Research Article | Araştırma Makalesi

Perceived Ease of Use and Perceived Usefulness of Digital Advertisements in Türkiye: A Sectoral Assessment (2018-2023)

Türkiye'de Dijital Reklamların Kullanım Kolaylığı ve Kullanışlılık Algısı: Sektörel Bir Değerlendirme (2018-2023)

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Abstract

This study examines the adoption process and sectoral dynamics of digital advertisements in Turkey within the framework of the Technology Acceptance Model (TAM), focusing on perceived ease of use (PEOU) and perceived usefulness (PU). Covering the period between 2018 and 2023, the research evaluates the factors influencing the adoption of digital advertisements in sectors such as e-commerce, retail, finance, healthcare, and education. The findings indicate that the development of digital infrastructure is directly related to facilitating conditions, and users' perceived benefits of digital advertising platforms have increased over time. The widespread use of social media advertisements and the production of personalized content have resulted in higher returns on investment (ROI), particularly in the e-commerce and retail sectors. In contrast, the effectiveness of traditional media channels has gradually declined, and digital advertising investments have gained a larger share in total media expenditures. The adoption of digital advertisements varies across sectors, with factors such as ease of use, performance perception, and social influence playing a critical role. This study highlights the importance of considering sectoral dynamics when developing digital advertising strategies.

Keywords: Digital Advertising, TAM, Perceived Ease of Use, Perceived Usefulness, Sectoral Differences.

Öz

Çalışma, Türkiye'de dijital reklamların kabul süreci ve sektörel dinamiklerini Technology Acceptance Model (TAM) çerçevesinde ele alarak, kullanım kolaylığı (Perceived Ease of Use - PEOU) ve kullanışlılık algısının (Perceived Usefulness - PU) sektörel farklılıklarını incelemektedir. 2018-2023 yıllarını kapsayan araştırmada, e-ticaret, perakende, finans, sağlık ve eğitim gibi sektörlerde dijital reklamların kullanıcılar tarafından benimsenmesinde etkili olan faktörler değerlendirilmiştir. Araştırma bulguları, dijital altyapı gelişiminin kolaylaştırıcı şartlar (Facilitating Conditions) ile doğrudan ilişkili olduğunu ve kullanıcıların dijital reklam platformlarına yönelik fayda algısının zaman içinde arttığını göstermektedir. Özellikle sosyal medya reklamlarının yaygınlaşması ve kişiselleştirilmiş içerik üretimi, e-ticaret ve perakende sektörlerinde daha yüksek yatırım getirisi (Return on Investment - ROI) sağlamıştır. Buna karşılık, geleneksel medya kanallarının etkinliği giderek azalmış, dijital reklamcılık yatırımları toplam medya yatırımları içindeki payını artırmıştır. Dijit al reklamların kabulü sektörel farklılıklar göstermekte olup, kullanım kolaylığı, performans algısı ve sosyal etki gibi faktörlerin kritik bir rol oynadığı bulunmuştur. Bu çalışma, dijital reklam stratejilerinin sektörel dinamikler göz önünde bulundurularak geliştirilmesi gerektiğini ortaya koymaktadır.

Anahtar Kelimeler: Dijital Reklamcılık, TAM, Kullanım Kolaylığı, Kullanışlılık Algısı, Sektörel Farklılık.

Introduction

In recent years, digitalization has led to transformations in the marketing and advertising industries. Technological advancements have contributed to the increased use of digital platforms in advertising activities. In Turkey, this process has been reflected in the growing share of digital media investments within total advertising expenditures between 2018 and 2023. Perceived ease of use (PEOU) and perceived usefulness (PU) of digital advertisements are considered among the factors influencing users' adoption of digital platforms.

The adoption process of digital advertisements is examined within the framework of the Technology Acceptance Model (TAM). This model provides a theoretical framework explaining the role of factors such as ease of use, perceived usefulness, and social influence in the acceptance of platforms. Studies indicate that the adoption rate of digital advertisements varies across sectors in Turkey, with rapid adoption observed in e-commerce, retail, and finance industries. In contrast, the process appears to have progressed more gradually in the healthcare and education sectors.

Digital advertising plays a significant role in the automotive and tourism sectors. In the automotive sector, brand awareness is increased, and consumer interaction is strengthened through the use of social media platforms and digital marketing strategies. For instance, a study on Volkswagen's use of social media indicated that the brand effectively reached consumers by actively utilizing digital platforms (Eyel, Gülsoy & Gün, 2020). Similarly, in the tourism sector, digital transformation and smart tourism applications are utilized to promote destinations and enhance customer experiences. Research on the impact of technology on the tourism sector emphasizes the rapid developments and the influence of digital transformation within the industry (Yıldız, 2023).

A sectoral assessment of digital advertising is a significant research area for measuring the effectiveness of advertising strategies and determining investment directions. In this context, the primary objective of this study is to examine sectoral differences in perceived ease of access and practical usefulness of digital advertisements in Turkey between 2018 and 2023 and to evaluate the impact of these factors on the acceptance of digital platforms. The research aims to analyze how digital transformation has evolved across different sectors and its potential effects on return on investment (ROI).

This study seeks to examine the adoption process of digital advertisements within the TAM framework by analyzing sector-specific variations in perceived ease of use and perceived usefulness. Additionally, infrastructure investments in digital platforms and social influence factors are among the focal points of the study.

Literature Review

Digitalization has significantly transformed advertising practices in recent years. Traditional media channels, including television, radio, and print publications, have experienced a shift in their effectiveness due to the increasing prominence of digital media platforms. The widespread availability of the internet, the rise in smart device usage, and improvements in technical infrastructure have contributed to making advertising strategies more data-driven, personalized, and interactive. Digital platforms offer measurable performance metrics, enhancing the effectiveness of advertising efforts in terms of return on investment (ROI). Phua et al. suggest that digital advertising,

particularly through social media, facilitates direct interaction with target audiences, which may influence brand engagement (Phua et al., 2017).

The COVID-19 pandemic accelerated transformations in digital advertising, reinforcing its role in marketing strategies. Social distancing measures and restrictions on physical interactions led to an increased reliance on online platforms, resulting in a shift of advertising investments toward digital media. While the effectiveness of traditional advertising channels declined, digital platforms, particularly social media, emerged as influential tools for reaching target audiences. Social media advertisements, with their ability to produce personalized content and targeted messaging, enabled brands to adapt to dynamic consumer behaviors during the pandemic (Taylor, 2020).

During this period, advancements in artificial intelligence and big data analytics facilitated real-time analysis of consumer trends, enhancing advertising strategies and potentially improving ROI (Deng et al., 2020). Sectors such as e-commerce and healthcare were among those that benefited most from these digital advertising transformations. E-commerce platforms attracted significant advertising investments due to their user-friendly interfaces and ease of access, while digital advertising played a crucial role in public health campaigns and crisis communication strategies in the healthcare sector (Breza et al., 2021).

