



SOBER
PROCEEDINGS

CIBES 2024 / 4th Current Issues in Business and Economic Studies Conference

**THE IMPACT OF ARTIFICIAL INTELLIGENCE
APPLICATIONS ON CONSUMER BEHAVIOR AND
PURCHASE INTENTION WITHIN THE SCOPE OF
DIGITAL TRANSFORMATION:
A BIBLIOMETRIC ANALYSIS**

Şeyda Ok^a

^aDr., OSTİM Technical University, Türkiye, seyda.ok@ostimteknik.edu.tr, Orcid: 0000-0002-1157-1701

Abstract

Digital technologies are a necessity for businesses and the applications developed within the scope of digital transformation are a critical element for marketing strategies. Today's changing consumer behavior is a dynamic process impacted by digital transformation, leading to differentiation in marketing strategies implemented by businesses. This study aims to use bibliometric analysis to reveal information about the impact of artificial intelligence on consumer behavior and purchase intention within the scope of digital transformation and development over the last 33 years. Articles were collected from two databases using keyword combinations such as 'artificial intelligence', 'digital transformation', 'consumer behavior', 'marketing', and 'purchase intention'. The final sample comprised 45 peer-reviewed articles after applying inclusion and exclusion criteria. To test the sample, three separate analyses were conducted. A performance analysis identified the publication years of the articles, contributions per country, the output of the relevant journals, and the sectors in which artificial intelligence applications are concentrated and used more. The articles were analysed in-depth for data analysis, providing insights into the evolution of relevant scientific production. The findings of the study offer a broad perspective on research to date and identify potential research gaps. This research aims to contribute to the marketing field by conducting a bibliometric analysis of research on the impact of artificial intelligence on consumer behavior and purchase intention. The Scopus and Web of Science databases were searched for articles published between 1991 and 2024. The results confirm that the literature on this topic has been increasing, especially

Cited: Ok, Ş. (2024). The impact of artificial intelligence applications on consumer behavior and purchase intention within the scope of digital transformation: A bibliometric analysis. *Sustainability, Organization, Business and Economic Research (SOBER)*, 2, 61-71. doi: 10.5281/zenodo.14602517

Selection and peer-review under responsibility of the 4th Current Issues in Business and Economic Studies Conference.

since 2018. The study provides valuable insights for both academics and marketers in predicting consumer buying behavior. The findings indicate that firms widely utilise digital technologies and that AI applications have a positive impact on consumer behavior and purchase intentions. The study also offers recommendations for future research by academics and researchers.

Keywords: digital transformation, artificial intelligence, consumer behavior, purchase intention

1. INTRODUCTION

The exponential advancement of scientific and technological progress has given rise to numerous groundbreaking discoveries and innovations. However, it is artificial intelligence (AI) that is widely regarded as the trailblazer in these advancements (Mariani et al., 2022). Since the 1950s, artificial intelligence has undergone a profound metamorphosis. Extensive research has demonstrated that the implementation of AI technology significantly simplifies consumer decision-making processes. This is achieved by minimizing search costs, expediting decision-making, providing a diverse range of options, and eliminating the influence of sales organizations (Huang and Rust, 2021). The emergence of AI, possessing human-like intelligence and the ability to tackle intricate problems, has resulted in its widespread adoption across all domains (Lee and Choi, 2016). Algorithms are meticulously designed to enable computers to follow instructions and solve problems. The utilization of artificial intelligence has proven to be advantageous for both marketers and consumers in the 21st century. It has emerged as a novel and innovative approach to problem-solving and generating innovative solutions through a machine learning process, which employs language. It is not only marketers who are interested in artificial intelligence; consumers also benefit from it. While the majority of their clientele utilise artificial intelligence, the company generates revenue by optimising the utilisation of financial and temporal resources to fulfil consumer demands. (Kim and Kim, 2017).

The field of AI has evolved to a level where it has transformed the interface of functions into an interface that is easy to use for users and focused on consumers. As a result, consumers are ready to receive support from AI in the stages of purchasing, selecting, researching goods.

Artificial intelligence algorithms play a crucial role in assisting marketers to achieve cost reduction and enhance consumer profitability (Yin and Qiu, 2021). In today's modern era, artificial intelligence has become an essential element in the decision-making processes of consumers, particularly in relation to their purchasing and consumption behaviors. Consumers readily embrace artificial intelligence due to its ability to simplify their lives and support the pursuit of a sustainable lifestyle. As a novel tool of the 21st century, artificial intelligence has become indispensable and convenient for consumers, enabling them to harness technology for their own advantage while simultaneously optimizing costs and saving time. The profitability of artificial intelligence across various domains has significantly contributed to its widespread acceptance and utilization among consumers.

