

Empirical Analysis of User Preference Behavior in Chinese Mobile Game

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ABSTRACT :*In this paper, we analyze the preference behavior of Chinese mobile game users based on the survey data. We designed 11 questions related to mobile game users and surveyed 719 mobile game users. We find that, (1) The high satisfaction of users with MOBA and Role Play games indicates their preference for these two types of games. (2) There is no significant relationship between users' gender and their satisfaction with different games. (3) Users have good satisfaction with various mobile games. But with the increase of game players, users' preference for Role Play and MOBA games has risen.*

KEYWORDS - *Mobile Game; User Preference; Game types*

I. INTRODUCTION

In recent years, with the rapid development of science and technology in China, the scale of the Internet is still expanding. Data shows that China has nearly 1.1 billion Internet users, and the Internet penetration rate is 78%¹. According to QuestMobile data, in February 2024, the active user base of the mobile gaming app industry reached 650 million, with a year-on-year growth rate of over 12%². The panoramic traffic scale of the mobile gaming industry has exceeded 900 million, and the breakthrough growth is partly due to the growth stimulation of mobile gaming apps. In the gaming market, the profit of mobile games still dominates, and in the face of the promising development prospects of the mobile game industry, personnel in various industries are constantly exploring and committed to creating a game that customers love. However, the production of a good game requires multiple considerations, including game type settings, game experience optimization, and marketing strategy decisions, all of which will have an impact on the subsequent development of mobile games. In the current 5G

era, Chinese users' demands for games are also increasing day by day, and the trend of high-quality and diversified game development is becoming increasingly evident. It is precisely in this context that it is particularly important to grasp and analyze customers' preferences.

Some scholars have conducted research on user preference behavior in mobile games. GONG M. et al (2024) studied why players are willing to spend money to play multiplayer online role-playing games[1]. They found that advancement motivation and immersion significantly influence purchase intentions, with immersion being impacted by aesthetic design, customization, and sociability. SHI Y. et al (2024) discussed the interaction between mobile game experience and virtual community from the mechanism of influencing user satisfaction[2]. They found that in the context of mobile phones, both game experience and community interaction can positively affect users' satisfaction. High quality game experience can significantly improve users' perceived entertainment value. Strong community interaction can not only improve users' perceived entertainment value, but also improve users' overall satisfaction with mobile games. TQRIQ B. et al studied the relationship between addiction, loyalty and in-app purchases by using Stimulus-Organism-Response (SOR) framework[3]. The study found that user loyalty is an important intermediary factor

¹
<http://finance.china.com.cn/news/20240829/6159127.shtml>

²
<https://baijiahao.baidu.com/s?id=1796474369687116198&wfr=spider&for=pc>

to transform game addiction into app purchase.

In this paper, we focus on the preference behavior of mobile game users. First, we obtained the user preference data for the game through the questionnaire survey. Then, based on these survey data, we analyzed users' preferences for different types of mobile games. Next, we analyze the correlation between game types and user characteristics. Finally, we discuss the changing trend and influencing factors of game type preference.

II. MOBILE GAME CUSTOMER PREFERENCE SURVEY

2.1 User preference survey

The composition of a go Mobile game customer preference survey and attractive mobile game is multifaceted. The conclusion drawn from the establishment of the research model of the influencing factors of players' conversion intention in game distribution shows that the attraction of playing methods, game quality, theme and mobile game experience requirements are conducive to improving players' conversion intention. We will conduct a targeted survey of customer preferences in terms of game types, game experience and consumption patterns for the purpose of subsequent questionnaire production.

For a wide variety of game types, how to capture the popular is the key. Table 1 shows the average ranking of revenue from April 2023 to March 2024 collected from Qimai data 3 with revenue as the measurement standard.

