

Drivers and Barriers to AI Adoption in Retail Enterprises: A Systematic Literature Review and Conceptual Framework

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Abstract—The emergence of artificial intelligence (AI) technology has profoundly changed the value chain of the retail industry. However, there is a significant gap between the potential value of AI and its actual implementation in retail operations, which highlights the practical challenges of integrating AI into daily operations. Since the introduction of ChatGPT in 2022, the number of studies on the application of AI technology has surged. This study aims to systematically explore factors that promote and hinder AI adoption in retail businesses. The study employed a systematic literature review, focusing on peer-reviewed academic articles in English published between 2015 and early 2025. This review specifically covers the topics of AI technology. The results of this study identify five major drivers, including cost reduction, improving service quality, marketing activities, external factors, and supporting decision-making. In addition, seven major barriers were identified, including perceived ease of use, uncertainty in returns, lack of talent, digital environment, investment and cost, data privacy and ethics issues, and organization and culture. This study also developed a conceptual framework based on the Technology Acceptance Model (TAM) to describe the mechanisms in which driving and impediment factors take effect. This study assists researchers in assessing the current state of research on AI adoption. As attention to AI technology grows, the importance of integrating evaluations of existing systems becomes evident.

Keywords— *Artificial Intelligence Adoption, Driving Factors and Barriers, Retail Industry, Systematic Literature Review*

I. INTRODUCTION

A. Research Background

Although artificial intelligence is neither a new discipline nor a new academic research field, the results of recent technological developments show that artificial intelligence is being widely accelerated and affecting more

and more fields [1]. Recent research on innovation, entrepreneurship, and emerging technologies highlights how technology-driven businesses are leveraging these advancements to transform their entrepreneurial practices and drive growth [2]. In November 2022, Microsoft-backed OpenAI launched its generative AI chatbot prototype ChatGPT, and the technology reached its peak of popularity [3]. Furthermore, artificial intelligence has been applied across a range of scenarios, including image generation, inventory optimization, autonomous driving assistance, and route optimization. These applications and the powerful functions they promise to achieve have driven the rapid growth of investment in this field: according to Armstrong [4], the total value of mergers and acquisitions, minority equity, private investments, and public offerings in the past decade reached US\$934.2 billion. Perhaps as Kristalina Georgieva mentioned [5], we are on the verge of a technological revolution.

Moreover, existing research shows how contemporary AI can support various types of businesses, especially those in the retail industry, to maintain their momentum [6], accelerate their operations, and promote regional growth [7]. This presents a variety of opportunities, such as enhancing customer interactions to boost consumer satisfaction [8], creating a seamless customer experience to increase appeal [9], and enabling retailers to adopt AI for improving corporate governance while significantly reducing major costs and time inefficiencies [10].

Conversely, a notable gap exists between the potential benefits of AI and its actual implementation in businesses, with many companies surprisingly reluctant to adopt it [11]. In this regard, Marocco et al. observed that the use of AI in human resources is still quite limited [12], with only a few companies, such as Unilever, exploring AI

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applications to improve specific management processes like recruitment systems. This gap is further reflected in training programs and human capital development: Eastwood showed that while 94% of executives planned to increase technology investment, only 26% of the investment focused on improving employee skills [13]. Undoubtedly, this gap between the opportunities brought by AI technology and actual adoption reveals the practical challenges of embedding AI into business processes and suggests the existence of potential obstacles.

B. Research Purpose

As mentioned above, a series of factors may hinder or promote the acceptance and application of AI technology by retail companies. Existing research has provided some insights. For example, Kumar et al. mentioned that the most important reason hindering the adoption of AI may be the lack of infrastructure or conservative business culture [14]. Marocco et al. emphasized ethical and privacy issues [12], lack of expertise and insufficient professional training. In addition, Leyer and Schneider focused on some personal characteristics of managers [15], including overconfidence, control, and personality traits. They stifle curiosity and the pursuit of knowledge, further reinforcing the barriers to adopting intelligent systems. Hirvi connected AI adoption to the degree of digitalization within a company [16], suggesting that low digitalization not only signifies a lack of data but also an inability to prepare for AI integration. Rane highlighted knowledge barriers, explaining that the widespread adoption of AI is hindered by the limited understanding and awareness of AI technology among managers [17]. Many business leaders and employees struggle to comprehend how AI works, its capabilities, and the potential advantages it offers. From a more practical standpoint, Bharadiya emphasized that developing and implementing AI systems demands considerable investments in technology, infrastructure, and skilled talent [18].

