

# Research on the Impact of Intelligent Recommendation on the Behavior of Knowledge Payment Consumers

Lina Zou<sup>1,2</sup>

<sup>1</sup>The Software College, Shenyang Normal University, Shenyang, 110034, China

<sup>2</sup>Faculty of Management and Information Sciences, Josai International University, Chiba Togane, 283-8555, Japan

**Abstract:** With the rapid development of the mobile internet era and the continuous application of high-tech such as artificial intelligence, personalized intelligent recommendation has become an important marketing method for e-commerce platform enterprises to meet the diverse preferences of consumers. Against the backdrop of consumer upgrading and sharing economy, in line with the trend of internet development, various knowledge payment apps have emerged, providing users with new channels for knowledge exchange, free discussion, and enhancing their knowledge reserves. After experiencing rapid development, knowledge payment apps have fallen into difficulties such as homogeneous content, single form, and low repurchase rates. In order to accurately match one's preferences and solve complex information problems, intelligent recommendation systems were born. This system enables consumers to adjust product information, easily capture product decisions, and consume quickly. Personalized recommendations have a significant impact on consumers' purchasing behavior, as they help improve the performance of e-commerce platform enterprises. The application of e-commerce personalized recommendation systems has great development prospects, but there are also certain security risks and inaccurate recommendations that need to be improved. This article studies the impact of intelligent recommendations on consumer behavior from the perspectives of knowledge paying users, platforms, and content providers.

**Keywords:** Intelligent recommendation; Knowledge payment; Consumer behavior

## 1. Introduction

Knowledge payment refers to the payment for acquiring knowledge. Knowledge payment platforms mainly refer to platforms that help users capture, analyze, restructure, and apply knowledge, and dynamically and continuously organize content products according to user needs [1]. In the context of information redundancy and time fragmentation, with the development of national economy and the improvement of residents' living standards, a large number of free and low-quality Internet products have been unable to meet people's requirements for knowledge. In the era of lifelong learning, people's perception of knowledge has shifted from low quality to high quality, and from unwillingness to pay for high-quality paid products. From the perspective of users, knowledge payment behavior refers to the active payment behavior of users for purchasing information content and services to meet their self-development needs [2].

With the rapid development of the mobile Internet era and the continuous application of high and new technologies such as artificial intelligence, the market has met the diversified preference needs of consumers, while data surplus, information overload and other problems have followed [3]. In 2016, the Chinese government first proposed "supporting the development of the sharing economy and improving resource utilization efficiency". The sharing economy is based on information technology, building internet and mobile internet platforms to achieve profitability. Although the market size of knowledge payment in China continues to expand, the growth rate has slowed down since 2018, and the popularity of knowledge payment has decreased. In fact, it is facing the bottleneck of user payment. In recent years, the knowledge payment industry has shown a thriving development trend. In today's fierce social competition environment, people are increasingly demanding to use network resources and fragmentation time to obtain knowledge information to improve their self-worth. In addition, the arrival of the 5G era has made the online audio-visual industry continue to develop, and knowledge payment has great development potential. Currently, knowledge payment platforms mainly use knowledge

payment apps for activities such as knowledge dissemination, user communication, knowledge sales, and knowledge sharing. With the rise of consumption levels, most consumers have a vague understanding of their own needs, so they cannot accurately use search engines to find products that meet their personal needs. In this case, personalized recommendation systems have been added to knowledge payment platforms as an important tool to solve this problem [4].

In the context of intelligent marketing, personalized intelligent recommendation systems rely on high-tech technologies such as "big data+artificial intelligence" to deeply mine and analyze massive user data on mobile e-commerce platforms, mobile social platforms, and other platforms. The aim is to provide consumers with more accurate personalized goods and services, and to provide a more convenient and comfortable consumption experience for platform users. In order to better attract customer groups and enhance customer stickiness, knowledge payment platforms generally adopt intelligent recommendation systems based on user data, which will enable consumers to save time by analyzing their potential trends [5].

