

Social Media, Quality Information, and Entertainment Services: A Case Study of Escape Stores in Hangzhou

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Abstract: In recent years, China's leisure and entertainment market have developed rapidly, with various board games and escape stores emerging in endlessly. Social media has become one of the important channels for the industry to disseminate high-quality information to consumers. However, whether social media convey valid quality information on entertainment services? What are the most frequently mentioned topics of entertainment on social media? We try to answer these questions by studying Meituan, the leading online platform for leisure and entertainment services in China. We use NLP technics to extract keywords from consumer reviews and conduct basic analysis on vouchers and discounts provided by stores. We find that the majority of escape stores' ratings are high(over 4.5), and the distribution of stores' ratings is a roughly J-shape. Moreover, except for the game instruction voucher, the other three vouchers' average discount is very similar. And we also find that consumers' review most frequently mention the scene of escape stores.

Keywords: Consumer reviews, Escape stores, Discounts, Vouchers.

1. Introduction

In recent years, games such as escape stores and board games are becoming more and more popular among young people. The escape store has gradually developed into an offline live-action game through foreign online puzzle-solving games. The contents of escape stores are rich and vary in terms of game rules, players, game props, story, etc. In 2019, the market size of China's escape stores industry approached 10 billion yuan, the number of industrial consumers reached 2.8 million, and the number of stores exceeded 10,000. The main participants in China's human closet escape store industry are consumers, which are divided into individual consumers and enterprise consumers, accounting for 70% and 30% respectively. Young people aged 20 to 35 are the main users of the escape store industry, accounting for 83.9% of the escape store players; Players aged above 35 account for 10.3% of escape store players. The escape store has developed into a fashionable leisure and entertainment project that people of all ages, especially young people, can accept and are willing to participate in.

Social media has become one of the most popular information channels to spread high-quality information to consumers. Among them, Meituan, founded in 2010, is one of the most famous online platforms in China. Meituan practices the corporate mission of "helping people eat better and live better" with the strategy of "retail + technology". Since its establishment in March 2010, Meituan has continued to promote the digital upgrading of service retail and commodity retail on the demand side and supply side. Its services cover catering, takeout, fresh food retail, taxi taking, bike sharing, hotel tourism, film, leisure, and entertainment. In 2021, the number of Meituan trading users was 690 million, up 35.2% from 510 million in 2020. The number of active Meituan merchants reached 8.8 million, up 29% from 6.8 million in the same period last year. At the same time, Meituan achieved an operating income of 179.1 billion yuan, an increase of 56% over the 114.8 billion yuan in 2020. Escape store is classified as leisure entertainment in Meituan. Consumers can get the

desired information on the platform including rating, geographical location, escape store's theme, price, etc. After consumption, consumers can evaluate and rate the store from the first level (lowest) to the fifth level (highest), and upload photos for evaluation for reference by other consumers. At the same time, some stores also provide booking and order-making services to facilitate personal consumption.

Despite the popularity of escape stores, critics questioned whether the stores provided by Meituan can meet consumers' preferences and whether the information is accurate. First, some shops on the platform have low scores or no consumers. The shop owner may, in turn, overly promote the service by doing false propaganda. Second, many stores provide online booking and require consumers to pay when making a reservation, but there is no guarantee of a refund. This may raise a series of problems. For example, if consumers are unwilling to continue to spend when they find problems such as exaggerated publicity when visiting the store, the shop owner will not refund consumers. Interestingly, most stores discount prices in the form of coupons. It remains unclear to the public whether the original prices are simply an illustration.

The goal of our research is twofold. On the one hand, we seek to investigate the current development of escape stores listed on Meituan. For example, what types of coupons are provided on the platform? What are the commonly mentioned topics of consumers' comments on the stores after consumption? On the other hand, we want to explore the service pricing strategy of the store on the platform, and whether each type of coupon has a similar discount.

2. Data Sources and Sample Construction

We collect data from MeiTuan, a well-known online review platform providing escape store's information to consumers. We choose the escape stores in Hangzhou and collect the information including store links, store names, store ratings, store location, coupon names, coupon prices, customer reviews, etc. We collect 164 stores listed on MeiTuan

associated with 732 coupons and 48,770 consumer reviews that were published from 2014 to 2022. We delete the stores without any reviews (40 stores) or without any coupons that sell (2 stores). We also delete duplicate coupons in the same store and a variety of non-meaningful reviews such as the same reviews from the same customer; only ratings but no reviews. Our final sample consists of 124 stores with 729 valid coupons (99.5%) and 30,147 reviews (61.8%).

3. Analysis

This section consists of three subsections that present the main analysis of Hangzhou's escape stores. In section 3.1, we mainly focus on basic information about listed stores including tickets, ratings, and discounts. In section 3.2, we utilize NLP techniques to extract keywords from reviews.