The research investigated the utilization of artificial intelligence (AI) and its essential role in the marketing industry. It delves into a range of AI applications across different marketing sectors. Additionally, the research explores additional AI-driven innovations within marketing fields. Lastly, the research highlights and deliberates on the significant marketing benefits derived from AI.

2. REVIEW OF LITERATURE

2.1. Artificial Intelligence Applications and Marketing

Artificial intelligence (AI) is a field of computer science that enables machines to comprehend and replicate human communication and behavior. The advent of this technology has facilitated the development of intelligent machines based on the data provided that is capable of thinking, responding, and performing actions that are analogous to those performed by humans. (Toorajipour et al., 2021).

Artificial intelligence has the potential to be utilized by marketers to gain a deeper understanding of consumer behavior and enhance their ability to classify consumers and direct them towards the subsequent phase of their journey, thus offering them an optimal experience. Marketers can enhance the return on investment by avoiding the expenditure of resources on ineffective ventures. This can be achieved by meticulous examination of consumer data and an understanding of the true desires of the consumer.

In particular, providing results for consumer needs and providing appropriate product production and service delivery, managing real-time pricing demand fluctuations, designing websites according to needs using artificial intelligence applications, and making consumer purchasing processes more flexible and easier are among the application areas that can be realized within the scope of marketing is taking.

2.2. The Impact of Artificial Intelligence on Consumer Behavior and Purchase Intention

The consumer's attitude and orientation towards the purchase of a particular good or service, and the degree of willingness to pay, are collectively referred to as the intention to buy. The experience of artificial intelligence has been found to enhance consumer confidence and intent for specific products and services. Commercial organizations extensively utilize AI, which has led to the ability of consumers to visualize products in a distinctive way through augmented reality applications. This, in turn, assists them in making well-informed decisions when purchasing. Businesses have embraced various AI-enabled technologies to provide consumers with the best and personalized choices. (Pantano et al., 2017; Reinartz, 2019). The innovative technology utilized by artificial intelligence assists consumers in understanding their purchasing preferences with exceptional clarity. Previous research has indicated that the objective of artificial intelligence is to develop programs with human-like problem-solving capabilities that enhance the decision-making skills required for purchasing intent. (Qian and Xu, 2019). Furthermore, research has indicated that online platforms utilising artificial intelligence facilitate a safer and risk-free purchasing experience for consumers. (Haenlein, 2019). Artificial intelligence is a technology that is designed to be user-friendly, and it is used by consumers to make purchasing decisions while taking advantage of products or services. (Yoo, 2010). The significance and efficacy of artificial intelligence (AI) can be attributed to its

capacity to furnish consumers with a substantial volume of pertinent and organised data pertinent to purchasing-related activities. (Sohn and Kwon, 2020).

It can be argued that consumers' virtual experiences play a crucial role in determining their purchasing intentions. Indeed, research indicates that a positive virtual experience has a positive effect on consumers' purchasing intent. (Pantano et al., 2017). A study has found that consumers who purchase products from online stores that employ artificial intelligence are more satisfied with their purchase decisions.

3. METHODOLOGY

The methodology of this study consists of a comprehensive three-stage process that includes the selection of bibliometric databases, identification of keywords, identification of studies by year, identification of country-based contributions, and identification of the journals in which the studies were published.

3.1. Defining the Keywords and Identification of Key Outcomes

The initial search used keywords included in the 'artificial intelligence', 'digital transformation', 'consumer behavior', 'marketing', and 'purchase intention'. These keywords were entered into the two databases using the 'all fields' search function. As can be seen in Table 1, this methodology was used with all two databases.