## 2. The Dilemma and Current Situation in the Development of Knowledge Payment

### 2.1. The Dilemma in the Development of Knowledge Payment

Knowledge payment is a paid knowledge transfer and sharing model in which knowledge producers use live streaming, Q&A, social media, and other methods to transmit knowledge to knowledge consumers in the form of audio, images, videos, etc. to meet their high-quality needs [6]. Since its inception in 2013, knowledge payment platforms have gone through a stage of emergence, development, and explosive growth. Currently, they are facing problems such as homogenization of content, low repurchase rates, and declining platform profits, which have hindered the further development of the knowledge payment model. With the development of the economy and the continuous improvement of people's income levels, the consumption level has gradually upgraded from pursuing material consumption to pursuing spiritual consumption. This provides an important user foundation for the production of knowledge paid products, and people have the consumption power of knowledge paid. In the era of mobile networks, the definition of knowledge content is not very clear, equating knowledge with information, presenting a form of widespread knowledge dissemination, causing some pseudo knowledge and entertainment information to flood knowledge payment platforms. After the combination of knowledge, capital, and the internet economy, in order to attract consumer attention, knowledge paid apps form a large traffic entry point, and various information flows into the platform, resulting in a mixture of platform information and a lack of deep and professional knowledge information. In the network economy, users can use fragmentation time for short frequency and fast learning, but this learning mode makes it difficult for consumers to form unintelligible learning cognition and carry out continuous, interactive and in-depth specialized research [7].

The penetration rate of paid sharing of knowledge among netizens has exceeded half, and there is still great room for improvement. According to a survey, 45.7% of users have paid for content, 20.8% of users have a willingness to pay, and 33.5% of users still do not intend or are willing to pay for content, as shown in Figure 1.

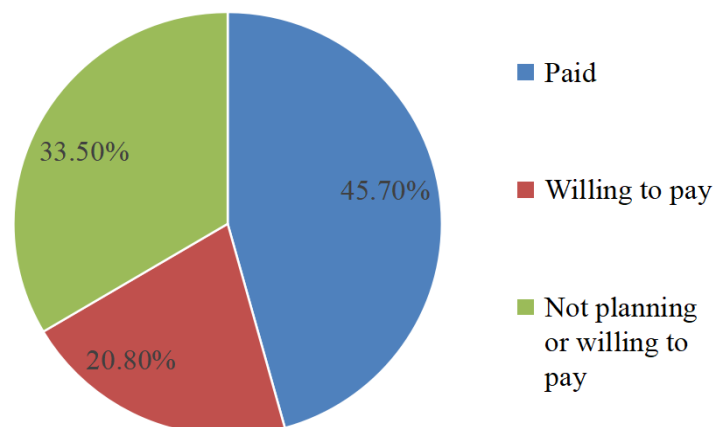


Figure 1: Knowledge payment survey

## 2.2. Current Situation of Knowledge Payment

Knowledge payment has become a phenomenon level industry in the cultural field in recent years, and many netizens in China participate in knowledge economy related activities every day. Among consumers who have experienced knowledge payment behavior, the majority of consumers expressed satisfaction with the experience, but there are also many users who expressed dissatisfaction. They could have found free ways to obtain the content they paid for. In the context of big data and mobile internet, traditional consumption models are no longer applicable to knowledge consumption platforms. The operation of knowledge payment apps based on the ISMES model has emerged. This operation involves three main entities: the knowledge payment platform, the content provider, and the customer (as shown in Figure 2), forming a circular relationship between the three, which constitutes the core elements of the knowledge payment platform. The ISMES model points out that consumer behavior under the mobile internet is a continuous circular process formed by five stages: interest and interaction, active search, mobile payment, experience perception, and user presentation. Consumer activities, through offline and online display and sharing, continuously stimulate a new round of consumer behavior, promote changes in marketing communication paths, and form a circular circular consumption model.

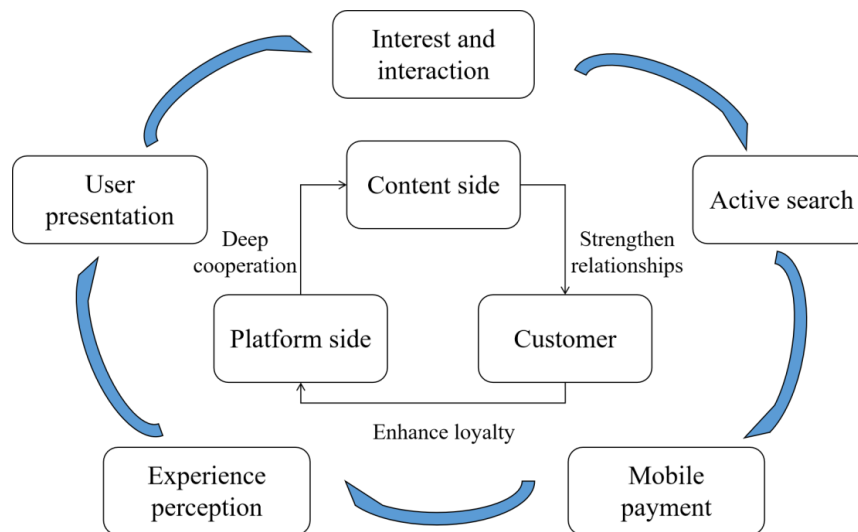


Figure 2: ISMES consumption behavior model of knowledge payment platform under mobile internet

But at the same time, knowledge payment has also encountered a bottleneck period. How to transform the pan entertainment of knowledge products into vertical and refined professional knowledge; Users have enjoyed a series of free bonuses for knowledge products in the early stage, and have turned to how to accept paid usage and subscription; How to solve the infringement of knowledge payment and protect the rights and interests of knowledge producers and users on knowledge payment platforms; In addition, the traffic dividend in the early stages of the development of the knowledge payment market has gradually disappeared, and platform revenue has decreased, which have become bottlenecks for the further development of knowledge payment platforms [8].

