

The Impact of Personalized Recommendations on Consumer Behavior in Social Media Platforms

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Abstract. Due to the growth of social media, customized services such as user generated content, product information and advertisements have become widespread. Social media uses algorithms to study users' Internet activities and other preferences, thus presenting the most appropriate information to the users. This trend has changed the way people obtain information about products and take purchasing decisions. The aim of this paper is to investigate the effect of social media's recommendation system on consumer's buying behavior. By reviewing the literature, the study evaluates the advantages and disadvantages of personalized recommendations. From the positive aspect, it improves the relevance of information, shortens the user's searching time, arouses the hidden demand and simplifies the shopping procedure. However, from the negative perspective, personalized recommendation systems might cause unnecessary purchases, raise worries about the security of personal information and result in "recommendation fatigue" because of continuous or repetitive contents. According to these points, this paper puts forward some suggestions for the platforms, the consumers and the regulatory authorities, such as: the platforms should improve the protection of user's data while offering high quality recommendations; the consumers should form reasonable consumption concepts; the regulatory authorities should set up standards and recommend suitable technologies to guarantee their proper application.

Keywords: Personalized recommendations, consumer behavior, social media platforms

1. Introduction

Due to the progress of digital technology and the extensive use of social media websites, personalized recommendation systems have gradually become an important method for linking users with relevant information. For example, on TikTok and Instagram, algorithms are applied to study the user's browsing habits, interaction histories and interest preferences, so as to provide precise content and advertisements. This data-based recommendation system not only affects the way users acquire information, but also indirectly influences their purchasing decisions.

The combination of individualized recommendations, short video contents and e-commerce functions assists the users in finding, assessing and purchasing products during the browsing process, thus reducing the time consumers spend on decision-making. During this procedure, the consumer's behavior has also changed. For instance, consumers often depend more on the

recommended materials when they make decisions and are more affected by emotional and situational factors which result in an increase in impulsive buying behaviour. Some previous research indicates that personalized recommendations and advertisements can greatly affect the consumers' purchasing intentions and behaviors. On the one hand, personalized recommendations enhance the purchasing efficiency and satisfaction of the consumers by increasing the relevance and usability of the information and lowering the searching cost for the users [1]. In social media advertisements, algorithmic personalization can also change the purchasing intentions of the users by shaping their views on creativity and authenticity [2]. On the other hand, the suggestion systems based on algorithms might induce impulsive buying behaviour of the users through emotional stimulation, perception of value or other means [3, 4]. Nevertheless, this effect is not completely beneficial; excessive personalization may cause privacy issues, intrusions and recommendation fatigue which decrease the users' confidence and influence their long-term experiences [5, 6].

This investigation is concerned with the influence of individualized social media suggestions on consumer purchasing habits. By employing a literature survey approach, the study will evaluate the current research and determine the effect of personalized recommendations on consumer purchasing behaviours. It will be examined from both advantageous and disadvantageous aspects and suggest solutions to these problems. The purpose is to promote the improvement of social media systems and help consumers make more reasonable purchasing decisions on the internet.

The arrangement of this research is as follows: In Part two, the changes in personalized recommendations and consumer consumption patterns will be discussed. In Part three, the effects of personalized recommendations on consumer consumption habits (both favourable and unfavourable) will be studied. In Part four, optimization proposals for the platform, users and relevant regulations will be presented. Finally, in Part five, the paper will be summed up and new directions for research will be foreseen.

2. The development status of personalized recommendations and user consumption behavior on social media platforms

2.1. The development status of personalized recommendations on social media platforms

Along with the rapid development of artificial intelligence, big data and machine learning, personalized recommendation systems have been widely used in mainstream social media such as TikTok, RedNote and Instagram. The platform continuously analyzes user behavior data such as browsing, likes, comments and stays, builds interest portraits, and realizes accurate push of content and products. At present, personalized recommendation has been upgraded from auxiliary function to platform core mechanism, which has become a key means to enhance user stickiness and business transformation [1, 7].