3.1. Characteristics of vouchers and ratings

In this section, we characterize the escape stores listed on Meituan via various aspects including stores' tickets, ratings, and the number of reviews. The average rating of these 124 stores is approximately 4.6, with only 9 stores' ratings below 4 points. There are 729 vouchers belonging to 124 stores. The tickets have differential functions for consumers and are classified into five types including escape room (e.g., various types of escape rooms with discounted prices), league construction (Offering to many people to participate in activities at a more favorable price), board and card games (e.g., games' voucher such as werewolf killing and billiards), voucher (Discount coupon: can choose the escape room, games, etc. which are not available in other types of coupons.), and game instruction (The explanation of some game rules cannot be used for consumption). The class of escape room accounts for the majority (about 67.6%) while the class of game instruction accounts for the minority (about 3.2%). Figure 1(a) illustrates the distribution of four classes of tickets provided by the stores.

More than a hundred stores provide escape room tickets and most of them provide less than 5 varieties of escape room tickets. Only 18 stores offer board and card games tickets while one store, known as the JINYI Theatre store, provides 14 different board and card games tickets. League construction tickets are provided by 57 stores and each of them provides less than 5 of this type of ticket. And around thirty stores provide voucher tickets and only seventeen stores offer game instruction tickets.

Now we take a look at stores' ratings, as illustrated in Figure 2. We find that the average rating of all stores was 4.6, of which 65 stores' rating is 5 (52.4%). And more than 78% (97) of stores' ratings are above 4.5. Only 9 stores are rated below 4 stars. The distribution of stores' ratings is roughly J-shape, which is quite different from the commonly observed U-shaped distribution in the literature. We conjecture this is due to the "silence of majority" issue.

We analyze the price and discount of each voucher. Figure 3 shows the average discount for five vouchers. The average discount rate is 0.6. Except for the game instruction coupon, the average discount of the other three coupons is very similar, the rate is about 0.6. Specifically, the average discount for the escape room is the same as that of the voucher, the league construction coupon is 0.62, and the board and card games coupon is 0.69. We also present the distribution of the stores' discounts in Figure 4. The average discount of 0.61 for 124 stores. The average discount of 64 stores is between 0.5 and 0.75, accounting for more than half. There are 29 stores with

an average discount of 0.75 to 1, 21 stores with an average discount of 0.25 to 0.5, and only 7 stores with an average discount of less than 0.25. It is worth noting that there are three stores with no discounts.

3.2. Stores' Reviews

On MeiTuan, customers can freely review and rate a store to express their feelings about this escape store. We take the following step to understand the information conveyed by reviewers' comments. First, we remove the reviews without textual content and obtain 30,147 reviews. Next, we apply the NLP techniques to better extract qualitative characteristics (i.e., the frequently mentioned topics) from the content of the review. For each review, we use JiebaR, a Chinese word segmentation tool, to tokenize the sentences and delete meaningless Stop words. We apply the NLP techniques to better extract qualitative characteristics (i.e., the frequently mentioned topics) from the text content of reviews. To get the probability of each topic appearing in each comment, we utilize Collapsed Gibbs Sampling Methods for Topic Models to match each review and topic's probability. We separate the comments with different stars and calculate the probability of keywords in the comments. We then manually classify them into four categories: scene, topic, service, and evaluation. The scenario category represents the keywords in consumer reviews to describe the environment, atmosphere, etc. of the store. The topic category focuses on the types of secret rooms provided by the store, such as terror, decryption, etc. The service includes the attitude of NPC and staff. The evaluation focuses on the experience of consumers and whether they will consume again. We find that regardless of star ratings, the most frequently mentioned category is the scene whereas the least frequently the topic. Figure 5 characterizes the average probability of different topics under different stores' ratings.

It can be seen from the above results that most consumers will comment on the scenes of the store (such as decoration, geographical location, etc.), then the evaluation of consumers, followed by the service of the staff, and finally the theme of the Secret Room.

4. Conclusion

The purpose of this study is to explore what services and products are provided by the escape stores in social media and whether social media convey valid quality information on entertainment services to consumers. To achieve this goal, we study the consumer rating, pricing policy, and basic information of stores on the Meituan platform, which is one of the leading online platforms focusing on leisure and entertainment services.

Our main findings are that most consumers rate the escape stores provided on the Meituan platform high (the average star number is 4.6), and the stores provide the most escape room coupons. Secondly, the consumer's post-consumption evaluation is mainly about the description and evaluation of the stores' scene, and different scores have little impact on the consumer's evaluation content. In addition, the discount strategy of the platform for product pricing varies a little from store to store, with an average discount of about 0.6.

Now more and more people are trying to escape stores, so stores can try to provide more consumers' favorite items and products, and to a certain extent discounts. At the same time, the platform should improve supervision, filter bad and invalid information, and provide consumers with more

accurate information. We believe that the platform can cooperate with the government to standardize its system,

which may be more helpful to the development of the platform and the escape store industry.