The significance of digital advertising has persisted beyond the pandemic, with mobile-based advertising and social media strategies indicating a sustained transformation. The interactive nature of social media platforms has allowed brands to develop a more in-depth understanding of consumer behaviors. Research suggests that this shift is not merely a temporary acceleration but rather a lasting transformation, positioning digital platforms at the core of advertising strategies (Deng et al., 2020; Taylor, 2020).

Ren examines the impact of digitalization on social inequalities, highlighting the potential for digital technologies to both reduce and exacerbate disparities (Ren, 2024). Social media platforms play a central role in digital advertising by analyzing consumer behaviors and preferences, allowing for more precise targeting of advertisements. He et al. explore the effects of social media dependency on consumer behavior, suggesting that individuals from lower socioeconomic backgrounds may be more influenced by digital advertising (He et al., 2021). This highlights the need for tailored advertising strategies based on audience segmentation.

Xu et al. emphasize the role of leadership in small and medium-sized enterprises (SMEs) during the digital transformation process, examining the influence of socioeconomic and political factors (Xu et al., 2023). The success of digital advertising increasingly depends on companies' ability to integrate technology effectively, including smaller businesses leveraging digital platforms. Bae et al. investigate the bio-health industry, illustrating how corporate social responsibility (CSR) initiatives can be strategically utilized within digital advertising to enhance brand perception (Bae et al., 2022).

Yang & Ho examine the role of media in addressing information disparities related to environmental issues and climate change, demonstrating the potential for digital platforms to enhance public awareness (Yang & Ho, 2017). These findings suggest that advertisers can strengthen consumer engagement by incorporating social responsibility messages.

Digitalization influences a broad spectrum of societal and individual behaviors. While it facilitates faster and more convenient access to information, the widespread use of digital technologies also raises concerns regarding privacy and security. Ren discusses the complex relationship between digital technologies and social equality, noting that digitalization can sometimes reinforce existing disparities (Ren, 2024).

At an individual level, digitalization enhances social connectivity while simultaneously introducing challenges such as digital dependency and information overload. He et al. investigate the impact of social media dependency on cognitive and behavioral patterns, highlighting its potential influence on decision-making processes (He et al., 2021). Ethical concerns in digital advertising, including data collection, usage, and potential manipulation, are integral to the digitalization process. Advertisers are expected to uphold ethical standards in data usage while respecting consumer privacy rights. Xu et al. emphasize the role of ethical leadership and transparency in fostering consumer trust, suggesting that these factors contribute to the credibility of digital platforms (Xu et al., 2023).

The digitalization of advertising extends beyond technological advancements and platform shifts; it is also shaped by consumer behaviors, societal dynamics, and economic structures. The widespread adoption of digital advertising highlights the significance of technological perceptions and social influences in shaping user acceptance. The Technology Acceptance Model (TAM), originally developed by (Davis, 1989), provides a theoretical framework for understanding technology adoption based on perceived ease of use (PEOU) and perceived usefulness (PU). The adoption of digital advertising platforms is influenced by users' perceptions of their usability and effectiveness. Extended versions of the TAM framework incorporate additional variables such as social influence and facilitating conditions, offering a more comprehensive analysis of technological adoption within cultural and societal contexts (Venkatesh et al., 2003; Venkatesh & Davis, 2000).

Lin& Kim analyze user responses to sponsored Facebook advertisements within the TAM framework, revealing that privacy concerns and perceived intrusiveness significantly affect consumer attitudes and purchase intentions (Lin & Kim, 2016). Jung investigates the relationship between perceived relevance and privacy concerns in social media advertising, emphasizing the critical role of these factors in consumer engagement (Jung, 2017). These findings underscore the importance of privacy policies and user-friendly designs in digital advertising strategies.

Nasir et al. segment consumers based on their perceptions of social media advertising, demonstrating how different consumer groups exhibit varying purchase intentions (Nasir et al., 2021). Wang et al. applies the TAM2 model to analyze behaviorally targeted advertising, employing deep learning-based approaches to identify key factors influencing purchase decisions (Wang et al., 2022).

Pavlou integrates the TAM framework with trust and perceived risk factors to analyze technology adoption in e-commerce (Pavlou, 2003). The study highlights the role of consumer trust and risk perception in determining digital advertising acceptance. These findings suggest that incorporating trust-enhancing mechanisms into advertising strategies is essential, particularly in the e-commerce and retail sectors.

In conclusion, sectoral differences in the perceived ease of use and usefulness of digital advertising are closely linked to the broader dynamics of digital transformation.

Technological advancements, societal adaptation, consumer behaviors, and social influences collectively shape the success of digital advertising strategies.

Research

This study employs a quantitative research approach to evaluate the adoption process and sectoral dynamics of digital advertising in Türkiye, focusing on user-friendly access and perceived practical benefits across different sectors. In this study, only secondary data were used, which has brought about certain methodological limitations. The use of secondary data carries the risk of not allowing the researcher direct control over the accuracy and reliability of the data collection process. Additionally, the potential for generalization based on secondary data analyses is limited by the currency and validity of the data. Although the reliability and validity criteria of the data used in the study have been carefully evaluated, the lack of detailed information about data collection methods and conditions may create limitations in interpreting the findings. It is considered necessary to assess the limitations arising from the use of secondary data, particularly in relation to ethical issues such as security and privacy within the context of digital advertising. The methodology consists of three main stages: data collection, analysis, and evaluation.

The primary dataset for this study is derived from the *Estimated Media and Advertising Investments in Türkiye Reports*, published as open-access resources on the official website of the Advertisers' Association of Türkiye between the years 2018 and 2023 (Advertisers' Association of Türkiye, 2019, 2020, 2021, 2022, 2023).

This research utilizes secondary data, including sectoral media investments, advertising performance indicators, and user adoption metrics, which have been compiled for statistical analysis. The data have been analyzed using descriptive statistics and trend analysis. The analytical process consists of the following components:

1. Sectoral Comparisons: The impact of digital advertising investments on perceived ease of use (PEOU) and perceived usefulness (PU) across different sectors has been examined.

2. Time Series Analysis: The rate of change in digital and traditional media investments between 2018 and 2023 has been calculated to identify trends over time.

3. ROI Performance: The return on investment (ROI) of digital advertising channels has been assessed, enabling a comparative analysis across different advertising mediums.

This methodological framework provides a systematic approach to understanding the sectoral variations in digital advertising adoption and the evolving trends in media investments over the specified period.

Findings

The findings of this study are based on the evaluation of digital advertising investments in Türkiye within the framework of the Technology Acceptance Model (TAM), specifically in terms of perceived ease of use (PEOU) and perceived usefulness (PU). The results comprehensively examine how digital transformation evolved across different sectors between 2018 and 2023 and its impact on the adoption of digital platforms.

Transformation in Media Investments

In 2018, a significant portion of media investments was allocated to traditional media channels. During this period, digital advertising accounted for approximately 30% of total media investments, while traditional media remained dominant with a 40% share.

