# The Influence of Content-Based Recommendation Algorithms in New Media—Mainly Focusing on Young People in College

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*Abstract:* The content-based algorithmic recommendation mechanism of new media has brought immeasurable impact to users, which liberates users from the vast ocean of information and can efficiently obtain the content they want. But this algorithmic recommendation also brings many negative effects, especially for the young people who are mainstream users of new media. Therefore, the purpose of this study is to explore the impact of algorithm technology on young users. The research question of this paper is: how does new media algorithm recommendation affect young people? This study mainly takes the undergraduates of a Chinese University and three YouTubers as the research sample and explores the impact of algorithm recommendation on them through questionnaires and online interviews. Through the analysis of the data, it is found that the algorithm recommendation of new media has a certain negative impact on young people. Specifically, the algorithm recommendation mechanism allows them to enter the information cocoon room, wastes their time, causes unnecessary impulse consumption, and increases the anxiety of young content creators.

*Keywords:* Algorithmic Recommendation; Communication Technology; Digital Media

## Introduction

On the one hand, algorithms save users' time cost and filter out the content they are not interested in. However, on the other hand, the algorithmic recommendation mechanism can easily let users enter an information cocoon. What is more, driven by commercial interests, some network platforms will also promote users' impulsive consumption. All these have undoubtedly brought a lot of trouble to users. In this study, 50 students in a university in China and 3 young youtubers will be surveyed by questionnaire and online interviews to explore how new media algorithm recommendation affects them and their views on these impacts. The research topic of this paper is the impact of the new media algorithm recommendation mechanism on young people. The research question is what negative effects algorithms recommendation brings to young users? The purpose of this study is to make users in the new media era aware of the negative impact of algorithm recommendations, so as to cultivate their independent thinking ability and become the master of the new media rather than being controlled by it.

## Literature Review

Some scholars believe that algorithmic recommendation of new media is beneficial to users as new technology, others focus more on the negative effects of algorithm recommendation, which can also be divided into many categories. First of all, algorithmic recommendation breaks traditional journalistic professionalism. Carlson (2018) believes that journalists in traditional media have a strong human orientation when choosing news, but the algorithm is objective in nature, which can release information according to users' personal preferences rather than reporters' personal interests. However, this objectivity was opposed by Sadhasivam et al. (2014), who thought that the algorithm seemed objective and neutral, but in fact, it implied the bias of developers. The content-based algorithm recommendation mechanism of new media has a strong personal subjective bias in algorithm programming, data collection, regulatory review, and so on, which makes algorithm recommendation no longer neutral.

The algorithmic recommendation will also make private customized content services more and more perfect, that is to say, it will accelerate the differentiation of social unity, which is considered by many scholars to be important harm brought by new media algorithmic recommendation. McLuhan (1964) believed that the whole world would become a global village under the action of the

media. According to different interests, people will be divided into different tribes, which has led to another tribalization of human society. Undoubtedly, algorithm recommendation in the new media era will greatly accelerate this tribal process. Sunstein (2008) believes that algorithm recommendation will only continuously accumulate personal experience, but the common experience of social members will continue to decrease, which leads to the lack of common public topics that is the basis of democratic life. Therefore, algorithm recommendation affects the democratic mechanism of the whole society at a macro level.

From a more microscopic point of view of individual members, the content recommended by the algorithm lacks the strict censorship system as that of traditional media, which will also allow many users to receive some harmful information. Due to the group differentiation formed by personalized customization, the new media lacks the ability to strictly control the quality of information as a whole, which will also make society more tolerant of harmful information and news, thus destroying the moral level of the whole society. Ananny (2016) believes that the original intention of algorithm recommendation design and use is ethical, but now it has obviously gone against the original goal, so it should be abandoned. Kohlmann (2018) believes that auditing in the new media recommendation mechanism should be strengthened, and he especially emphasizes that manual auditing should be added to ensure the quality of the content recommended by the algorithm. Therefore, in general, algorithm recommendation will have a certain destructive effect on democracy and moral concepts formed in the whole society.

Meanwhile, there is also a group of scholars who believe that we should not be overly hostile to algorithm recommendation technology and underestimate individual autonomy because algorithms are incomplete and human subjectivity has always existed (Sunstein 2008). So the public should trust their independent thinking ability. However, this view does not propose an effective method to solve the harm brought by algorithm recommendation at present. It is passive and useless to rely only on confidence in individual subjectivity.

Throughout the above literature review on algorithm recommendation, there are many studies on its negative impact, which are concentrated in the macro field, and most of these studies are based on theoretical deduction, lacking certain factual support, which leaves room for the study of future research. This study focuses more on the negative impact of new media algorithm recommendations on young people because they use new media the most frequently and in the largest number. Secondly, this study will obtain the original data through online questionnaires, which also provide detailed support for the conclusion.

## Methodology, result and discussion

This study mainly adopts online questionnaires to obtain research data and uses quantitative and qualitative methods to analyze these data and draw conclusions. The sample selected in this study are 50 students from Wuhan University of Technology in China and 3 Youtubers. These students are current students from the second year of university to the third year of master's degree, including 25 males and 25 females. In order to protect the privacy of the three Youtubers, their detailed identity information will not be displayed here. Their names will be replaced by A, B and C respectively and the creative fields of these three Youtubers are game (A), beauty (B) and current affairs politics (C). After the survey, the questionnaire was submitted anonymously, and the interviews with the three bloggers were collected by category according to their fields.