In summary, in terms of theory, although there is a large amount of literature on human acceptance of artificial intelligence, it is fragmented. This means that the driving and hindering factors are still not fully explored. These research structures have all helped to explain the gap between the opportunities brought by AI technology and actual adoption, but they have not been systematically retrieved and summarized. Conversely, considering AI development trends, retail managers and executives must assess and define their company's technology strategy to effectively navigate the rapid shifts in both internal and external environments, while also investing more in developing the necessary technical skills. For these enterprises, avoiding the risks of adopting new technologies and applying new technologies to cope with competition from peers must be considered simultaneously.

Therefore, it requires a systematic evaluation method that considers a wide range of research. By systematically collecting all studies in this field and critically evaluating previous studies, this method will present a general view of current research and provide a foundation for future research. To fill this research gap, this study aims to conduct a systematic literature review to identify the main factors driving and hindering AI adoption in retail businesses. Not only that, combined with existing theories in the literature, it will also organize these factors into a conceptual framework to help subsequent researchers determine how artificial intelligence can be successfully integrated into the value creation process of enterprises.

C. Key Concept: Artificial Intelligence

Before introducing the methodology used in this study in detail, it is necessary to first define and scope key terms, including the two core concepts of this study, AI technology and retail industry.

It is necessary to first clarify the definition of artificial intelligence (AI) so that researchers can better summarize and explain its application in the express logistics industry. Although it has been widely used, there has been no clear definition of the term "artificial intelligence" [19]; in fact, mainstream research mentions the rich meaning of AI. When discussing the nature of artificial intelligence, researchers generally hold two core views. The first perspective, outlined by Demlehner and Laumer [20], regards artificial intelligence as an effective tool capable of performing tasks that are either too complex or time-consuming for humans. The second perspective views AI as a system that replicates human intelligence and cognitive processes [21]. Although there are some differences, the academic community generally believes that artificial intelligence is to give computers human-like abilities [21], while artificial intelligence is different.

In addition, in terms of the capabilities of artificial intelligence, some researchers believe that artificial intelligence should only refer to those intelligent agents that completely replicate human behavior; while others believe that it can be regarded as a tool that fails to cover all human capabilities [22]. In this article, we adopt Kaplan and Haenlein's definition of AI as a system [23], technology or machine applied to a solution. It is designed as an auxiliary means rather than a substitute for completely imitating human capabilities, aiming to enable the system to recognize, understand, reason and learn from data to achieve specific goals.

Next, for the specific technologies and concepts involved in artificial intelligence, it involves more complex classification issues. As outlined by Toorajipour et al. [24], a review and analysis of existing literature shows that there are about 20 technologies in artificial intelligence. Among them, some technologies are used more than others; the largest part focuses on artificial neural networks (ANN) and genetic algorithms (GA).

Enholm et al. [25] divide these technologies into three categories: machine learning (ML), deep learning (DL), and other AI technologies are key components in this field. Similarly, Verma et al. [26] categorize AI into three fundamental concepts: machine learning, neural networks, and advanced deep learning applications, such as natural language processing and data mining [26]. In this study, it combines the views of Enholm et al. and Verma et al. to take into account AI technologies built on ML, DL, and other technologies [25] [26].

D. Key Concept: Retail

Like AI, retail is a concept that is widely discussed but its meaning and scope are subject to changing trends. It includes all sales to end consumers, from cars to clothing, from restaurant meals to movie tickets: Bangalore Seetharam summarizes its diverse forms, including department stores [27], grocery stores, clothing stores, electronics and consumer goods stores, convenience stores, supermarkets, malls, and some e-commerce platforms. It is widely acknowledged that retail represents the final stage of the distribution channel [28]. Accordingly, this study adopts Vaja's definition to outline the scope of the retail industry [28], encompassing business activities that sell goods and services directly to consumers for personal, family, or household use. It should be emphasized that this activity must be B2C or C2C, that is, sales to consumers, which excludes the so-called B2B form of distribution activities.