## 3. The Influencing Factors on the Behavior of Knowledge Paying Consumers

### 3.1. Intelligent Recommendations Affect Consumer Behavior

Intelligent recommendation systems in the context of knowledge paying consumers can be designed to consider several influencing factors that impact consumer behavior. These factors can be incorporated into the recommendation algorithms to deliver personalized and effective recommendations. Here are some of the influencing factors that can be considered:

**User Preferences and Interests:** Intelligent recommendation systems can take into account users' preferences, interests, and past behavior to deliver content recommendations that align with their specific knowledge needs. By analyzing user data and interactions, the system can understand individual preferences and make tailored recommendations accordingly.

**Learning Goals and Objectives:** Considering users' learning goals and objectives is crucial in intelligent recommendations. The system can take into account the desired skills, subjects, or areas of

knowledge that users want to focus on and provide relevant content recommendations that help them achieve their learning objectives.

**User Profiling and Demographics:** Intelligent recommendation systems can leverage user profiling and demographic information to understand the characteristics and backgrounds of knowledge paying consumers. This information can be used to deliver recommendations that are more relevant and relatable to specific user segments.

**Content Popularity and Trends:** Taking into account the popularity and trends of knowledge-based content can influence intelligent recommendations. By analyzing the popularity of certain topics or content among similar users, the system can provide recommendations that align with current trends and ensure users have access to up-to-date and relevant information.

**Learning Progress and Performance:** Intelligent recommendations can be tailored based on users' learning progress and performance. By analyzing user achievements, assessments, or completion rates, the system can suggest content that is appropriately challenging or complementary to the users' current level of knowledge.

By incorporating these influencing factors into the design of intelligent recommendation systems, knowledge paying consumers can receive personalized and relevant content recommendations that align with their preferences, goals, and learning needs. This, in turn, can positively impact their behavior, engagement, and satisfaction with the knowledge paying platform.

### **3.2. Individual Consumer Factors**

Personal income and quality of life have improved, and people are willing to invest corresponding monetary assets to obtain information of equal quality. The use of knowledge paid products by users is mainly based on high-level individual needs. Highlighting its time-saving, labor-saving, real-time and efficient characteristics, as well as pursuing a better quality of life and knowledge upgrading, has become a higher level demand for better oneself and a driving factor for users to choose to use knowledge paid products.[9]

Intelligent recommendation systems can take into account individual consumers' personal circumstances, such as their occupation, age, location, and lifestyle. For example, a recommendation system can consider a user's profession and suggest learning content that is relevant to their specific industry or job role. The level of interest a consumer has in a particular subject or topic can greatly influence their engagement with recommended content. Intelligent recommendation systems can analyze user interactions, preferences, and explicit feedback to understand individual interests and provide personalized recommendations aligned with those interests. Moreover, a consumer's existing knowledge level in a particular domain should be considered in recommendations. [10]

## **4. Conclusions**

With the development of the economy and the emergence of the era of big data on the Internet, intelligent recommendation has won the favor of consumers due to its convenient and fast advantages. Establishing a more comprehensive classification of knowledge product content in the development of the knowledge payment economy is the mainstream knowledge product content for content dissemination on future knowledge payment platforms. Knowledge consumption not only meets the needs of consumers, but also creates and guides new demands. As material life improves, people will inevitably pay more attention to higher-level personal development. The platform should highly cooperate with the content side, utilize big data technology based on user habits and preferences, capture user preferences based on user registration information, browsing habits, historical purchase data, and other information, locate target users, promote and disseminate through professional and high-quality content, and provide users with more matching content and knowledge products. Knowledge paid products should make efforts in product operation, optimize the interaction mechanism with users, expand communication channels between users, and make knowledge paid products not only a one-way knowledge transmission tool, but also enable users to realize their personal value, thereby enhancing the platform's influence. If knowledge paid products can improve and optimize existing problems while closely adhering to consumer demands, and continue to work towards improving platform infrastructure, optimizing user experience, and enhancing content efficiency, they may achieve significant positive development in the future, thus welcoming the spring of the knowledge economy.

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