

# Analysis and Optimization Of Recommendation Mechanism and Content Creation in Social Media Platform: A Case Study of TikTok Tourism Short Videos

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**Abstract.** The influence of the videos on the TikTok platform is gradually increasing. Short video platforms disseminate messages that allow users to learn more about the phenomenon and influence their decisions to some extent. This paper investigates the differences between popular tourism short videos created by personal accounts and those created by official cultural and tourism accounts on the TikTok platform in China. Then, it explores the recommendation mechanism and content creation for this type of videos. The study finds that the recommendation mechanism for tourism short videos on the TikTok platform needs to be optimized to achieve further promotion. In addition, the study discovers that the types of videos users preferred were travel tips and food recommendations. This study serves to help enable tourism short videos to be better pushed to the exact audience and enhance the decision-making impact on the users.

## 1 Introduction

Short video platforms occupy an essential position in social media. They not only provide the opportunity to establish social connections quickly but also through a variety of content to meet the interests of users, providing users with a lot of practical video content. Video media is gradually becoming a vital channel for accessing information. In previous studies, it has been shown that social media increases the possibility for users to constantly send and receive information by continuously enhancing the platform communication technology, thus making its use as a source of information more and more [1]. As traveling is an important segment that occupies human life, many users will obtain travel information and generate travel ideas through short travel videos. In recent years, social media has rapidly become an essential means of attracting tourists for promotional organizations in significant tourist locations due to its advantages of low cost, high impact, and high penetration. It is also an essential way for stakeholders such as tourism companies to acquire customers [2].

This study found through a search that almost all of the videos with more top data on social media platforms are videos created with individuals as the main body of the account

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rather than videos created with official cultural and tourism accounts. This phenomenon cannot help but raise questions in one's mind as to whether the created content of personal account videos with data at the top of the list is more prevalent among users compared to the data of official cultural and tourism account videos at the top of the list. Is this situation related to the short video content created by personal accounts and official accounts? In addition, the TikTok platform is constantly being updated with the introduction of a unique feature that displays the IP of commenters. When collecting comments on tourism-based short videos, the results show a higher frequency of local IPs in tourist destinations. Does this mean that travel-based short videos are pushed more towards local IP users? Does this indicate that due to the recommendation mechanism of TikTok, the user profiles of users with local IPs are labeled as being interested in videos with local IPs and are, therefore, pushed more often? By reviewing the relevant literature, research on IPs was not found, and there is a research gap, so this paper takes a preliminary look by analyzing the IPs of the reviews.

Meanwhile, in previous research, it has been found that videos generated by consumers and marketing organizations of attractions have different branding impacts on the destination, with users being more attracted to consumer-generated content but holding potentially more negative and irritating perceptions of it [3]. This paper, therefore, seeks to explore whether a similar phenomenon exists on the TikTok platform. In addition, the impact of tourism videos on the recommendation mechanism in terms of users' IP has yet to be addressed in previous studies. Therefore, this study can provide a direction for researchers to study the IP push of videos and help TikTok-type social media platforms understand the shortcomings of the recommendation mechanism of short videos in the tourism category and better optimize their recommendation mechanism. At the same time, it can also help the creators of tourism short videos optimize their video creations and have a better positive effect.

## **2 Methodology**

### **2.1 Research Methodology**

In this study, a mixed-method methodology was used to collect two types of data through two ways, thus conducting the study. The first is a questionnaire survey, which is distributed to users of the TikTok platform as a way to explore users' views on the TikTok travel videos themselves. The second is video recommendation attribute analysis, which crawls the comments under a total of nine representative TikTok travel videos, including the content and IP of the comments, using a crawler to analyze the user's focus on the video and the video audience on the social media platform. Combining the two types of data and analyzing them together provides a more comprehensive view of the study and contributes to a deeper understanding of the phenomenon under study [4].

The intention of using two methods of selecting different samples of videos for cross-analysis is that this study takes into account the fact that videos from different tourist locations do not promote the same content (characteristic differences in attractions, popularity of the city). Selecting personal accounts and official cultural and tourism accounts in the same locations will ensure that the attractiveness of the content of the two types of accounts attractions is the same when the content promoted is the same so that the differences between the two types of accounts in the rest of the world can be better compared. The first one, on the other hand, separately selects the videos of the two types of accounts that are at the top of the overall ranking, which allows for a more striking comparison of the differences in popular content between the two types of accounts.