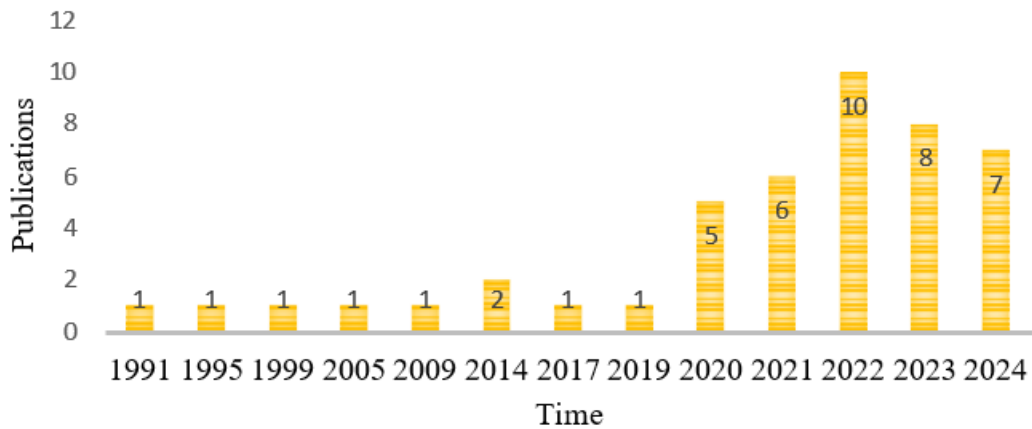
Table 1. Keyword Combinations

Database	<ul style="list-style-type: none"> • Web of Science • Scopus
Number of studies	<ul style="list-style-type: none"> • 14.973 • 4.560
Total \longrightarrow 19.533	

3.2. The Process of Analysing Data

The study aimed to analyze keywords related to artificial intelligence and consumer behavior and purchase intention. The analysis included the number of studies conducted by year, country-based contributions, and journal-based publications. The final sample comprised 45 peer-reviewed articles after applying inclusion and exclusion criteria. The studies published every year are shown in Figure 1.

Figure 1. Number of Publications by Year

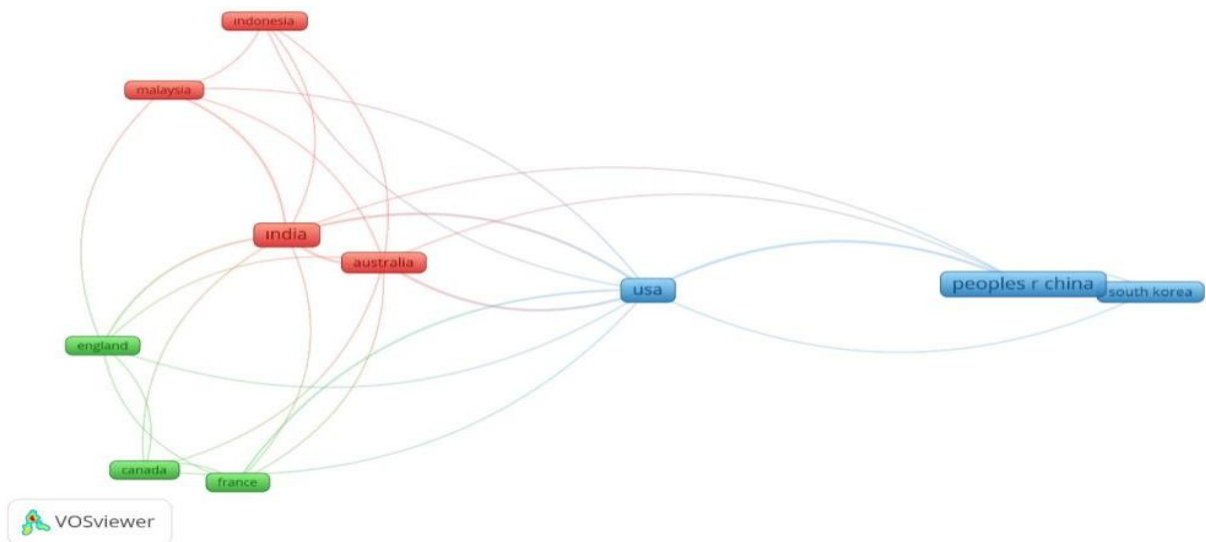


It is seen that studies on artificial intelligence applications, consumer behaviour and purchase intention in the field of marketing have increased in 2020 and in the following years. It is seen that the highest level was reached in 2022 in terms of the number of publications.