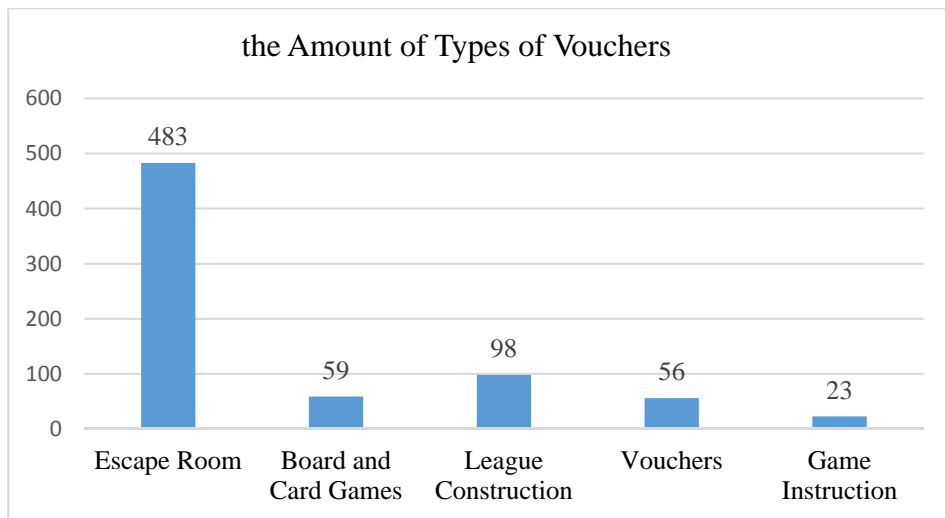


Figure 1. The Amount Types of Vouchers



Figure 2. The Distribution of Store ratings



Figure 3. The Distribution of Store Average Discount Rate

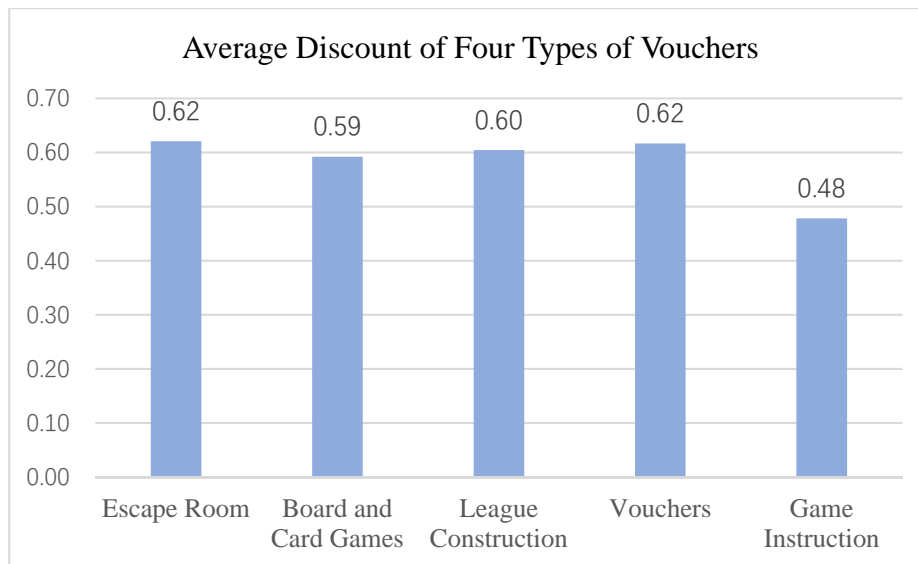


Figure 4. Average Discount of Types of Vouchers

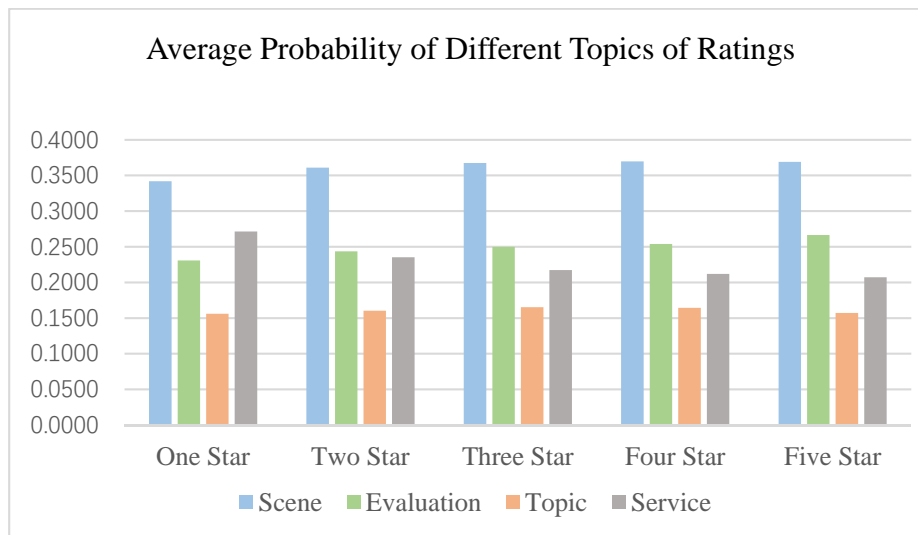


Figure 5. Average Probability of Different Topics of Ratings

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