Table 1 Average monthly income of mobile games

APP Name	Average Income
Honor of Kings	56852221
Game for Peace	49769582
Justice Online	42562215
League ff Legends: Wild Rift	24117719
Teamfight Tactics	23049795
Genshin Impact	22818252
Fantasy Westward Journey	22700155
Honkai Star Rail	20433276
Mehr Von DiesemEntwickler	20134772
Egg Puppet Party	18031916

³https://www.qimai.cn/rank/downincome/type/apstore_trend/entity_type/app/genre/6014/device/iphone/data_type/revenue/date/2023-04_2024-03

Based on the analysis of the top 10 mobile games, the analysis of each mobile game and its corresponding game types is shown in Table 2.

Table 2 Corresponding game types of each mobile game

APP Name	Types
Honor of Kings	MOBA
Game for Peace	Shooting and Competition
Justice Online	Role Play
League ff Legends: Wild Rift	MOBA
Teamfight Tactics	Automatic Combat
Genshin Impact	Role Play
Fantasy Westward Journey	Role Play and Turn Base
Honkai Star Rail	Adventure and Role Play
Mehr Von DiesemEntwickler	Strategy Game and Role Play
Egg Puppet Party	Competitive Category

From the analysis, it can be concluded that the types of mobile games can be roughly divided into five categories: MOBA (multiplayer online battle arena), i.e. multiplayer online tactical competition, Role Play, etc. In order to better study the selection of game types by gender in the future, this paper adds another type of game types, which are mainly female oriented, with a total of six types of game types. In game development, game experience is also an extremely important part, and the game experience needs to be constantly reflected in the dynamic system. It is not only reflected in the interaction and interest within the game, but also emphasizes the interactive experience with players, and constitutes a complete game ecosystem. Therefore, the influencing factors of customer game experience can be divided into five categories: plot, modeling, interaction and so on. Finally, the consumption patterns of the survey, this paper through literature survey to obtain the main consumption patterns. In terms of the current profit model generated by online games, the common models can be roughly divided into game props charging, value-added service charging and time calculation methods. However, a variety of consumption modes have been derived from these consumption modes. Through the online survey of

the top ten mobile game consumption modes, such as king glory and peace elite, we can see that the consumption modes in many mobile games are mainly divided into six common modes, such as recharge, card drawing and pass. The results of this survey will be used as a follow-up questionnaire option to make a questionnaire.

2.2 Questionnaire design and data processing

This questionnaire is designed and distributed by questionnaire star. The survey results of mobile game customers' preferences are designed as options. The main content is divided into two parts. The first part is the information of the respondents, such as gender, age, income, consumption amount and access to mobile games. The second part is the collection of customers' preferences for different game types, game experiences, consumption patterns, etc. through the collection of popular mobile game types, it will be divided into six main game types: MOBA, Role

Play, Leisure Sports, Automatic Combat, Shooting and Dress Up.

The game experience can be divided into five major issues according to the factors contained in the game, including plot and emotion, social interaction, painting style and model, play operation mode and game difficulty. Finally, according to the information obtained from the literature survey, the consumption mode can be roughly divided into six main forms, including large recharge discount, card drawing mechanism, pass mode, first charge discount, cumulative recharge reward and monthly payment card. In order to understand customers' preferences for different types of games, game experiences, and consumption patterns, this paper will use the Likert 5-level scale to plan scoring, from 1 to 5 points representing "very dissatisfied" to "very satisfied", and the higher the score, the more satisfied they are with this category. The details of the questionnaire are shown in Table 3.

Table 3 Mobile game preference questionnaire

Content	Options
1. Sex	A. Male B. Female
2. Age	A. 25 years and under B. 26~35 C. 36~45 D. 45 years old and above
3. Have you ever played mobile games?	A. Yes B. No
4. Have you recharged in the game?	A. Yes B. No
5. How often do you play mobile games every week?	A. Play every day B. 1-2 times a week C. 3-4 times a week D. 5-6 times a week
6. How much you spend in the game each month?	A. Below 500 B. 501-1000 C. 1001-1500 D. Above 1500
7. What is your income?	A. Below 2000 B. 2000-3000 C. 3000-5000 D. 5000-8000 E. Above 8000
8. Satisfaction with the following game types	
MOBA	A. Very dissatisfied B. Dissatisfied C. Generally D. Satisfied E. Very Satisfied
Role Play	A. Very dissatisfied B. Dissatisfied C. Generally D. Satisfied E. Very Satisfied
Leisure ports	A. Very dissatisfied B. Dissatisfied C. Generally D. Satisfied E. Very Satisfied
Automatic Combat	A. Very dissatisfied B. Dissatisfied C. Generally D. Satisfied E. Very Satisfied
Shooting	A. Very dissatisfied B. Dissatisfied C. Generally D. Satisfied E. Very Satisfied
Dress Up	A. Very dissatisfied B. Dissatisfied C. Generally D. Satisfied E. Very Satisfied