3.3. Determination of Contribution by Country

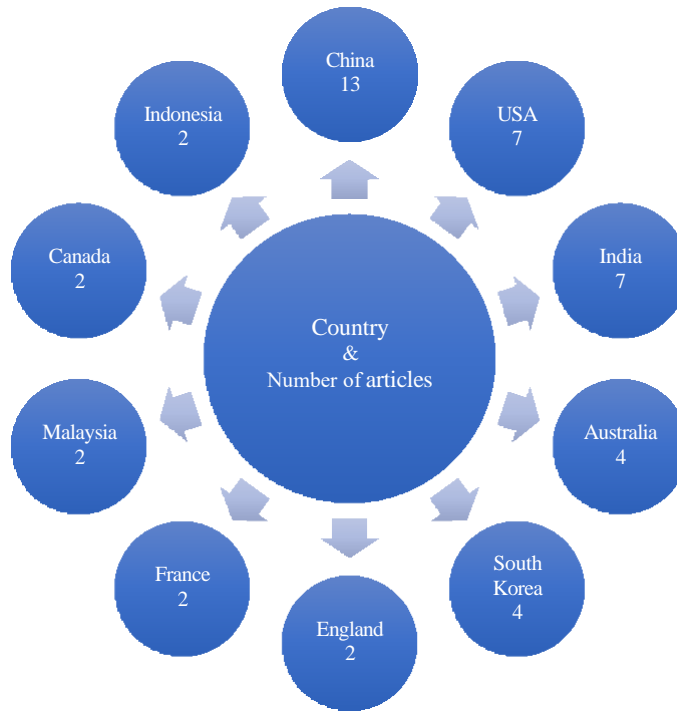
The research identifies the top-producing countries in a field based on the authors' country of origin. The map shows the country with the highest number of publications. The top 10 contributing countries were identified. The map is shown in Figure 2 and Table 2 outlines the top 10 countries with the most publications.

Figure 2. Map of the Most Prolific Countries



Within the scope of the studies carried out, it is seen that the most productive countries are China, America and India, respectively, based on the origins of the authors.

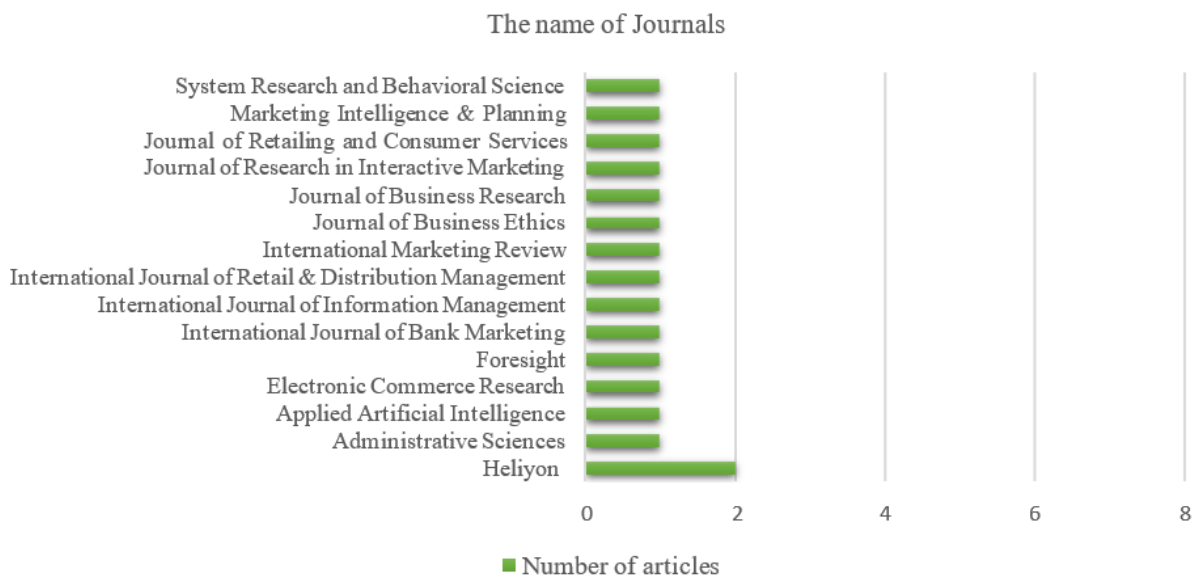
Table 2. The 10 Most Productive Countries



3.4. The Determination of the Number of Publications According to Journals

The 15 articles were published in 15 journals: the statistics show that the articles were not concentrated on just a few journals but were published over a wide variety. Table 3 lists the 15 most featured academic journals. Since consumer behavior and purchase intention are related to the business field and, more specifically, to marketing, most of the journals are associated with marketing in some way. Academic studies within the scope of artificial intelligence applications, consumer behavior and purchase intention are still very new, and there are still few studies in this field.