Figure 1 presents the percentage distribution of traditional, digital, and other advertising categories within total advertising investments between 2018 and 2023. The figure includes four distinct categories: traditional advertising (orange), digital advertising (blue), other advertisements (gray), and the total investment indicator (black).

In 2018, traditional advertising accounted for 40% of total media investments, while digital advertising held a 30% share, and other advertising categories comprised the remaining 30%. Over time, the share of digital advertising increased annually, reaching 68% by 2023. In contrast, traditional advertising experienced a steady decline, decreasing to 25% in 2023. Other advertising categories also exhibited a downward trend, albeit to a lesser extent, falling to 7% by the end of the period. The total share of investments remained constant at 100% each year.
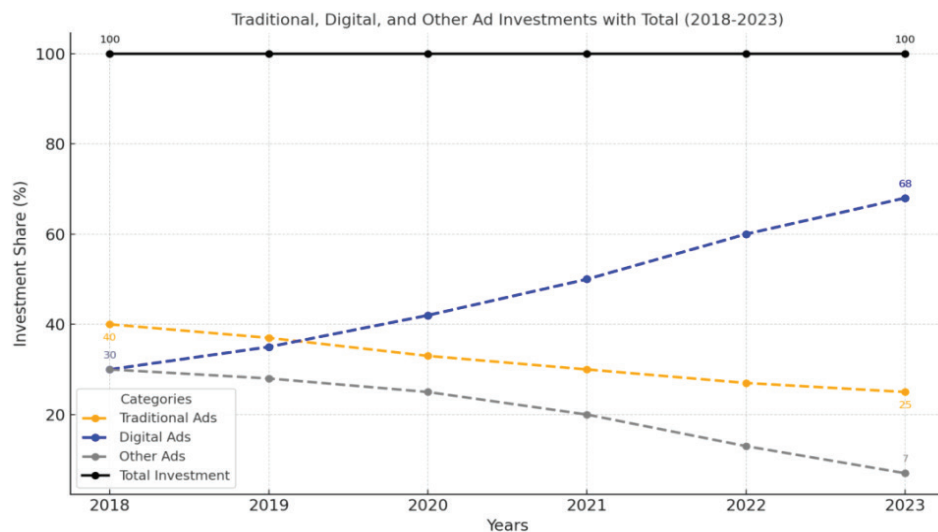

Figure 1. Traditional, digital and other advertising investments with total (2018-2023)

Figure 1 illustrates the continuous growth of digital advertising between 2018 and 2023, demonstrating its increasing dominance in advertising investments. The rise in digital advertising share can be associated with the widespread adoption of internet access, the increasing use of mobile devices, and the effective implementation of data-driven campaign strategies. Additionally, digital advertising provides measurable results, facilitates targeted audience reach, and enables personalized content delivery, contributing to advertisers' preference for this medium.

The persistent decline in the share of traditional advertising suggests that these channels have faced challenges in competing with digital platforms. While traditional media remains effective in reaching broad audiences, it appears to be limited in flexibility, cost efficiency, and real-time feedback mechanisms compared to digital advertising.

The reduction in the share of other advertising categories indicates a shift in investment priorities towards digital platforms. The observed declines in traditional and other

advertising categories further support the significant impact of digitalization on advertising investments.

In conclusion, **Figure 1** highlights the rapid expansion of digital advertising, reinforcing its leadership position in the sector, while traditional advertising channels have experienced a contraction in response to this transformation. Adapting advertising strategies to align with these evolving trends is likely to yield higher returns for investors.

Sectoral Differences

The adoption of digital advertising varies across sectors. E-commerce and retail industries have been among the most rapidly adapting sectors to digital transformation. In these industries, the ease of use and performance advantages offered by digital advertising platforms have facilitated user adoption, contributing to their widespread implementation.
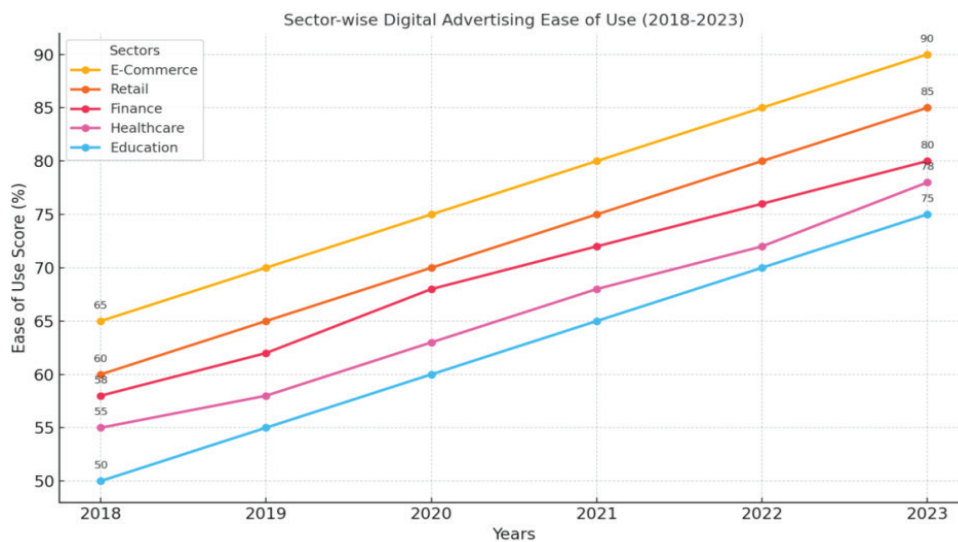

Figure 2. Sector-wise digital advertising ease of use (2018-2023)

Figure 2 illustrates the ease of use (EOU) scores of digital advertising across different sectors between 2018 and 2023. The e-commerce, retail, finance, healthcare, and education sectors are represented using distinct colors.

In 2018, the e-commerce sector had the highest ease of use score at 65, followed by the retail sector at 60, the finance sector at 58, the healthcare sector at 55, and the education sector at 50. By 2023, the e-commerce sector had further strengthened its leading position, reaching a score of 90. Similarly, the retail sector increased to 85, the finance sector to 80, the healthcare sector to 78, and the education sector to 75, indicating an overall upward trend in all sectors.

Figure 2 clearly demonstrates that the perceived ease of use of digital advertising platforms has increased over time, with variations across sectors. The higher scores in the e-commerce and retail industries may be attributed to the widespread adoption of user-friendly interfaces, the expansion of personalized advertising content, and improvements in technological infrastructure. The rapid adoption of digital advertising strategies in these sectors has contributed to continuous enhancements in user experience.

Improving digital literacy in the education and healthcare sectors is crucial for enhancing service quality and accessibility. In the education sector, continuous training programs should be organized to enable teachers to use digital technologies effectively, and the development of digital content should be encouraged. A study examining the digital literacy of classroom teachers highlighted the need to improve teachers' ability to cope with challenges while using digital technologies. In the healthcare sector, enhancing digital health literacy increases individuals' ability to search, evaluate, and apply health information accurately, thereby promoting efficiency in disease management. A literature review on digital health literacy pointed out that factors influencing digital literacy include age, health status, educational background, and digital literacy skills.