## **2.2 Research Process**

In the quantitative study of the questionnaire survey, this study designed a total of 14 questions for the five aspects of the user's basic information, the use of TikTok, the preference for short videos on travel on the TikTok platform, the influence of travel decision-making, and the suggestion of improving the short videos on travel on the TikTok platform, which were placed and collected on the social media platform. A total of 116 questionnaires were collected after seven days of distribution, of which 111 valid questionnaires were obtained after screening with simple questions, so this study analyzed these 111 samples using descriptive statistics.

In the video recommendation attribute analysis, this study uses a brand new TikTok account to ensure that the account is not affected by the previous interest content and platform algorithm analysis, as well as to ensure the rigor of the data. This study collects work information, popular comments, and comment IP information from popular tourism works on the TikTok platform for relevant IP analysis and word cloud mapping. Finally, it combines the two to make summary data. This study chooses to use two methods to analyze at the same time to ensure the reliability and universality of the data.

The Method One is to analyze the personal accounts and official cultural and tourism accounts based on their categories of the same rankings. The top three videos with the highest likes on TikTok Personal and the three videos with the highest likes on official cultural and tourism accounts are collected and analyzed for comparison. The method can show the content universality of these two TikTok tourism broad category videos, as well as the style differences between them and the differences in the dissemination audience. Based on this premise, this study selected the three individual top-liked videos with locations Sichuan Chuanxi, Guangdong Zhuhai, and Fujian Dongshan Island, as well as the three official cultural and tourism accounts with the highest number of likes for Sichuan Cultural and Tourism, Shanxi Cultural and Tourism, and Chongqing Cultural and Tourism.

The Method Two is based on the analysis of data from personal accounts and official cultural and tourism accounts under the same tourism locations. The videos with the highest number of likes among the three personal videos are selected (because some of the three personal videos with the highest number of likes do not have corresponding local cultural and tourism accounts in some of the locations). The videos with the highest number of likes in the corresponding official cultural and tourism accounts in the locations of the attractions in these three videos are collected for analysis and comparison. The comparison of this method is a comparison of personal video and official cultural and tourism video dissemination of the same attraction, and a horizontal comparison can be made to conclude that in the same location, the personal video and official cultural and tourism content, style, and audience differences. Based on this premise, this study selected three personal top-liked videos in the locations Chongqing, Zhuhai, Guangdong, and Dongshan Island, Fujian, as well as three official cultural and tourism accounts of their corresponding Chongqing Cultural and Tourism, Zhuhai Cultural and Tourism, and Dongshan Island Cultural and Tourism.

## **2.3 Hypotheses of the Results of the Study**

First, in this aspect of TikTok tourism short video preference, users prefer tourism short videos with travel tips and food recommendations, and these factors are more likely to influence users' viewing of tourism short videos. In the aspect of tourism decision-making factors, it is assumed that the attractiveness of attractions is the most influential factor.

Second, it is assumed that TikTok platform tourism short videos push more user IP from the local IP of the video attractions, and there is little difference in the influence of personal videos and official cultural and tourism accounts videos on users' decision-making.

## 3 Results

### 3.1 Results of the Questionnaire Survey

In the questionnaire analysis, the following conclusions were obtained by studying 111 valid questionnaires on the use of TikTok. By investigating how often users use TikTok, it was found that most users use TikTok regularly, and the proportion of users who use it for 1-3 hours and 3-10 hours per week is relatively high, at 25.23% and 28.83% respectively. As for the viewing frequency of travel short videos, more than 40% of users will often swipe for this type of video.

Users' favorite travel short video content type is travel tips, with 23.53% of users ranking it first, and other users are also more fond of this type of video, ranking it higher and therefore receiving higher ratings. This was followed by food recommendation videos, which were ranked first by 18.63% of users, with other users also having a high level of favoritism. There are exceptional results in these data: 32.61% of users ranked Travel Vlog videos first, but their overall ranking was not high, and they did not receive high ratings, indicating that only some of the users love this type of video, while others do not like or are not interested in this type of video. Users ranked which type of short videos on travel they are more likely to trust, with 38.68% most likely to trust videos of fundamental experiences shared by individual creators and a reasonably high ranking among the rest. This is followed by testimonial videos from professional travel bloggers, which 25% of users are most likely to trust.