From the perspective of application scale, the recommended technology covers the whole platform. With content streaming as the main platform for short video, social e-commerce focuses on product and advertisement recommendation, which has become an important bridge connecting users and consumption information. The algorithm continues to iterate, from collaborative filtering to deep learning, and the recommendation is more accurate [8]. The scene is also constantly expanding, realizing the deep integration of content, advertisements and commodities, and promoting the natural occurrence of consumption [2, 9].

In terms of effectiveness, personalized recommendation greatly improves information efficiency and reduces user screening costs. At the same time, it also shortens the consumption decision-

making path, promotes the growth of online consumption, and helps the platform to evolve into the integration of content and consumption [1].

2.2. Current situation of user's consumption behavior

In the context of the popularity of personalized recommendation, users' consumption behavior has changed significantly. Online consumption habits have become the mainstream: social media has become the core scene of information acquisition, decision-making influence and even transaction completion. The "content-driven consumption" model is becoming more and more common [9].

Consumer behavior possesses three characteristics. First of all, the decision-making procedure is very individualized. People rely on the system for proper suggestions which can decrease the time spent in searching and comparing and enhance efficiency as well as increase the dependence on platform [2]. Secondly, the purchase rate has significantly increased. The regular updates allow users to have frequent contact with the consumption environment and the random and immediate purchases also contribute to this [3]. Furthermore, impulsive buying is more noticeable. Emotional materials like short videos and live broadcasts can easily stimulate the desire to buy quickly, especially among the young people [4, 10]. At the same time, the recommended results are more appropriate to the users' interests, and it is convenient to build an 'information cocoon', thus forming a single consuming habit. In summary, personalized recommendation is continually modifying the consumer behavior and promoting the purchase.

3. Specific impact of personalized recommendation on consumer behavior of social media platform

3.1. Positive effect

Stimulate consumer demand and promote consumption growth. Personalized recommendation can not only meet the existing needs of users but also stimulate potential consumer demand to some extent. Through in-depth analysis of user behavior data, the platform can predict users' interest trends. And through personalized push and scene content display, guide users to generate new consumption desires. For example, in the short video platform, goods are often presented in the form of "lifestyle" or "usage scene", which makes users have the motivation to buy in the entertainment process [9]. The existing research shows that personalized advertising can enhance impulse buying behavior by enhancing users' perceived value, such as emotional value and social value [3]. Meanwhile, the accuracy, relevance and timeliness in personalized recommendation will further promote consumer behavior by stimulating "urge to buy" [4]. As people make purchases quickly, they show a tendency towards speed and repeated buying. Therefore, personalized recommendations will improve the users' habit of buying repeatedly. The consumption quantity and frequency will considerably rise when users are always provided with information about items that match their preferences.

Enhance the consumption feeling and raise the possibility of customers staying. Personalized recommendations remarkably improve the consumption feeling by always providing information and goods that suit the customers' preferences. On the one hand, the good compatibility of the recommended information will make customers feel more satisfied when browsing, thus improving the entire experience [2]. On the other hand, personalized recommendations can increase the novelty and credibility of the information and also increase the positive attitudes of the customers towards the system and advertisements. This will induce the customers to have more purchasing intentions

[6]. In the field of social media, personalized recommendations are often used together with short videos and live streaming etc., to make the consumption process more interesting and attractive. For example, in the live streaming of TikTok and so on, the customers participate in the interaction while observing the information and become motivated to make purchases due to their emotions. This kind of immersive consumption experience can greatly increase the customers' persistence on the system [10]. In the end, personalized recommendations will cause the customers to gradually depend on the system by repeatedly strengthening the customers' experience, which is advantageous for promoting continuous consumption and retaining the customers.

3.2. Negative effect

Cause excessive consumption and impulsive consumption. Although personalized recommendation can promote consumption, its overuse may also lead to an increase in irrational consumption behavior. The platform constantly pushes high-attractive goods and creates consumption scenes, so users are easily stimulated to make an instant purchase impulse, which makes them make consumption decisions without full comparison and rational judgment [11]. Studies show that personalized recommendation enhances users' impulse buying tendency through emotional stimulation and value perception. Particularly in the short video and live broadcast environment, emotional arousal has a significant impact on consumer behavior [10]. In addition, the continuous push mechanism of the recommendation system will make users repeatedly contact similar products, thus continuously strengthening their purchase intention and even leading to excessive consumption. Although this algorithm-based purchasing habit can increase the platform's revenue in the near future, it may also cause economic burden to the consumers and the difficulty in controlling the consumption.