The finance sector has shown a moderate increase in ease of use perception, which may be explained by efforts to reduce technical complexity and develop more accessible digital platforms. In contrast, the healthcare and education sectors have exhibited more gradual improvements. This trend may be associated with the slower pace of digitalization in these areas and relatively lower levels of digital literacy compared to other industries.

Overall, **Figure 2** highlights that improvements in the perceived ease of use of digital advertising platforms vary across sectors based on industry-specific dynamics. Enhancing the user-friendliness and accessibility of digital platforms could further improve ease of use perceptions, particularly in the healthcare and education sectors. These findings emphasize the need for digital advertising strategies to be tailored according to sector-specific requirements.

Social Influence and User Adoption

The influence of social media platforms has played a significant role in shaping user adoption rates across different sectors. The rise of social media advertising has notably contributed to increased acceptance of digital advertisements, particularly in the e-commerce and retail industries.
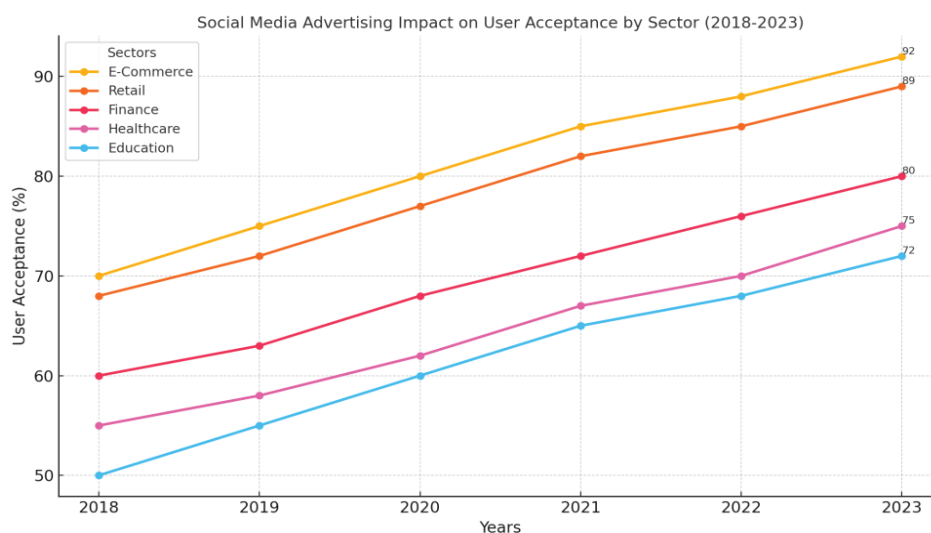

Figure 3. Social media advertising impact on user acceptance by sector (2018-2023)

Figure 3 illustrates the sectoral impact of social media advertisements on user adoption rates between 2018 and 2023. The e-commerce, retail, finance, healthcare, and education sectors are represented using distinct colors. In 2018, the e-commerce sector exhibited the highest user adoption rate at 70%, followed by the retail sector at 68%, the finance

sector at 65%, the healthcare sector at 60%, and the education sector at 50%. By 2023, the e-commerce sector maintained its leading position with a 92% adoption rate, while the retail sector reached 89%, the finance sector 80%, the healthcare sector 75%, and the education sector 72%. These results indicate an upward trend in all sectors.

Figure 3 highlights the consistent increase in user adoption rates for social media advertisements and the sectoral variations in this trend. The high acceptance rates in the e-commerce and retail sectors can be attributed to the effective implementation of personalized advertising content, targeted campaigns, and interactive advertising strategies. These industries leverage social media platforms as a direct engagement tool to establish consumer trust and enhance brand interaction.

The gradual increase observed in the finance sector reflects growing user confidence in financial services and the informative and trust-building nature of financial advertisements. In contrast, the more moderate growth in the healthcare and education sectors can be associated with the fact that advertising campaigns in these fields are primarily aimed at information dissemination and awareness-raising rather than direct consumer engagement. Additionally, the lower intensity of social media usage in these sectors compared to others may have contributed to the slower adoption rate.

Overall, the positive impact of social media advertising on user adoption rates is evident across all sectors; however, the rate of increase varies based on sectoral dynamics. In industries such as healthcare and education, enhancing the accuracy, transparency, and informative nature of advertisements may contribute to higher user adoption rates. These strategies could further improve the effectiveness of social media advertising and help reduce sectoral disparities in user acceptance.

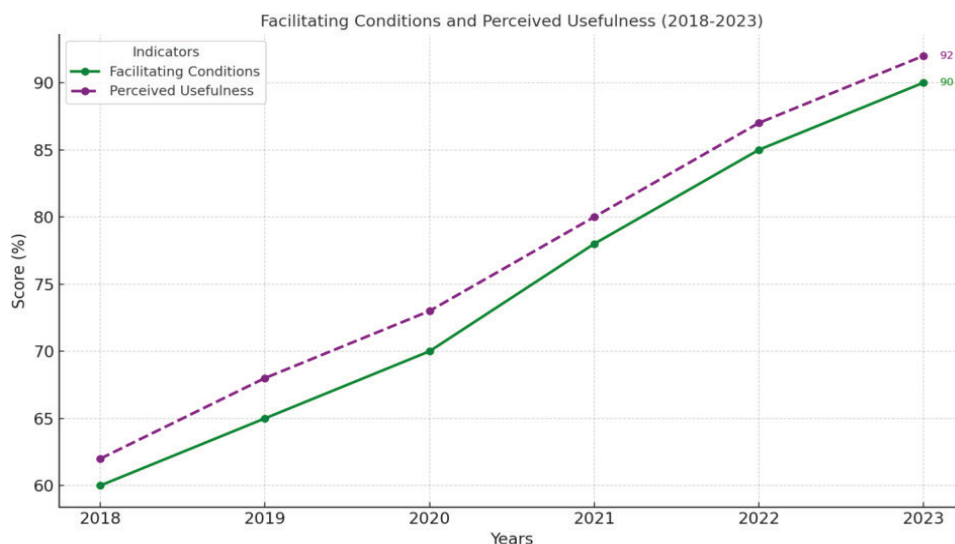## The Impact of Infrastructure Development on Perceived Usefulness

Figure 4. Facilitating conditions and perceived usefulness (2018-2023)

Figure 4 illustrates the annual changes in facilitating conditions and perceived usefulness indicators between 2018 and 2023. Facilitating conditions are represented by a solid green line, while perceived usefulness is depicted using a dashed purple line.

In 2018, the facilitating conditions score was recorded at 60%, while the perceived usefulness score stood at 65%. A steady increase was observed in both indicators throughout the period, with facilitating conditions reaching 90% and perceived usefulness rising to 92% by 2023. The trajectory of both indicators closely follows a parallel upward trend over time.