It should be emphasized that with the development of e-commerce, social media, and various distribution networks in recent years, online retail has been increasingly mentioned in addition to traditional channels. Among them, traditional retail refers to the general term for retail business forms that sell products and services at fixed locations [29]. Online retail refers to any commercial transaction or business process where parties engage electronically via the internet or mobile phones [30]. Unlike traditional, offline retail, products are delivered to consumers through shipping or express delivery services. As Heins [31] noted, today's consumers expect products to be available around the clock, with the added convenience of digital features and quick online price comparisons. In addition, Chae and Goh also mentioned that traditional retail stores have also been found to incorporate a range of e-commerce payment [32], delivery, or purchase functions, thus achieving a more integrated experience. For this study, it involves all of these retail formats and therefore attempts to provide a comprehensive discussion.

E. Research Structure

The structure of the paper is organized as follows: First, it introduces and explains the key concepts relevant to the study. Then, it outlines the methods used for the systematic literature review (SLR), including the data sources and selection criteria. The paper proceeds to present and discuss the research findings, focusing on the primary

drivers and obstacles to AI adoption. Finally, a conceptual framework is proposed, demonstrating how these factors influence the acceptance or rejection of AI technologies within organizations.

II. MATERIALS AND METHODS

This study employs a systematic literature review (SLR) method, which addresses issues like subjectivity and bias commonly found in traditional review approaches [33]. It provides a systematic process for synthesizing and reviewing relevant research, offering valuable insights on recent trends and progress in the research topic or area [34]. Particularly, the process involves a systematic search in reputable databases and securing research samples on significant topics to inform a systematic and comprehensive synthesis. This study adopted the process because there is a wide literature in the field, with numerous research studies on artificial intelligence and on technologies in AI in the retail field. The research in the paper conforms with the PRISMA process in carrying out the search, using three databases: EBSCO, Scopus, and Web of Science, systematically retrieving literature required in the analysis.

In establishing the search criteria, the study used lists of keywords in several current studies in the field of sustainable logistics to get the most appropriate words. The first keyword string contains six terms related to AI and retail: 'retail industry', 'retail enterprises', 'artificial intelligence', 'artificial intelligence technology', 'barriers', and 'driving factors'. The keyword list above was used in coming up with eight combinations and applying them in the EBSCO, Scopus, and Web of Science databases. The final search string used (taking Web of Science as an example) is: TS = (("retail industry" OR "retail enterprises") AND ("artificial intelligence" OR "AI technology") AND ("barriers" OR "driving factors")). Given the important impact of technological progress, this study only collected samples from the past decade (2015-2024). Search results, collected as of February 15, 2025, yielded 332 articles after preliminary searches and deduplication of the three databases.

TABLE I LITERATURE SCREENING CRITERIA

Type	Inclusion Criteria
Source	The documentation must be completed in English.
Content	The papers must be from management, marketing, logistics management, human resources, and other business fields; papers from computer science or algorithms are excluded.
Standards	The core focus of the literature is on AI applications in the retail industry, including various AI technologies. The article must clearly mention the drivers or barriers to the application of artificial intelligence technology in the retail industry in the main text.

Source Quality Standards	<p>The length of the paper should not be less than 5 pages, excluding reports and short articles under 5 pages.</p> <p>The literature must be available in the database for full text access (full-text paper).</p> <p>The document must include all required information elements, such as an abstract, author details, keywords, and complete references.</p> <p>Journal impact factor ≥ 1</p>
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Next, it is necessary to introduce the criteria for screening literature in this study. When searching for the first time, some seemingly irrelevant articles often appear. Therefore, to ensure that the included literature is relevant to the research topic, manual screening is essential. The above Table 1 shows the screening criteria:

Next, based on the above criteria, the screening process is shown in the Figure 1 above: It reviews the literature based on the framework provided by [35]. The framework finally obtains the sample set through steps such as subtitles, abstracts, and exclusion termination results.