Violating users' privacy and decreasing consumer trust. Personalized recommendations depend on the gathering and examination of user information. Thus, although the accuracy of the recommendations is improved, there are also privacy risks involved. When users utilize the system, their browsing habits, interest inclinations and even personal information will be registered and studied, which might cause worries about the security and privacy protection of the users [5]. From the consumers' point of view, they compare the "advantages" (e.g., convenience and relevance) with the "dangers" (e.g., privacy infringement) when using personalized services, a situation called "privacy calculation". If users consider the privacy risks to be high, their confidence in the system will decline, which consequently influences their purchasing behavior [6]. Precise recommendations may make users feel supervised, resulting in a stronger feeling of being intruded upon. Such a bad experience might make users dislike the system, and reduce their usage frequency, thereby affecting their long-term consumption.

Generate recommendation fatigue and decrease the desire to accept new information. If the suggested materials are monotonous or of low quality, it is likely to cause the users' recommendation fatigue. As the recommendation system usually recommends based on the users' previous actions, the users may receive the same type of information repeatedly, resulting in a lack of novelty and interest. Previous studies show that moderate repetition of recommendations can enhance the users' memory. However, excessive repetition is regarded as a disturbance and causes negative feelings and aversion in the users [5]. Furthermore, if the recommendation frequency is very high or the content lacks variety, the users might experience information overload and reduce their attention to the recommended materials. In addition, annoying recommendations may affect the users' attitude towards advertisements, leading them to reject the recommended items and thereby lowering their

purchasing intention [6]. Therefore, recommendation fatigue not only affects the user's feelings but also has a bad influence on the long-term business of the website.

4. Suggestions for optimizing personalized recommendations and guiding rational consumption

From the previous analysis, people can see that personalized recommendation improves consumption efficiency and promotes consumption growth, but it also brings some problems such as impulsive consumption, privacy risks and recommendation fatigue. Therefore, it is necessary to put forward targeted optimization suggestions from the platform, users and regulatory levels in order to achieve a balanced development between personalized recommendation and rational consumption.

4.1. Platform level

Improve the recommendation algorithm and increase the accuracy of the recommendations. Social media sites should continue to optimize the recommendation algorithm model. At the same time, the number of inaccurate and repeated recommendations should be reduced to lessen the information burden for the users. On the one hand, the platform can enhance its ability to recognize users' preferences by utilizing multiple types of user data to make more appropriate content matches [1]. On the other hand, diversity factors should be incorporated into the recommendation system to avoid the influence of users' past behaviors. This can prevent the "information cocoon room" phenomenon and provide users with more different kinds of information [2]. The platform can change the recommendation strategy to achieve a proper balance between the relevance and novelty of the recommended results, which will improve the exploration experience and satisfy the users' demands. Thus, it will be beneficial not only for the users' satisfaction but also for the long-term development of the platform.

Balanced between the commercial objectives and the user's satisfaction. During the commercial procedure, the quantities of advertisements and product recommendations should be determined properly to avoid making the users feel tired or annoyed because of too much promotion. It has been found that suitable individualized recommendations can enhance the user's participation, but too many recommendations may result in disturbance and decrease the users' trust and desire to use the system [5]. Therefore, the system should distribute the content recommendations and commercial recommendations reasonably to prevent the advertisement contents from occupying too much of the users' attention. Moreover, efforts should be made to integrate the content and commodity recommendations better. For instance, the commodity information can be introduced through relevant content, which will make consumer behaviour more natural. Thus, the business transformation can be accomplished without deteriorating the user's experience [9].