Figure 4 demonstrates that facilitating conditions and perceived usefulness exhibit a mutually reinforcing pattern of consistent growth. The increase in facilitating conditions can be associated with the development of digital infrastructure, improvements in technical support, and enhanced accessibility of digital tools for users. These factors contribute to making digital advertising platforms more accessible and effective for consumers.

The consistent rise in perceived usefulness is linked to the growing value that digital platforms offer to users. Personalized advertisements, time-saving solutions, and targeted campaigns have enhanced users' perceived benefits from these platforms. As users' perceptions of digital advertisements' functionality and advantages have strengthened, their acceptance and trust in these platforms have also increased.

This parallel growth trend highlights the necessity for digital advertising strategies to focus not only on user-friendly infrastructure but also on delivering content that aligns with consumer needs. By 2023, the high levels observed in both indicators suggest that digital advertisements have successfully met user expectations. Maintaining this success requires continuous improvements in technological infrastructure and the ongoing optimization of user experiences.

The development of digital platforms' infrastructure has contributed to making digital advertisements more useful and accessible to users. These findings particularly underscore the increasing effectiveness of digital advertising in the e-commerce and retail sectors. The expansion of infrastructure investments has made the impact of digital advertising on users more evident, reinforcing its growing significance in the advertising landscape.
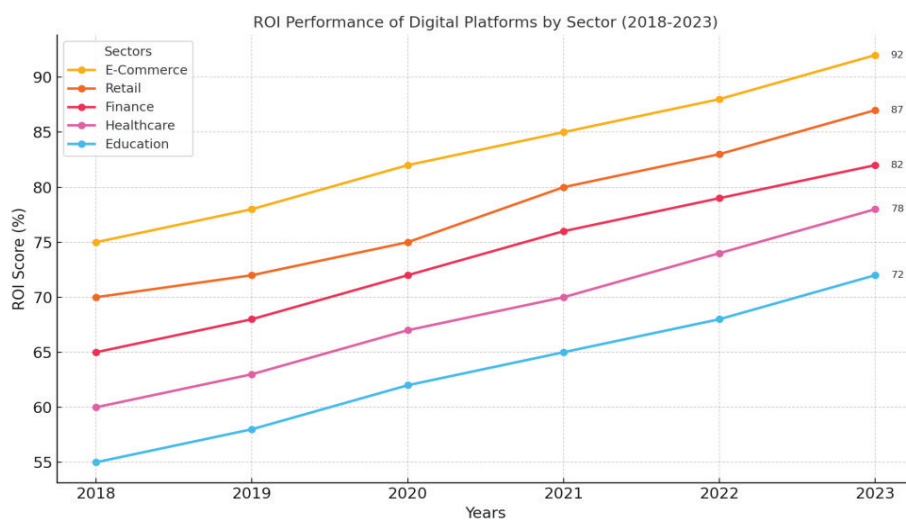

Figure 5. *ROI performance of digital platforms by sector (2018-2023)*

Figure 5 illustrates the sectoral performance of digital platforms in terms of return on investment (ROI) between 2018 and 2023. The e-commerce, retail, finance, healthcare, and education sectors are represented using distinct colors.

In 2018, the e-commerce sector demonstrated the highest ROI performance at 75%, followed by the retail sector at 70%, the finance sector at 65%, the healthcare sector at 60%, and the education sector at 55%. By 2023, the e-commerce sector maintained its leading position with a 92% ROI, while the retail sector reached 87%, the finance sector 82%, the healthcare sector 78%, and the education sector 72%. A steady increase was observed across all sectors.

Figure 5 highlights sectoral variations in the ROI performance of digital platforms and the consistent growth in each industry. The high ROI observed in the e-commerce sector can be attributed to the effective implementation of user-friendly platform designs, personalized advertising campaigns, and conversion-focused strategies. The increasing shift of consumer shopping behaviors toward digital channels has been a significant factor contributing to the improved ROI performance in e-commerce.

The rise in ROI rates in the retail and finance sectors indicates that these industries have effectively leveraged digital platforms to reach their target audiences. In the finance sector, in particular, advertising strategies that enhance consumer trust and provide informative content appear to have contributed to improved ROI outcomes.

The more gradual yet consistent increase in ROI in the healthcare and education sectors may be associated with the use of digital platforms primarily for informational and awareness-raising purposes. The less commercially driven nature of advertising in these sectors, along with their focus on public benefit rather than direct revenue generation, may explain why ROI remains comparatively lower than in other industries.

Overall, Figure 5 underscores the upward trend in the ROI performance of digital platforms while emphasizing sectoral differences in this growth. Optimizing digital advertising strategies based on sector-specific needs is crucial for enhancing ROI, particularly in healthcare and education. The development of user-friendly content, targeted campaigns informed by audience analysis, and improved accessibility could further enhance ROI performance.

The perceived usefulness (PU) indicator has followed a similar trajectory, reaching 92% in 2023, demonstrating a parallel increase with infrastructure development. The advantages of digital platforms, such as enhanced performance, rapid audience reach, and increased ROI, have contributed to users' perceptions of digital advertising as beneficial. This trend has been particularly evident in industries such as e-commerce and retail, where digitalization has played a more prominent role. These findings suggest that infrastructure improvements impact not only technical capacity but also users' expectations and perceived benefits of digital platforms.

The trends observed in Figure 5 align with the Unified Theory of Acceptance and Use of Technology (UTAUT) model proposed by Venkatesh et al. (2003), reinforcing the critical role of facilitating conditions in the adoption of digital technologies. In the case of Türkiye, increased investments in digital infrastructure have facilitated the adoption of digital advertising while strengthening users' perceptions of its usefulness. The positive

relationship between infrastructure development and perceived usefulness provides a solid foundation for the continued expansion of digital advertising in the future.
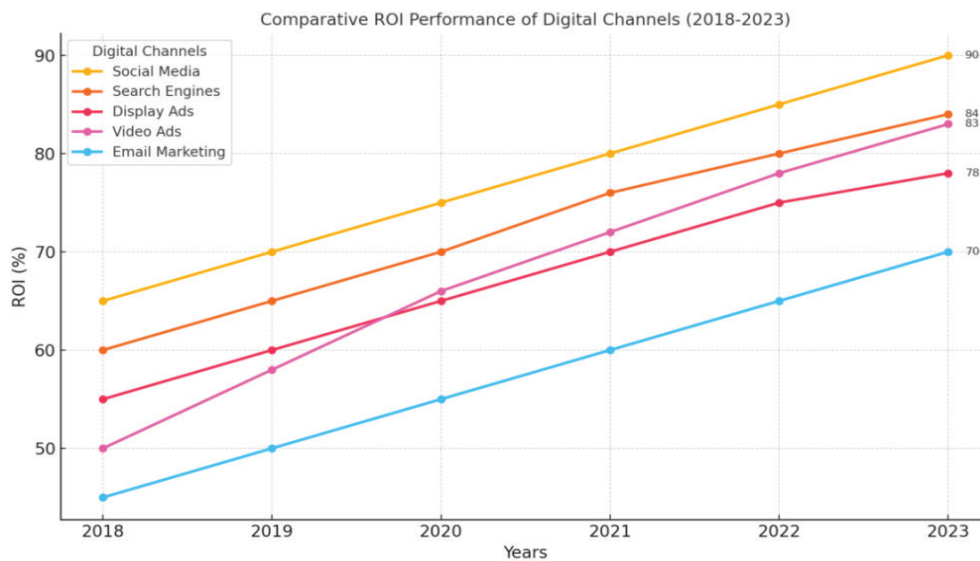

Figure 6. *Comparative ROI performance of digital channels (2018-2023)*

Figure 6 compares the return on investment (ROI) performance of various digital advertising channels between 2018 and 2023. Five distinct channels are represented: social media, search engines, display ads, video ads, and email marketing.