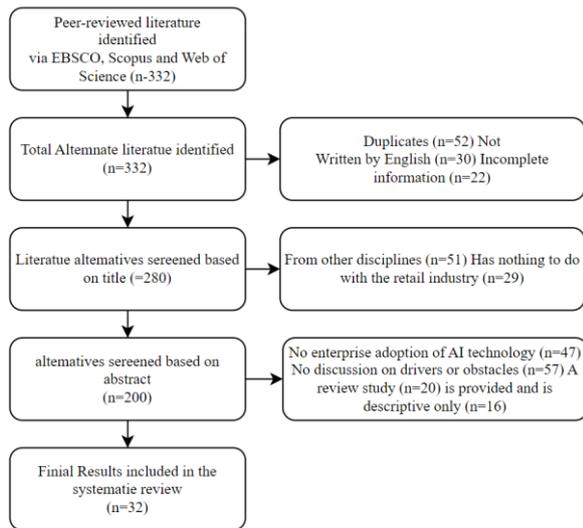


Fig. 1. Literature screening process

By searching keywords in the three databases, a total of 304 documents were obtained. Among them, EBSCO, Scopus, and Web of Science provided 144, 75, and 115 samples; they constituted the initial sample set after excluding duplications. Among them, 30 documents were written in non-English languages, and 22 documents were excluded because of incomplete or unavailable information. Based on the search of article titles and keywords. Among them, 51 people came from other disciplines, including computer science, algorithms, finance, and economics. Next, based on the review of the abstracts, 29 papers were not related to the retail industry. These documents were excluded. Forty-seven papers were excluded for not addressing the adoption of AI technology by enterprises, while fifty-seven papers did not discuss the

driving or hindering factors related to AI adoption. In addition, 20 articles provided review studies, while 16 articles were only descriptive. These samples were excluded, and finally 32 samples were included in the study.

III. RESULTS AND DISCUSSION

This section presents the results of the main analyses, focusing on the distribution of papers by journal, country, year, and research field. These analyses aim to provide insights into the development of academic interest in AI in the retail industry and the geographical distribution of research.

A. Distribution by Year, Journal, and Country

The scientific literature on AI is continuously evolving, reflecting the growing interest in these topics within both academia and industry. The 32 selected articles were published over a 10-year period, from 2015 to early 2025. Notably, the number of publications has been rising sharply, with 73% of the articles published in the past five years, highlighting a significant surge in academic interest in AI within the retail sector.

In terms of journals, there are 14 different journals in total. The journals include Decision Support Systems (4), Industrial Marketing Management (4), Sustainability (2), Journal of Retailing and Consumer Services (3), International Journal of Retailing and Distribution, and Retailing Magazine (3), as well as a few others. These figures not only highlight the growing significance of AI in retail but also point to the fragmentation of academic literature across various subfields within retail. Specifically, the papers are published in journals focused on retail, technology, economics, and marketing. Many of these studies include real-world case studies, offering valuable data through the analysis of specific examples.

Mixed method research, qualitative research, exploratory research, quantitative research, case study, and theoretical and conceptual research are the seven types of research coded into categories. Mixed method research is the most common, with a total of 19 articles. Quantitative research and case study are tied for second, with 5 articles each. Additionally, there are 3 qualitative studies, 1 theoretical and conceptual paper, and 2 exploratory studies. Regarding the target regions, it is notable that the largest number of studies come from India (6), the United States (9), and China (13), reflecting these countries' strong economic and cultural investment in emerging technologies, particularly AI.

B. Drivers

The following content shows the driving and obstructive factors based on the induction of sample documents, thereby drawing research conclusions. Based on the data analysis results, five major drivers were identified, including reducing costs, improving service

quality, marketing activities, external factors, and supporting decision-making.

1) Reduce Costs

First, the largest sample (10/35) mentioned the cost and efficiency appeal of retail firms' investment or a complete shift to AI technology. As Polisetty et al. mentioned, artificial intelligence is seen by these as a beneficial tool that can increase productivity, reduce costs and simplify processes [36]. More specifically, this motivation is mainly due to the operational attraction for retailers to drive technology adoption: Artificial intelligence can help retailers simplify inventory management by keeping stocks of popular goods and using clustering technology to predict future consumer demands, thereby saving cost [37][38][39]. Further, by leveraging and deploying artificial intelligence algorithms and automated robots, retailers can optimize logistics transactions such as warehouse facilities, distribution route planning and product supply chains, thereby reducing labor costs [40][41][42]. Another aspect of cost saving comes from AI-driven customer service automation mentioned by Huang & Rust, especially chatbots and virtual assistants based on generative AI [43]. With 24-hour service, it reduces the demand for large customer service teams, making cost reduction highly attractive to retail companies.