As for the promotion video made by official cultural and tourism accounts that have the most comprehensive information about tourist attractions, only 15.12% of users are most willing to believe it, which indicates that the promotion video made by official cultural and tourism accounts has the problem of not being convincing and not being accurate enough, which is unfavorable to the promotion of cultural and tourism videos. Among the factors that attracted users to watch travel videos more, the attraction of beautiful scenery ranked first, followed by travel tips, which were chosen by 79.28% and 74.77% of users, respectively, with not much difference between the two. However, of the factors that most influence users' travel decisions, there is no first place among the two. Number one is the authenticity of the video content, which is ranked by most users, thus earning it the number one rating. (Mean composite score for ranked options =  $\Sigma$  frequency multiplied by weighting/number of times this question was filled in)

### 3.2 Results of Videos Analysis

In addition to exploring the IP composition of users pushing short videos in the tourism category, this study launched an IP analysis of the comments of the selected videos.

In Method One, this study found that in all the videos analyzed (no IP information in the comments of the personal hit video of Dongshan Island in Fujian, so it was ignored), the percentage of comments with local IP addresses was the largest in all of them, which was the same as the predicted situation. In the top three personal videos, although local IP accounts account for a more significant proportion, they only account for 10% to 20% of the overall comments on the videos, and the overall IP distribution is more even. In the top three videos of official culture and tourism accounts, the proportion of local IP comments is more prominent, accounting for 30% to 40% of the overall video comments. The detailed data distribution of the comments of the videos of the two categories of accounts is as follows. In the category of individual popular videos, about 17% of the comments on the videos of Zhuhai in Guangdong are local IP comments; about 11.4% of the comments on the videos of Sichuan Chuanxi are local IP comments; and there is no IP information in the comments of the videos of Dongshan Island in Fujian. In the category of official cultural and tourism

videos, about 32% of the video comments of Sichuan Cultural and Tourism accounts for local IP comments; about 33.7% of the video comments of Shanxi Cultural and Tourism accounts for local IP comments; and about 39.5% of the video comments of Chongqing Cultural and Tourism accounts for local IP comments.

In the study through Method Two, it was found that the analyzed data were consistent with the trend of Scheme 1 (no IP information was available in the comments of the personal hit video of Dongshan Island, so it was ignored) and that the percentage of video comments with IP addresses that were local was the largest in all cases. The three videos with top personal likes accounted for about 20 to 30% of the overall video comments, with an even overall IP dispersion; in the corresponding three videos of official cultural and tourism accounts, the percentage of comments with IP addresses that are local is pronounced, accounting for about 40 to 80% of the overall video comments. In this study, the geographical distribution of comments IP is produced by taking Zhuhai individual videos and Zhuhai official cultural and tourism accounts videos as examples, as shown in Graph 1 and Graph 2. The detailed data distribution of the comments of the videos of the two categories of accounts is as follows: in the category of individual popular videos, In the comments of individual popular videos in Zhuhai, Guangdong, as shown in Graph 1, the local IP comments account for about 17%; in the comments of individual popular videos in Chongqing, the local IP comments account for about 22.4%; and in the comments of individual popular videos in Dongshan Island, Fujian, there is no IP information. In the category of official cultural and tourism videos, in the video comments of Zhuhai Cultural Tourism, as shown in Graph 2, the local IP comments account for about 77%; in the video comments of Chongqing Cultural Tourism, the local IP comments account for about 39.5%; and in the video comments of Dongshan Island Cultural Tourism, the local IP comments account for about 56%.



**Fig. 1.** IP Geographic Distribution of Personal Video Reviews in Zhuhai (Photo credit: Original)



**Fig. 2.** IP Geographic Distribution of Official Cultural and Tourism Video Reviews in Zhuhai (Photo credit: Original)



In addition to exploring the sentiment tendencies displayed by user comments, this study also carried out a word cloud graph analysis of the comments in the crawled videos. The word cloud graph produced in this study for Method 1, as shown in Graph 3, yielded the following results. In the comments of the videos posted by the official cultural and tourism accounts, the frequency of words related to the place is higher, e.g., "Chongqing," "Sichuan," and "Shanxi," and the videos are pushed more to the local users, who are more concerned with the video location itself than how to do the tour. However, in the videos posted by individuals, there was a higher frequency of words related to personal feelings, such as "thinking," "tears," and "travelling". Users pay more attention to the feeling of travelling presented in the video, and the video is pushed more to users who want to travel. Method 2 yields essentially the same conclusion for the word cloud graph produced by Method 2, as shown in Graph 4. (Although the word cloud of Chongqing personal videos has a high frequency of the word "Chongqing," it is analyzed as more of a cultural symbol, so it does not affect the results.)