In 2018, social media advertising led with an ROI of 70%, followed by search engine advertising at 65%, display ads at 60%, video ads at 55%, and email marketing at 50%. By 2023, social media maintained its leading position with an ROI of 90%, while search engines rose to 84%, display ads to 83%, video ads to 78%, and email marketing to 70%. A steady increase in ROI was observed across all channels.

Figure 6 highlights the continuous improvement in the ROI performance of digital advertising channels, emphasizing social media platforms as the most effective channel. The high ROI of social media advertising can be attributed to its extensive reach, personalized content strategies, and high engagement rates. The ability of social media platforms to directly influence user behavior and facilitate brand interaction has made them a preferred choice for advertisers.

The growth in search engine advertising ROI may be explained by consumers' increasing reliance on search engine results when making purchasing decisions. Display and video advertising have also demonstrated significant improvements in ROI, driven by the compelling nature of visual content and its ability to capture audience attention. The strong emotional impact of video advertisements is one of the key factors supporting their increasing ROI performance.

The rise in ROI for email marketing is associated with its capacity for direct targeting and enhancing customer loyalty. However, its relatively lower growth compared to other channels may be attributed to its limited reach and less personalized content strategies.

Overall, Figure 6 demonstrates that each digital advertising channel has contributed to improving ROI, though the extent of this increase varies based on channel-specific characteristics. While social media and search engine advertising have emerged as highly

effective channels, the growing impact of display and video advertisements suggests that these formats should receive greater emphasis in investment strategies. To enhance the effectiveness of email marketing, adopting more personalized content strategies is recommended.

Figure 7 illustrates the changing share of digital outdoor advertising and traditional outdoor advertising within total outdoor advertising investments between 2018 and 2023. Digital outdoor advertising is represented by a solid blue line, while traditional outdoor advertising is depicted using a dashed orange line.

In 2018, digital outdoor advertising accounted for 20% of total outdoor advertising, whereas traditional outdoor advertising maintained a dominant position with 60%. By 2023, the share of digital outdoor advertising increased to 52%, while traditional outdoor advertising declined to 28%. Figure 7 clearly depicts the shift in market share between these two advertising categories over time.
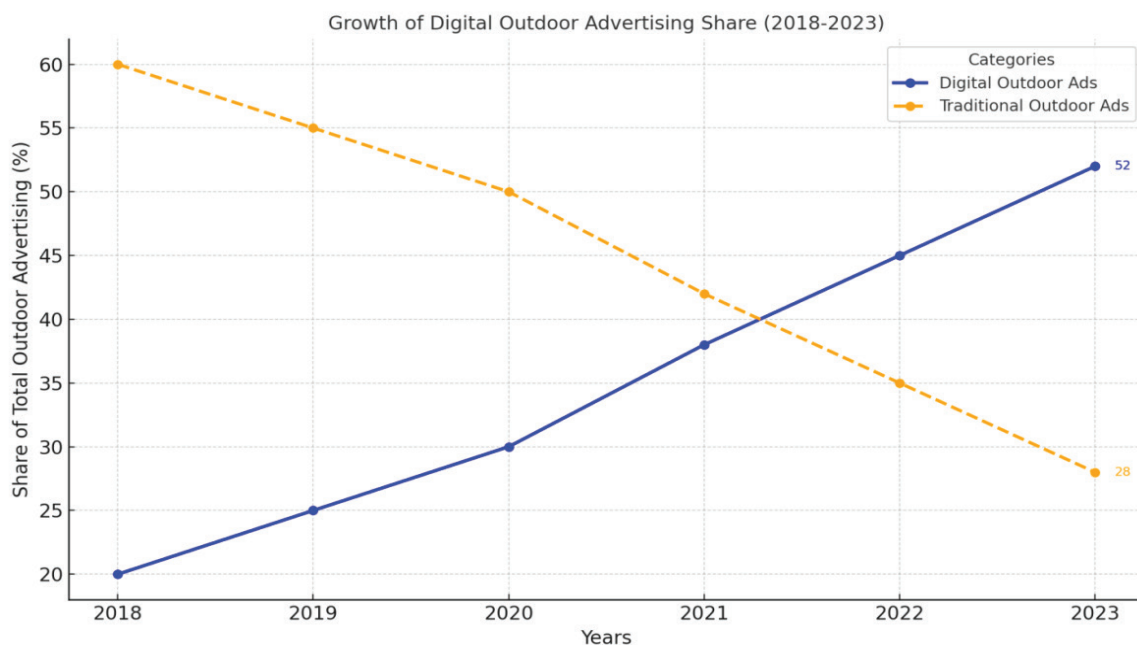

Figure 7. *Growth of digital outdoor advertising share (2018-2023)*

The data in Figure 7 indicate the significant impact of digitalization on outdoor advertising. The rapid increase in digital outdoor advertising can be attributed to its advantages, including dynamic content delivery, personalized messaging, and the ability to leverage technological innovations. Additionally, digital billboards offer cost-effective solutions and easy content updates, making them a preferred choice for advertisers.

Conversely, the decline in the share of traditional outdoor advertising may be explained by its static nature and limited flexibility in reaching target audiences. The adaptability and measurability of digital platforms have contributed to the decreasing influence of traditional outdoor advertising.

Digital advertising strategies should be shaped according to the specific needs of each sector. In the automotive sector, digital marketing consulting services help brands strengthen their online presence and reach their target audience effectively. In this regard,

the importance and content of digital marketing consulting in the automotive sector are discussed, emphasizing that these services help brands enhance their online presence and effectively reach their target audience. In the tourism sector, the relationship between digital marketing and brand value has been examined, and it has been concluded that digital marketing has a positive and strong impact on brand value and its sub-dimensions. Therefore, developing strategies that are aligned with the dynamics of each sector can enhance the effectiveness of digital advertising.

Overall, Figure 7 highlights the clear transition from traditional to digital outdoor advertising. This transformation underscores the need for outdoor advertising strategies to be redesigned in alignment with digital platforms. Integrating traditional outdoor advertising with digital elements may enhance its effectiveness and improve investment outcomes.