2) Improve Service Quality

Next, another widely mentioned driver comes from the prospect of improving service quality (9/35). As Huang and Rust mentioned, when services are relational and high-contact, it feels that artificial intelligence should be used for relationalization, for relationship leadership, and mainly used in the service interaction phase [43]. This is due to the service quality advantages brought by its response speed: the intelligent customer service system uses natural language processing technology to provide 24/7 instant service [45]. Some studies mentioned that an important reason why retailers adopt chatbots is that the "humanized" interactions of AI customer service personnel may reduce burnout, errors and toxic problems caused by human customer service, thereby enhancing trust, perceived risks and satisfaction, and improve service quality [44][46][47]. In the post-purchase stage, customer service specialists and virtual assistants can automate the return and exchange process after checkout [48][47], thereby avoiding dissatisfaction due to inability to obtain after-sales service in a timely manner. In terms of personalization, using virtual assistants to personalize can reduce consumer service costs and speed up response time to consumer queries [49]. This relies on complex application scenarios of image recognition and speech recognition technology and AI construction.

3) Marketing Activities

Beyond that, another attractive reason for the adoption of AI technology for retailers is its significant marketing

significance (5/35). For e-commerce platforms and merchants, it can help e-commerce platforms attract consumers through sorting algorithms to display products that meet consumer expectations or encourage consumers to purchase [50][51]. In fact, everything in the e-commerce platform is presented in image form, image size and better visual product display can create a pleasant shopping experience [52]. Methods such as keyword clustering, image analysis, and computer vision use artificial intelligence to identify relevant areas of action and potentially identify cross-selling activities, thereby helping e-commerce platforms to display products more effectively to customers [52]. This also includes helping to generate marketing content such as advertising images and marketing copywriting [53], and further optimizing marketing campaigns [54]. Malikireddy shows that datasets of AI models can create marketing content that is more engaging and more effective in promoting interaction and advertising revenue [53].

4) Support Decision Making

Companies hope to adopt a data-driven approach in decision-making, using analytics (facts) rather than relying on intuition, are another important driver of their application of AI technology (5/35). As mentioned by Rane et al. artificial intelligence improves decision-making processes, optimizes operations and promotes innovation [55]. Decisions are known to be influenced by psychological and social factors, and machine learning-driven decision support systems can extract actionable insights from customer data to provide undisturbed suggestions [56]. Furthermore, AI can improve data-based revenue models and implement related AI services and solutions [57][58]; this is a significant perceptual usefulness mentioned by many review papers. factors, thus becoming one of the driving factors for adoption.

5) External Factors

In addition, including suppliers or partners (4/35), as well as government or policy encouragement (2/35), are also considered an important reason for promoting retail companies to adopt AI. In detail, supplier partnerships can facilitate businesses to implement AI by providing basic training and addressing data privacy issues [59]. Supportively, Yang et al. argues that vendor participation can significantly affect the adoption and spread of AI solutions among managers [60]. In fact, supply chain digitization generates a large amount of data that is seen as a new type of resource with the potential to create value and enhance competitiveness; suppliers often need a large amount of data to train their AI technology, which often involves consumer information. Therefore, suppliers must work closely with the company to promote AI training during and after implementation [59][61]. In addition, Phuoc research highlights the important role of government participation in adopting AI-based solutions, including setting standards, providing tax incentives, and

providing incubation resources [59]. But in general, there are very few studies referring to government or policy as driving factors.

C. Impediments

Next, based on the data analysis results, seven major impediments were identified, including perceived ease of use, uncertainty of returns, lack of talent, digital environment, investment and cost, data privacy and ethical issues, and organization and culture.

1) Perceived Ease of Use

In previous studies, researchers have very consistently argued that ease of use is the main determinant of technology adoption (14/35). Specifically, when managers believe that adoption of AI technology is difficult, they tend to avoid adopting it [66][67]. For example, Vărzaru proposes a model designed specifically for the adoption of AI technology in a management environment and shows that managers' perceptions of the ease of use of AI technology can affect their use of management and technology resources [62]. When managers view AI solutions as unfriendly and can affect their day-to-day work, they tend to abandon them [63][66]. Similarly, there is evidence that some localized AI models can cause maintenance and operational difficulties [64], which is fatal to many small retail businesses. Further, speed and novelty are determinants of the ease of use of AI technology by managers [62].

2) Uncertainty of Returns

According to Jan et al. (2023), uncertainty regarding the return on the introduction of AI technologies is also a significant hindrance in the introduction of AI solutions. It is also seen from the perspective of numerous researchers (12/35). For the majority of the small and medium-sized firms, the introduction of AI technologies is usually associated with large initial investments [66]. Although certain organizations spend money on AI solutions, they usually encounter the problem of the zero return on this investment [72][71][64]. Uncertainty regarding the return on the investment results in the reluctance of the managers of firms to be accountable for the low returns, which results in hindrances in the introduction of AI technology. In contrast, Paramesha et al. indicated that when the managers of the organization realize the introduction of AI technology is associated with great returns as well as a large return on the investment, they usually make the decision to adopt AI technology [73].

