Case of Ethical Tourism Behavior, *Journal of Business Research,* 69(8), 2711-2720, https://doi.org/10.1016/j.jbusres.2015.11.006

Zerfass, A., Hagelstein, J. & Tench, R. (2020). Artificial Intelligence in Communication Management: A Cross-National Study On Adoption and Knowledge, Impact, Challenges and Risks, *Journal of Communication Management,* 24(4), 377-389.