The findings from 2018 to 2023 comprehensively evaluate the impact of digital advertising across various channels, sectors, and performance metrics. These visual representations highlight key trends, including the growing share of digital advertising in total media investments, sectoral variations in ease of use and user acceptance, ROI performance, and the increasing dominance of digital platforms over traditional advertising.

1. The Shift in Digital and Traditional Advertising: The share of digital advertising in media investments has steadily increased, while the proportion of traditional media and other advertising categories has declined significantly.

2. Sectoral Differences in Ease of Use and Adoption: Industries such as e-commerce and retail have demonstrated higher ease of use and user acceptance rates for digital advertising, whereas sectors like healthcare and education have shown a more gradual adoption.

3. ROI Performance of Digital Channels: Digital channels, particularly social media, search engines, and video advertising, have exhibited continuous growth in ROI, making them highly attractive to advertisers.

4. Growth of Digital Outdoor Advertising: Digital outdoor advertising has surpassed traditional outdoor advertising in market share, establishing itself as the dominant category in outdoor media investments.

The data collectively illustrate the continuous expansion of digital advertising, reinforcing its increasing significance for both advertisers and consumers. The rise of digital advertising can be attributed to technological advancements, personalized content strategies, and measurable performance outcomes. The high ROI of social media and search engine advertising further emphasizes the competitive advantage of digital platforms.

Sectoral differences demonstrate that the impact of digitalization varies across industries. While e-commerce and retail have led the adoption of digital advertising, healthcare and education sectors have experienced a slower adaptation process. This finding highlights the importance of customizing digital platforms to address the specific needs of different industries.

Additionally, the decline of traditional advertising reflects the challenges faced by legacy media channels in adapting to the digital transformation. The rise of digital outdoor advertising signifies that this transition extends beyond online platforms and into physical advertising spaces.

In conclusion, the future success of digital advertising will depend on enhancing user-friendly experiences, increasing content personalization, and continuously improving technological infrastructure. Integrating traditional advertising channels with digital platforms will be a key strategy to maximize the benefits of this transformation. To remain competitive, advertisers must adopt targeted strategies tailored to industry-specific characteristics and emerging consumer trends.

Discussion

This study examines the adoption process and sectoral dynamics of digital advertising in Türkiye through the framework of the Technology Acceptance Model (TAM), focusing on perceived ease of use (PEOU) and perceived usefulness (PU). The findings reveal that the adoption of digital advertising across different industries is closely linked to users' attitudes and behaviors toward technology. The e-commerce and retail sectors have undergone a rapid transformation driven by the ease of use and perceived benefits of digital platforms. This aligns with findings in the literature, which suggest that personalized content strategies enhance user engagement and improve ROI in advertising (Byun & Ahn, 2023; Phua et al., 2017).

In contrast, industries such as finance and healthcare, which rely on trust and credibility, have shown a more gradual adoption of digital advertising. The role of perceived trust in digital advertising adoption suggests that technologies such as blockchain could potentially enhance transparency and trustworthiness in these industries . Within the TAM framework, perceived usefulness shapes users' attitudes toward advertising content, and in fields like financial services, this perception is more dependent on trust-related factors (Gefen et al., 2003).

The perception of ease of use in digital advertising for healthcare and education is influenced by infrastructure limitations and varying levels of digital literacy among users. Ren highlights that digital usage disparities affect individuals from lower socioeconomic backgrounds, leading to a preference for entertainment-oriented content rather than informational services (Ren, 2024). This finding suggests that digital advertising strategies in education should focus on accessibility and content quality to improve adoption rates.

The study's findings support the role of TAM in explaining the acceptance process of digital advertising based on ease of use and perceived usefulness. However, when compared to extended models, frameworks such as the Unified Theory of Acceptance and Use of Technology (UTAUT) provide additional insights by incorporating factors like social influence and performance expectancy (Venkatesh & Davis, 2000). The study confirms that social influence plays a critical role in advertising strategies on social media platforms, as users are more likely to engage with advertisements influenced by external factors. This finding aligns with previous research on the impact of social interaction on advertising perception (Phua et al., 2017).

Furthermore, the results suggest that personalized content strategies in digital advertising effectively capture user attention and increase engagement rates. Artificial intelligence (AI)-driven advertising strategies have the potential to analyze user behavior and create highly targeted content (Bae et al., 2022). However, ethical concerns regarding AI-driven advertising remain a topic of debate. The overuse of consumer data and concerns over

digital privacy are critical issues that must be addressed in advertising strategies (He et al., 2021). While AI and machine learning enhance advertising effectiveness, maintaining consumer trust and data security remains a key challenge.

In conclusion, the adoption process and sectoral dynamics of digital advertising exhibit industry-specific variations, which can be explained within the TAM framework through ease of use and perceived usefulness.

For future research, it is recommended that studies on digital advertising be supported by qualitative research and that mixed methods be employed to conduct more in-depth analyses. In this context, obtaining qualitative data based on user and expert opinions will provide depth and scope in interpreting the findings. The integration of qualitative findings with quantitative data and their evaluation through mixed research designs may contribute to a more holistic examination of digital advertising within a sectoral context.

The study's findings confirm that factors such as social influence, trust, and personalized content strategies contribute to the effectiveness of digital advertising. When compared with extended theoretical models such as UTAUT, additional factors influencing digital advertising acceptance—such as performance expectancy and social norms—become more apparent.

Digital advertising has emerged as one of the fastest-evolving industries of the 21st century, shaped by technological innovations and changing consumer behaviors. This study has examined global trends in digital advertising and assessed the impact of recent technological advancements on the industry.

Artificial intelligence (AI) and machine learning have significantly transformed digital advertising, particularly in targeting and personalization strategies. As highlighted by Huh, Nelson, and Russell (2023), AI-driven models such as ChatGPT are increasingly being used to analyze consumer behavior and create customized advertising content. On social media platforms, AI-powered campaigns optimize user experiences and improve engagement rates.

Virtual reality (VR) and augmented reality (AR) technologies also play a crucial role in enhancing brand interaction. Ham et al. (2023) emphasize the positive impact of virtual brand ambassadors and AR applications on consumer perceptions. These technologies enable users to experience products and services in real time, facilitating more informed purchasing decisions.

The Metaverse has also emerged as a new frontier for digital advertising. Byun & Ahn analyze the impact of virtual influencers within Metaverse environments, highlighting new marketing opportunities in this digital space (Byun & Ahn, 2023). Brands are increasingly leveraging Metaverse platforms to engage with digitally native consumers.

Despite the benefits of digital advertising, ethical challenges remain a key concern. Privacy violations, the unauthorized collection of user data, and the overuse of targeted algorithms raise ethical concerns in advertising strategies (Rodgers & Nguyen, 2022). Data security risks can also undermine consumer trust, emphasizing the need for transparent data policies and responsible advertising practices.

In conclusion, digital advertising is undergoing a multidimensional evolution driven by AI, Metaverse applications, and personalized content strategies. Adapting to these

trends is essential for advertisers to maintain competitiveness while ensuring ethical and consumer-friendly practices.