3) Lack of Talent

Kar et al. regarded the lack of AI talent as the greatest obstacle for the introduction of AI technology for retail firms [74]. This view is depicted in many studies (5/35). For example, Wilson, Johnson, and Brown (2024) regard the lack of labor skills as the greatest obstacle for the adoption of artificial intelligence for retail firms.

According to the study, since there is no managerial talent with AI capabilities as well as skilled operating talent, certain firms need to invest in training and development [62]. In turn, the need for labor retraining and improving skills cannot be ignored [68][74][57]. Companies must ensure that employees can master the necessary skills to use AI when implementing AI technology. While sufficient training can ensure smooth implementation of the business, the process can put a huge time pressure on the company and thus create organizational confusion. In contrast, hiring relevant talents externally may lead to difficulties in embedding business or organizational environment [58][52].

4) Digital Environment

The implementation of AI technology requires compatibility of digital environments and information systems, which means that enterprises must integrate AI solutions with existing systems. The lack of a digital environment often becomes a barrier to the implementation of AI technology (3/35). As Rane et al. pointed out, embedding AI technology into the company's current business processes means difficulties, which come from hardware compatibility, operating system compatibility, communication protocols, and network matching [55][76]. To implement AI technology, a range of evidence suggests that companies must make large-scale changes to their IT infrastructure, workflows, and data structures [76][71]. This could result in business disruptions and additional costs: concerns about this potential risk make it difficult for managers and technicians to conduct AI technology practices with confidence [54][55].

5) Investment and Cost

The implementation of AI induces high investment and costs, which poses a barrier that cannot be ignored (14/35). According to Barenboim et al. the implementation of AI technology in the retail industry requires substantial investment in different aspects including office facilities, computing equipment, terminals, technology, recruitment of employees, and training existing members [55][64][77]. This is often difficult to afford for small and medium-sized enterprises. In addition to initial investment, the implementation of AI technology also means that companies should continue to pay for data storage, maintenance and updates, which often exacerbates the problem of limited budgets [78][75].

6) Data Privacy and Ethical Issues

It must be considered that the problem of the security of the data as well as the ethical issues of AI systems is a core problem, which garnered wide attention from researchers (7/35). In many fields such as finance, commerce, as well as enterprise management, processing the enterprise's as well as the users' data is important. Leakage as well as abuse of the data have been a barrier

for many firms to embrace the use of AI technology [73][55]. At the same time, the functionality of the AI system is highly correlated with the used data for the system's training, which shows the use of biased data can exaggerate the unfairness as well as the discrimination [73][74]. In enterprise processes, after the AI system is biased, the system can compel firms to discriminate their clients, thereby injuring their image [67].

7) Organization and Culture

Organization and culture have been revealed as the main impediments to the adoption of AI technology (4/35). According to Mahmud et al. aversion toward AI technology is generally produced through factors of the environment, organization, as well as the culture [70]. This is because senior leaders in a company tend to be the biggest drivers of the organization's culture [66]. Where senior managers have the passion toward shaping the organization's culture as being more innovative as well as nonconformist, the adoption of AI technology is more likely to be improved [66][56]. But when the organization's culture is lacking trust as well as the adoption of technology, or is conflicting with the perceived value of AI, the adoption of AI technology will be resisted [70][69]. Because the adoption of AI technology is largely from the top down. But most senior leaders possess low levels of AI competency, which can turn the organization as well as the company's culture into impediments toward the adoption of AI technology.

D. Discussion: Conceptual Framework

Based on the above discussion, the five drivers include reducing costs, improving service quality, marketing activities, external factors, and supporting decision-making. In addition, seven major barriers were identified, including perceived ease of use, uncertainty in returns, lack of talent, digital environment, investment and cost, data privacy and ethics issues, and organization and culture. For these relatively complex concepts and influencing factors, they clearly exhibit an asymmetric influence: the drivers and hindrances that produce the most important influence do not correspond one by one. Therefore, it is necessary to further establish a conceptual framework to provide a basis.