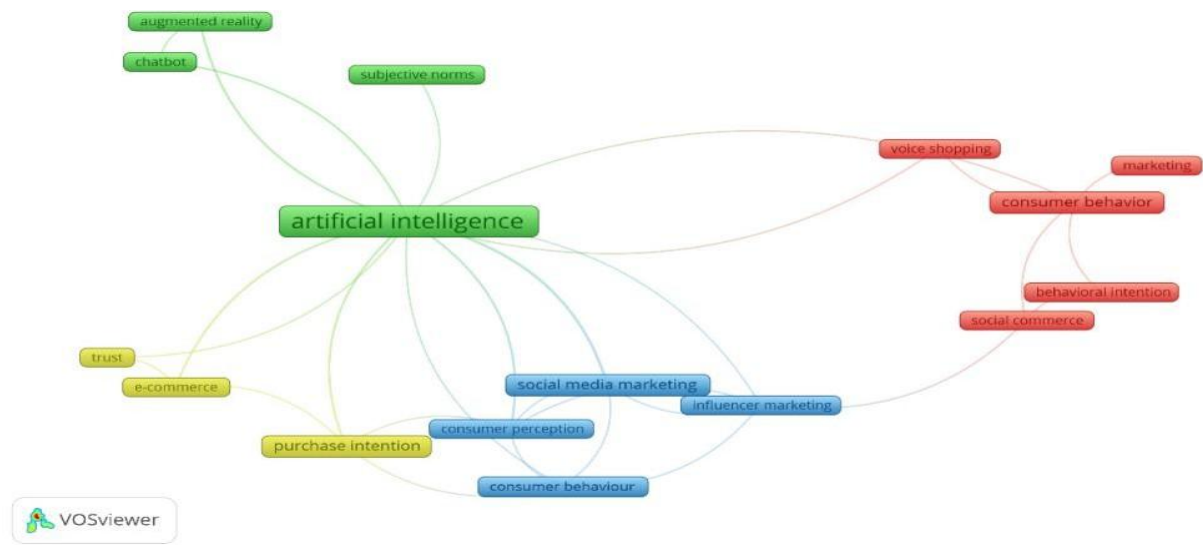
Table 3. The Fifteen Most Prominent Academic Journals



3.5. Publication Performance of Academic Journals

An analysis was carried out for the keywords used in the studies conducted within the scope of artificial intelligence. In the analysis, the studies conducted in the field of business administration were determined in accordance with the purpose of the study. The keywords used in the journals in which these articles were published were determined, and various clustering results were obtained regarding the scope of the studies conducted so far. The results for keywords are shown in Figure 3.

Figure 3. Visualization of Keywords



4. RESULTS

Four clusters emerged after the keyword analysis of the studies carried out. In this context, in the first cluster more studies on consumer behaviour and purchasing attitude are included. In particular, it is stated that studies on voice shopping are prominent and that consumers can shop online by speaking and the purchasing process becomes easier. In the second cluster, the concepts of artificial intelligence and augmented reality stand out. In this cluster, it was concluded that more studies were carried out on the use of chatbot applications by consumers during service procurement. The third cluster includes studies on the concepts of social media marketing and influencer marketing. In this context, it is seen that especially the relationships with consumer perception and consumer behaviour are examined. Through artificial intelligence applications, businesses can produce content and analyse data on social networks. In the fourth and last cluster, it is seen that studies on consumers' purchase intention and e-commerce concepts have been carried out. Another result is that the mediating effect of the concept of trust is investigated in the studies conducted for this.

As a result of the bibliometric analysis, it is seen that the studies on how consumer behaviours are shaped with artificial intelligence in today's digital age and accordingly, the direction in which consumers' purchasing behaviours have evolved are especially concentrated in 2020 and

beyond. When these studies are analysed by country of origin, it is seen that China, America and India stand out. Considering the number of studies, it is seen that there are still few publications in the field.

5. CONCLUSION AND DISCUSSION

As a result of the studies carried out, four clusters emerged and in this context, it can be stated that there are studies in which the concepts of purchasing behaviour, consumer perception and trust are at the forefront. It is seen that studies on e-commerce, retail sector and social media are more intense.

The analysis of the studies revealed that the advent of artificial intelligence has significantly altered consumer purchasing intentions. Furthermore, consumers now feel more secure and are more willing to shop online, particularly when utilising AI-supported technology.