Improve the privacy protection mechanism and enhance the trust of users. The effectiveness of personalized recommendation is based on user data, so the platform should attach great importance to the protection of user privacy. Initially, rules must be established for the acquisition, preservation and utilization of data, specify the area of data application and prevent the collection of unnecessary personal information [6]. Secondly, the system should enhance its algorithmic transparency. For instance, the system can offer a 'Why is this content recommended' choice, so that the users can know the reason for the recommendation [2]. Furthermore, users need to have more opportunities to manage their privacy, enabling them to change the recommendation strength or turn off the personalized recommendation themselves, which can increase the users' confidence in the system.

This user-centered privacy protection method is advantageous for a proper balance between personalized recommendation and users' rights.

4.2. User level

Cultivate reasonable consumption habits. People should improve their self-discipline and prevent impulsive purchasing induced by the overwhelming influence of suggested contents. Since social media frequently arouses the desire for consumption by means of emotional impact and scene presentation, one should make rational judgments when encountering suggested contents and make decisions based on their real needs [10]. One can also enhance the reasonableness of consumption decisions by postponing the decision, comparing various commodities and fixing the consumption budget, in order to decrease unnecessary expenditures. This reasonable consumption habit is beneficial both for personal finance management and for reducing the excessive influence of the algorithm recommendation on consumption behavior.

Improve the knowledge of privacy protection. People need to take into account the safety of their information while enjoying the advantages of the individualized suggestions. They should acquire the usage rules of the system and manage the privacy rights properly. For example, users can turn off the unnecessary data gathering choices or restrict the individualized advertisement functions [5]. Moreover, users ought to recognize the risk of information leakage and avoid the disclosure of personal details on the system. By enhancing the knowledge of privacy protection, the possible dangers resulting from the individualized suggestions can be decreased to a certain degree and a safer shopping atmosphere can be established.

4.3. Regulatory level

Improving relevant regulatory policies. The government and relevant regulatory agencies should formulate and improve laws and regulations on personalized recommendation and data use, and clarify the responsibility boundary between social media platforms and businesses. For example, the data collection scope of the platform should be standardized, and excessive data utilization behavior should be restricted. Also, it is important to strengthen the punishment for privacy disclosure and data abuse. Meanwhile, regulators should strengthen the supervision of personalized advertisements and recommended content. In this way, false propaganda and misleading recommendations can be prevented, thus protecting the legitimate rights and interests of consumers. Through institutional constraints, platform behavior can be standardized to a certain extent, and the negative impact can be reduced.

Strengthening industry guidance and standardization development. Besides legal supervision, people should also promote the standardized development of personalized recommendation technology through industry self-discipline and policy guidance. Relevant institutions can formulate industry standards and encourage platforms to take into account user experience and rights protection while pursuing commercial interests. In addition, people should advocate the development concept of "technology for good". It can guide enterprises to consider social responsibility in algorithm design and avoid realizing short-term benefits by over-stimulating users' emotions. Through this multi-party cooperation, people can realize the benign interaction between personalized recommendation and rational consumption and promote the sustainable development of the digital economy.

5. Conclusion

This paper uses the method of literature analysis to systematically sort out the influence mechanism of personalized recommendation of social media on users' consumption behavior. The paper first analyzes the development status of personalized recommendation and points out that it has become an important means to connect users and consumer information, which is deeply integrated in content communication and e-commerce scenarios and has many influences on consumer behavior. Research shows that personalized recommendation has a significant positive effect. This includes reducing information cost, shortening decision-making path, stimulating potential demand, and improving consumption efficiency and user stickiness. However, it also brings negative effects, including impulsive consumption, excessive consumption, privacy risk and recommendation fatigue, which weakens users' trust. In this regard, this paper puts forward suggestions from the platform, users and supervision: Optimize the platform algorithm, balance business and experience, and strengthen privacy protection; Users enhance rational consumption and privacy awareness; Supervise and improve laws and regulations, standardize platform behavior, and promote the healthy development of recommended technologies.

In summary, personalized recommendation indeed is of great value in promoting the development of the digital economy and improving the convenience of consumption. However, its influence is twofold. Future studies can further analyze the differences between different platforms and different user groups with empirical data, in order to understand the long-term impact of personalized recommendation on consumer behavior more comprehensively. At the same time, how to achieve a balance between technological innovation and user rights protection will also become an important direction for follow-up research.

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