Fig. 3. A word cloud diagram for Method One (Photo credit: Original)



Fig. 4. A word cloud diagram for Method Two (Photo credit: Original)

### 3.3 Hypothesis Versus Results

From the questionnaire analysis, the types of travel short videos that users prefer are indeed travel tips and food recommendations, which is consistent with research hypothesis one. This phenomenon shows that users pay more attention to the way they travel as well as the food in the place where they travel through the TikTok short videos platform. Among the factors that most attract users to watch short videos on travel, the attraction of beautiful scenery ranked first. However, among the factors that most influence users' travel decisions, contrary to research assumptions, the attractiveness of the attraction's beauty is not number one but is replaced by the authenticity of the video content, which suggests that the factors influencing users to watch travel short videos and influencing users to generate travel decisions are not equal. When users watch short travel videos, they are indeed attracted by the beauty of the scenery and stay to watch the video for this reason. However, they are not influenced by this to necessarily produce a travel decision. This phenomenon may be because the content of short videos is not entirely truthful; short videos can present the content in the form of filters or false propaganda.

From the analysis of video recommendation attributes, the users' IPs of travel short videos pushed on the TikTok platform are consistent with Hypothesis 2. However, personal videos have a more significant impact on users than videos from official cultural and tourism accounts, which is inconsistent with hypothesis two. Regardless of the videos selected in Method One or Method Two, the videos created by official cultural and tourism accounts and those created by individuals had the most significant percentage of local IP in their comments. However, the percentage of local IPs in video reviews created by official cultural and tourism accounts is more significant compared to the percentage of local IPs in video reviews created by individuals. While there is also a large percentage of local IP in the comment IP of individual videos, the overall IP of comments tends to be more homogeneous. This phenomenon indicates that the recommendation mechanism of tourism short videos on the TikTok platform tends to push more toward local IP users, which is unfavorable for the cross-regional promotion of tourist places. In terms of the impact of videos created by the two types of accounts on users' decision-making, this study concludes from the sentiment analysis of the comments that videos created by individuals are more likely to predispose users to make travel decisions than videos created by official cultural and tourism accounts. In combination with the conclusions drawn from the questionnaire analysis above, it can be obtained that videos created by individuals are more likely to favor the former in terms of the authenticity of content compared to those created by official cultural tourism, thus better-enabling users to generate travel decisions.

## 4 Discussion

### 4.1 Cause Analysis

The conclusion shows that short travel video content with food recommendations and travel tips is more attractive for users to watch. Some studies have shown that food-based short videos can increase users' attention to the destination, and they are more likely to influence users' emotional image of the destination and create a need to travel [5]. Food short videos can have a positive impact on users, who can feel pleasure and relaxation while watching these types of videos. The positive impact of food videos is that they are entertaining videos that the viewers can enjoy. In the case of short videos on travel tips, this likely is because such videos have a consumer orientation, showing a way of traveling that the user has not experienced, which stimulates the viewer to pay attention to and think about the way of travelling due to hedonistic motivations [6]. These kinds of how-to videos also amount to a

personal act of sharing, a blogger sharing his or her travel plans on a short video platform. The act of sharing enhances interactivity and can get positive feedback from the audience, which is one of the reasons why travel tips videos are a favorite [7].

In addition, this study also found that users trust videos created by individuals more than videos from official cultural and tourism accounts. This phenomenon may be related to the mix of true and false information on social media platforms. In recent years, some media may have the problem of false propaganda and do whatever it takes to attract tourists, resulting in users needing help to hold information about their destinations and affecting their travel decisions. This phenomenon may ultimately lead to a decline in trust in the destination and affect tourism development [8]. Personal videos are more objective than official travel videos because they are created by individual users, which can lead to a higher level of user trust.