Within the scope of future studies in the field, it can be investigated how artificial intelligence can be used to create personalised experiences for consumers, especially for businesses and researchers, and how marketing analytics techniques can be used to target potential consumers. Especially the evaluation of the results obtained from consumers at the point of data analysis is very important in this respect. In this way, increasing the studies on determining the target market and making the right positioning will be beneficial in terms of determining consumer behaviour and purchase intention.

AI tools have proven to be a time-saving asset for businesses, allowing them to allocate their resources towards other crucial aspects of digital marketing. The emergence of artificial intelligence has brought about significant technological advancements, which have far-reaching consequences. Consequently, in the forthcoming years, research focusing on the utilization of AI in digital marketing will play a pivotal role in fostering innovation, enhancing productivity, and delivering personalized services. This will not only benefit the field of digital marketing but also contribute to the growth and success of businesses. Particularly, the e-commerce and retail sectors can conduct extensive studies in this domain, especially in relation to online purchases.

Another research proposal for the field is the use of artificial intelligence to assess consumer behaviour and patterns, predict future outcomes and adjust advertising appropriately. AI-powered machine learning algorithms have the capability to analyze extensive sets of past consumer data in order to identify the most suitable advertisements for consumers and pinpoint the ideal stage in the purchasing journey. Artificial Intelligence offers the advantage of optimizing the distribution of content at the most opportune moment by leveraging trends and data. In this context, especially the use of machine learning will contribute.

Artificial intelligence is being used in many fields, especially in the finance, tourism, healthcare and retail sectors. Different outcomes are produced by each use case, including enhanced

campaign performance, improved consumer experience, and heightened efficiency in marketing operations. In this context, it is of great importance to increase the number of studies on artificial intelligence applications, especially in determining consumer behaviour and examining purchase intentions, and to identify gaps in the field.

REFERENCES

- Haenlein, M., Kaplan, A., Tan, C. W., & Zhang, P. (2019). Artificial intelligence (AI) and management analytics. *Journal of Management Analytics*, 6(4), 341-343. <https://doi.org/10.1080/23270012.2019.1699876>
- Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of The Academy of Marketing Science*, 49, 30-50. <https://doi.org/10.1007/s11747-020-00749-9>
- Kim, H. K., & Kim, W. K. (2017). An exploratory study for artificial intelligence shopping information service. *The Journal of Distribution Science*, 15(4), 69-80. <https://doi.org/10.15722/jds.15.4.201704.69>
- Lee, J. Y., & Choi, B. S. (2016). Suggestions for nurturing ecosystem to spur artificial intelligence industry. *Electronics and Telecommunications Trends*, 31(2), 51-62.
- Mariani, M. M., Perez-Vega, R., & Wirtz, J. (2022). AI in marketing, consumer research and psychology: A systematic literature review and research agenda. *Psychology & Marketing*, 39(4), 755-776. <https://doi.org/10.1002/mar.21619>
- Pantano, E., Rese, A., & Baier, D. (2017). Enhancing the online decision-making process by using augmented reality: A two country comparison of youth markets. *Journal of Retailing and Consumer Services*, 38(1), 81-95. <https://doi.org/10.1016/j.jretconser.2017.05.011>
- Qian, M., & Xu, Z. (2019). A study of dynamic recognition of consumer brand decision-making preference based on machine learning method. *Nankai Bus. Rev*, 22(1), 66-76.
- Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing*, 36(3), 350-366. <https://doi.org/10.1016/j.ijresmar.2018.12.002>
- Sohn, K., & Kwon, O. (2020). Technology acceptance theories and factors influencing artificial intelligence-based intelligent products. *Telematics and Informatics*, 47, 101324. <https://doi.org/10.1016/j.tele.2019.101324>
- Toorajipour, R., Sohrabpour, Nazarpour, A. N. Oghazi, P., & Fischl, M. (2021). Artificial intelligence in supply chain management: A systematic literature review. *Journal of Business Research*, 122, 502-517. <https://doi.org/10.1016/j.jbusres.2020.09.009>

Yin, J., & Qiu, X. (2021). AI technology and online purchase intention: structural equation model based on perceived value. *Sustainability*, *13*(10), 5671. <https://doi.org/10.3390/su13105671>

Yoo, W. S., Lee, Y., & Park, J. (2010). The role of interactivity in e-tailing: Creating value and increasing satisfaction. *Journal of Retailing and Consumer Services*, *17*(2), 89-96.