According to the survey results' data of the questionnaire, it can be seen that the survey results are basically consistent with the assumptions of this study, that is, young people believe that the negative impact of new media on them is far greater than the positive impact, and only two people believe that the positive impact of new media content algorithm recommendation is more than the negative impact. However, it is worth noting that 64% of the respondents said that they did not know whether algorithm recommendation was more beneficial than harmful to them or vice versa, which indicates that many students may still view that algorithm recommendation, as a new thing, has two sides, and cannot clearly distinguish between its positive and its negative impact. On the other hand, it may also indicate that most students have not considered this issue carefully.

Although many of the respondents do not know whether algorithm recommendation is beneficial or harmful to them, they clearly know that this technology permeates all aspects of their lives. It can be clearly seen that only 4% of the respondents believe that they have a weak sense of dependence on new media, which shows that new media is an indispensable part of young people's lives. When asked whether they found that the content recommended by the new media was what they were interested in, as many as 84% of college students answered yes, and 56% of the respondents think that there are few contents inconsistent with their ideas in the use of

new media. In addition, 28% of the respondents have not considered this issue, which indicates that more than 56% of the users may recommend content consistent with their ideas. This also proves that new media is building a huge information cocoon for young people, which makes them only see things consistent with their ideas. Although it is not sure whether these students have the consciousness of criticism and reflection to break through new media for them, however, considering the time these students use new media every day and their dependence on new media, it is easy to infer that the algorithm recommendation of new media will greatly increase the probability of young people entering the information cocoon.

The consequences will be very serious once the young people of a society enter the information cocoon, especially college students. Firstly, it will make them lose the ability of critical thinking and tolerance that are just necessary to promote social progress. Specifically, when young people are surrounded by homogeneous information all day long, they will mistakenly believe that this is the way the whole world is. Secondly, when they leave the virtual world occasionally, they will find that there are different voices from themselves in the real world, which is often difficult for them to accept. Because in their cognition, most people hold the same views as them, and those who hold different views are likely to be a minority of heretics, and vice versa. This will lead to a lack of an atmosphere of mutual tolerance in the whole society. Unexpectedly, only 42% of the respondents believe that social media and other online platforms can bring them a sense of belonging more than the real world, which shows that most students can still identify with the value of real life from the heart.

From the survey results, new media really wastes a lot of valuable time for young people. Although only 24% of people spend 5-8 hours a day on new media, the rest spend less than 3 hours a day in the virtual world. 3 hours a day is also quite a long and valuable time for students receiving higher education in universities, let alone more than 5 hours. It can be seen that new media occupy most of the leisure time of college students' lives, which could have been used to exercise and socialize in the real world. Although the questionnaire does not show the relationship between algorithm recommendation and the attractiveness of new media, most participants are aware of the existence of algorithm recommendation, and nearly half of them believe they can find a sense of belonging in new media, which shows that the important reason why young people can spend so much time on it is that they can find the same ideas and contents they are interested in new media.

Finally, commodity recommendation and impulse consumption are also important negative effects brought by new media algorithm recommendations. 76% of the respondents received commodity recommendations from new media. The commodities recommended by them were precisely targeted by algorithms, which is a prominent feature of business activities conducted on Internet platforms. This is not conducive to the rational consumption of young people who are at an age of impulsivity and weak self-control. Therefore, 32% of the respondents have had impulse consumption on the Internet, and algorithm recommendation must play an important role. After all, it can accurately present the goods that the user is interested into his eyes at the most appropriate time.

According to the online interviews with the three Youtubers, Youtuber A believes that the algorithm recommendation mechanism makes him have to appear in a state of excitement during the live broadcast of the game, even with slight swearing. Youtuber B views that she must exaggerate the role of beauty products to promote her videos. Youtuber C believes that he must actively create some topics or conflicts to attract more traffic.However, these are not what the three Youtubers willing to do. Therefore, it can be found that their creations must meet the requirements of algorithm recommendation in order to get more promotion, which also affects their creative freedom and causes their creative anxiety.

## Conclusion

The results of the questionnaire show that the content-based algorithm recommendation of new media has indeed brought many negative effects to young people, although some young people have not realized or thought about this issue. The algorithmic recommendation can easily let young people enter the information cocoon room, thus losing their ability to question and contain, which is also not conducive to the development of the whole society. New media can also allow college students to spend more time on the virtual platform through accurate recommendations, which could have been used to do many other meaningful things. The algorithmic recommendation will also cause impulsive consumption among young people. These are the negative effects of algorithm recommendations on young people. Similarly, algorithm recommendation also brings creation anxiety to young content creators, making them unable to create works freely according to their own wishes. However, it is also worth noting that the two variables of

gender and youth are not analyzed in detail in this study, and further research is needed in this regard. Secondly, this study does not directly prove that algorithm recommendation is related to college students waste of time on new media and their impulsive consumption. The relevant conclusions are drawn through reasoning. Therefore, we need to design the questionnaire more rigorously in future research. Similarly, we also hope that young people can be aware of the negative impact of algorithm recommendations and actively cultivate their ability to criticize and reflect in the new media era.

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