Short video platforms have a significant impact on the tourism industry, providing a less expensive method of marketing a destination and offering many opportunities for tourist engagement to attract potential visitors to a destination [9]. These platforms will provide ease of access for tourist places to effectively share, market, and promote their content to their customers [10]. As official cultural and tourism accounts, the responsibility of local cultural and tourism accounts is not only to integrate, organize, and configure local cultural and tourism resources but also to play the role of local symbols and promote local culture. As a result of this positioning and responsibility, the official cultural and tourism videos are promoted to the majority of local users, who also comment more from the point of view of the "inhabitants". Personal accounts do not have the same responsibilities and restrictions as official cultural and tourism accounts, and they can present video content more casually and express their views and feelings more freely. As a result, their video style tends to cater more to the psychological needs of their audience and can attract more viewers.

## **4.2 Advice Provided**

The advantages of official cultural and tourism short videos are that they are official, authoritative, and have sufficient knowledge of the local area. The disadvantages are that most of the local cultural and tourism short videos need more innovation and be more exciting. If they want to improve the data, they can adjust the form of their videos and keep innovating to attract more viewers. It can take advantage of the official and sufficient knowledge of the local area and try to create official strategy short videos for the attractions, which will show the information of the attractions such as history and culture, natural landscape, and tour routes in an official, professional, and innovative way. In addition, it is possible to create distinctive and creative video forms, such as aerial photography, virtual reality, and other technologies, to bring viewers a new visual experience. It is also possible to enhance the influence of video communication by increasing the closeness of the connection with the users. It is possible to take advantage of the strong authority and encourage the audience to participate in the discussion and sharing by setting up topic labels and launching interactive challenges. At the same time, it is also possible to fully interact with users, answer their questions, and meet their needs in locations such as video comment areas.

The advantage of personal short videos is that the video is emotionally intense. If personal short video creators want to improve the data, they can strengthen the concentration of the emotional aspect, which is more able to stimulate the user's emotional response. Personal short videos are appealing largely because of their ability to convey strong emotions, whether they are joyful, sad, moving, or inspiring. Emotions are the bridge that connects the creator to the viewer. When viewers feel strong emotions in the video, they are more likely to be attracted, which in turn generates interactive behaviors such as sharing, liking, and commenting, thus enhancing the video's data performance. Strengthening the emotional



concentration of a video can be enhanced by storytelling narratives, emotional titles and descriptions, and choosing appropriate music.

As for short video platforms, adjustments can be made to the recommendation mechanism. The recommendation mechanism is one of the core competitiveness of the short video platform, which is directly related to the user experience and the dissemination effect of the content. Based on the research in this paper, the recommendation mechanism of the short video platform can be adjusted and improved to break through the limitations of the push location. More works can be pushed to the users of the IP in the provinces to realize the value of the tourism short video works and enhance the dissemination efficiency.

## **5 Conclusion**

In this study, a mixed analysis was conducted using both a questionnaire survey and video recommendation attribute analysis. In the questionnaire survey, this study found that users' favorite types of travel short video content are travel tips and food recommendations. Users are most willing to trust videos of fundamental experiences shared by individual creators. In contrast, only a tiny percentage of users are willing to trust promotional videos made by official cultural and tourism accounts.

In the analysis of video recommendation attributes, this study found that the percentage of comment IP addresses that are local is the largest among all the videos analyzed in this study. The official cultural and tourism accounts' videos were pushed more to local IP users compared to the videos created by individuals, and their video comments showed less of a tourism bias than the comments on the videos created by individuals showed. In the case of short personal videos, the videos may have more sharing attributes and interactivity or show emerging ways of travelling that appeal to users. In terms of official cultural and tourism short videos, such conclusions may be related to the true and false information of social media platforms, where some media have false promotional behaviors, which may indirectly lead to users' distrust of official short videos. These obtained conclusions play a guiding role in the improvement of short video content as well as the pushing mechanism of short video platforms.

This study will help content creators of all types understand the TikTok push mechanism, improve the direction of their videos, and enhance their video data. This will help TikTok and other social media platforms to be more precise with their push mechanisms.

It is also worth being mentioned that this study analyzed the accuracy of the push mechanism only through audience IPs and comments due to the inability to obtain more comprehensive data and the need for other finer data dimensions. Thus, in the future, researchers can continue to study how to enable short video platforms better to optimize the recommendation mechanism more and make it more reasonable, increase the user's experience and reliance on using the platform, and maximize the advantages of short video platforms. At the same time, future researchers can also provide professional advice to content creators of short video platforms from the perspective of the sound and picture of the video itself to help them improve their video data and better exploit the communication value of their published works.

## **Authors Contribution**

All the authors contributed equally and their names were listed in alphabetical order.

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