Conclusion

This study examines the adoption process and sectoral dynamics of digital advertising in Türkiye within the framework of the Technology Acceptance Model (TAM), assessing how factors such as perceived ease of use (PEOU) and perceived usefulness (PU) vary across different industries and influence the acceptance of digital platforms. Based on data from 2018 to 2023, significant differences have been observed in the adoption process of digital advertising across various sectors.

The rapid adoption of digital advertising in the e-commerce and retail sectors can be attributed to the usability and performance advantages offered by digital platforms in these industries. In particular, the production of personalized content and targeted advertising strategies has been identified as a key factor in enhancing return on investment (ROI). These findings indicate that e-commerce and retail have undergone digital transformation more swiftly, with digital platforms playing an increasingly dominant role in these sectors.

In contrast, the adoption of digital advertising in the finance, healthcare, and education sectors has progressed at a slower pace. Factors such as digital infrastructure limitations, trust perceptions, and technical complexities have contributed to the relatively slower transition to digital platforms. However, increasing investments in digital infrastructure and the growing preference of users for digital services suggest that these sectors will become more actively engaged in digital advertising in the near future.

The study also identifies social influence as a significant factor in the acceptance process and sectoral dynamics of digital advertising. The impact of social media advertising has been particularly pronounced in e-commerce and retail, where user engagement, influencer marketing, and personalized content strategies have facilitated faster adoption. These findings further emphasize the critical role of social media platforms in shaping the acceptance and expansion of digital advertising.

In conclusion, the rapid growth of digital advertising in Türkiye has been shaped by factors such as ease of use, perceived benefits, and social influence. This study highlights the necessity of developing sector-specific digital advertising strategies that account for industry dynamics. The fast-paced digital transformation of e-commerce and retail suggests that digital advertising will continue to hold a prominent place in these industries. Meanwhile, in other sectors, increased digital infrastructure investments and enhanced user engagement are expected to accelerate the adoption of digital advertising.

By providing an in-depth analysis of the factors influencing the adoption process and sectoral dynamics of digital advertising, this study offers valuable insights for the development of industry-specific digital advertising strategies. In this context, it can be concluded that performance-based analysis of digital advertising investments by channel will play a crucial role in strategic decision-making processes.

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Perceived Ease of Use and Perceived Usefulness of Digital Advertisements in Türkiye: A Sectoral Assessment (2018-2023)

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Extended Abstract

Digitalization has led to fundamental transformations in the advertising industry, accelerating the transition from traditional media channels to digital platforms. Within the framework of the Technology Acceptance Model (TAM), perceived ease of use (PEOU) and perceived usefulness (PU) are key determinants in the adoption process of digital advertising. In Türkiye, digital advertising investments have increased significantly between 2018 and 2023. However, the adoption levels of digital advertising vary across sectors. While industries such as e-commerce and retail have experienced a rapid increase in the effectiveness of digital advertisements, sectors like healthcare and education have demonstrated a slower adaptation process. This study aims to analyze how digital advertising is shaped by sectoral dynamics and how the perceptions of ease of use and usefulness differ across industries.

This study employs a quantitative research approach to assess the adoption process of digital advertising in Türkiye. The dataset consists of secondary data obtained from the Media and Advertising Investment Reports published by the Advertisers' Association of Türkiye between 2018 and 2023. The study analyzes sectoral media investments, advertising performance indicators, and user adoption rates. The analytical process includes the following stages:

> **1.** *Sectoral Comparisons:* The impact of digital advertising investments on perceived ease of use (PEOU) and perceived usefulness (PU) across different industries is examined.
>
> **2.** *Time Series Analysis:* The rate of change in digital and traditional media investments between 2018 and 2023 is calculated to identify emerging trends.
>
> **3.** *Return on Investment (ROI) Analysis:* The effectiveness of different digital advertising channels is evaluated through ROI comparisons.

This methodological framework provides a systematic approach to understanding sectoral variations in digital advertising adoption and the evolving trends in media investments over time.

The findings reveal that the adoption process of digital advertising differs based on sectoral dynamics. Specifically, improvements in digital infrastructure, increasing facilitating conditions, and growing user trust in digital platforms have contributed to the widespread acceptance of digital advertising.

Transformation in Media Investments: In 2018, digital advertising accounted for 30% of total media investments, while traditional media held a dominant position with 40%. By 2023, the share of digital advertising had increased to 68%, whereas traditional media investments declined to 25%.

Sectoral Differences: The e-commerce and retail sectors exhibited the highest levels of perceived ease of use and adoption of digital advertising. The ease of use score for the

e-commerce sector increased from 65 in 2018 to 90 in 2023, while the healthcare and education sectors experienced a more gradual increase.

The Impact of Social Media Advertising: Social media advertising played a critical role in enhancing user acceptance, particularly in the e-commerce and retail sectors. The ability of social media platforms to engage users through personalized content and targeted marketing strategies contributed to this trend.

Infrastructure Development and Perceived Usefulness: The development of digital infrastructure has positively influenced the perceived usefulness (PU) of digital advertising. While the perceived usefulness score was 65% in 2018, it rose to 92% by 2023, highlighting the increasing value attributed to digital platforms by users.

ROI Performance of Digital Advertising Channels: Social media advertising demonstrated the highest ROI performance among digital channels. The ROI for social media advertising increased from 70% in 2018 to 90% in 2023, surpassing other digital advertising formats.

This study finds that the adoption of digital advertising varies across industries and is shaped by user perceptions, infrastructure development, and social influence factors. In particular, the e-commerce and retail sectors have benefited significantly from ease of use and personalized content strategies, which have enhanced the effectiveness of digital advertising. These findings support the idea that user-centered advertising strategies contribute to improved ROI.

In contrast, the adoption of digital advertising in the finance and healthcare sectors has been more gradual, largely due to trust-related concerns. This suggests that digital advertising strategies in these industries should prioritize transparency and data security to foster user confidence. Additionally, improving digital literacy levels in the education sector could enhance the adoption of digital advertising.

The findings align with the Technology Acceptance Model (TAM), confirming that perceived ease of use and perceived usefulness are crucial in explaining the acceptance process of digital advertising. However, when compared to extended models such as the Unified Theory of Acceptance and Use of Technology (UTAUT), additional factors such as social influence and performance expectancy emerge as significant determinants. The role of social media advertising in shaping user engagement underscores the importance of adapting advertising strategies to social dynamics.

Digital advertising continues to evolve through personalized content, artificial intelligence-driven analytics, and user-friendly interfaces. Future success in digital advertising will depend on sector-specific strategies that incorporate industry dynamics, enhance user engagement, and optimize infrastructure investments.

This study provides valuable insights into the development of sector-based digital advertising strategies. Performance-based analysis of advertising investments across different channels will play a critical role in shaping future strategic decision-making processes.

Keywords: Digital Advertising, TAM, Perceived Ease of Use, Perceived Usefulness, Sectoral Differences.