In this regard, the TAM model proposed by Davis provides a reasonable reference: the intention to use this technology is driven by usefulness and ease of use, which predict actual usage [80]. The model mentions two key factors: PU and PEOU. Among them, the extent to which the user believes that using a specific system can improve his or her work performance is perceived usefulness (PU); perceived ease of use (PEOU) refers to the extent to which the user believes that it is easy to use a specific system. Subsequent research extended the application of the model. For example, Xiao and Kumar conceptualize employee acceptance of robots as a four-dimensional structure [83]. Silva extends the simple TAM model and incorporates

external variables (EV), Behavioral Intention to Use (BIU), and attitude towards use (ATU) [82]. Among them, the ATU is directly affected by the PU and PEOU. PEOU directly defines the PU, while both PEOU and PU are affected by external factors. This study uses this relatively complete version to construct a conceptual model.

For the drivers and barriers found in this study, four of the five drivers can be found, including reducing costs, improving service quality, helping to develop marketing activities, and supporting decisions involving the benefits of AI applied by retail enterprises. In other words, they affect the perceived usefulness (PU) of the model. In contrast, perceived ease of use and lack of talent are related to perceived ease of use: they negatively affect PEOU. In addition, the uncertainty of returns and cost of the two factors are mainly effective in the steps of Attitude Toward Use to Behavioral Intention to Use. Ultimately, the digital environment, as well as organizations and cultures, are effective between BIU and AU. This therefore lingers in the following concept map Figure 2 (where drivers and barriers are represented by + or - respectively):

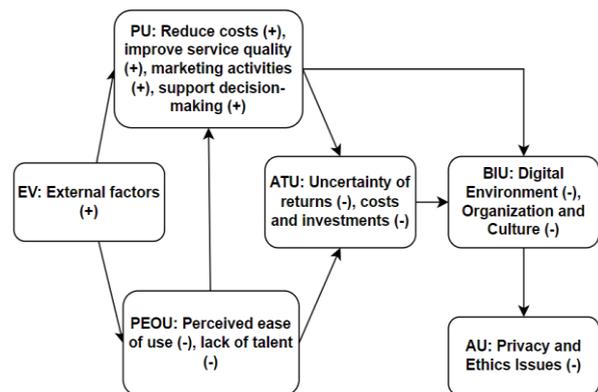


Fig. 2. Concept map.

IV. CONCLUSIONS

A. Conclusion

In summary, this study aims to systematically explore the drivers and barriers to AI adoption in retail enterprises and conduct a systematic literature review of English academic peer review articles published between 2015 and 2025. Ultimately, the results of the study illustrate several drivers, including reducing costs, improving service quality, marketing activities, external factors, and supporting decision-making. In addition, seven major barriers were identified, including perceived ease of use, uncertainty in returns, lack of talent, digital environment, investment and cost, data privacy and ethics issues, and organization and culture. Based on the abstract of these factors, this study also developed a conceptual framework to describe the mechanisms in which driving and impediment factors take effect.

B. Value and Contribution

As research value, in terms of theory, although there is currently a large amount of literature on human acceptance of artificial intelligence, they are fragmented. This study provides a systematic search and summary of these literature, and thus provides a basis for subsequent research. On the other hand, in the face of AI development trends, in practice, managers and executives of retail companies must determine and evaluate the company's technological development strategies, to effectively detect rapid changes in the changing internal and external environment, while investing more in the development of these technical skills. For these businesses, this study helps them revisit their AI adoption plans and effectively eliminate obstacles they face.

C. Limitations and Future Research

This study shows a series of significant contributions, but there are still several limitations and reveals future research directions. First, a systematic literature review (SLR) based on 32 studies may have search limitations, and some related studies may not be included due to the keyword matching mechanism. Due to strict adherence to keyword filtering criteria, literature that may have differentiated title expressions is under-covered. Secondly, the research lacks original data support, and there are shortcomings in revealing the practical details of the artificial intelligence application scenarios in the retail industry and the real experience of organization members. In view of these limitations, further research can be carried out from three dimensions in the future: (1) Deeply explore the specific practices of retailers in artificial intelligence applications through quantitative research methods, and reveal the dynamic relationship between technology adoption and value creation; (2) Application Empirical methods such as field research and case studies to verify the effectiveness of the drivers and obstacle mechanisms identified in this research based on real business scenarios; (3) Expand data collection channels, combine interviews and observations.

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