9. What do you think are more important in the game experience?

Rich plot and emotional connection

A. Very Disagree B. Disagree
 C. Generally D. Agree E. Very Agree

Good interaction and social opportunities

A. Very Disagree B. Disagree
 C. Generally D. Agree E. Very Agree

Good painting style and character model

A. Very Disagree B. Disagree
 C. Generally D. Agree E. Very Agree

Good operation mode

A. Very Disagree B. Disagree
 C. Generally D. Agree E. Very Agree

Design of difficulty and ease in the game

A. Very Disagree B. Disagree
 C. Generally D. Agree E. Very Agree

10. Which of the following ways will make you more willing to consume?

Large recharge discount

A. Very dissatisfied B. Dissatisfied
 C. Generally D. Satisfied E. Very Satisfied

Card drawing mechanism type

A. Very dissatisfied B. Dissatisfied
 C. Generally D. Satisfied E. Very Satisfied

Pass mode

A. Very dissatisfied B. Dissatisfied
 C. Generally D. Satisfied E. Very Satisfied

First charge discount

A. Very dissatisfied B. Dissatisfied
 C. Generally D. Satisfied E. Very Satisfied

Cumulative recharge reward

A. Very dissatisfied B. Dissatisfied
 C. Generally D. Satisfied E. Very Satisfied

Paid monthly card

A. Very dissatisfied B. Dissatisfied
 C. Generally D. Satisfied E. Very Satisfied

11. From which channels will you contact novice tour?

A. Mobile App Store
 B. Live broadcasting platform
 C. A friend told me
 D. Browser
 E. Short video platform
 F. QQ/WeChat and other public accounts

The questionnaire is distributed through links and WeChat, and then collected and counted by the questionnaire star system. In this survey, a total of 719 questionnaires were issued. According to question 3, 4 in the questionnaire, whether customers have played mobile games and whether they have recharged mobile games as the exclusion item, 670 valid questionnaires were obtained except for those who have not played mobile games and those who have not recharged, accounting for 52.84% of boys and 47.16% of girls. The proportion of men and women is relatively uniform, and the distribution is shown in Figure 1.

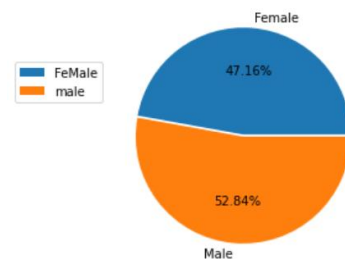


Figure 1 Sex ratio

The age distribution of surveyed players ranges from less than 25 years old to over 45 years old. Among them, the age group of 36-45 years old has the highest number of people playing mobile games, with 184 people, accounting for 27.46%; Next is the population under the age of 26-35, with 177 visitors, accounting for 26.42%; Next is the

group under the age of 25, with 166 visitors, accounting for 24.78%; Finally, there is the population aged 45 and above, with 143 visitors, accounting for 21.34%. The distribution of each age group is relatively even, as shown in Figure 2.

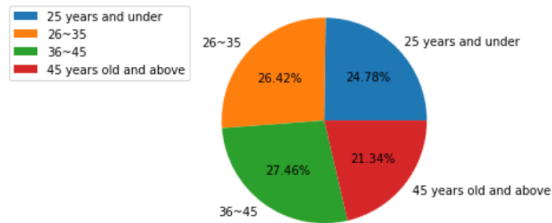


Figure 2 Distribution by age group

The number of surveyed players who play mobile games 1-2 times a week is higher, with 220 people, accounting for 32.84%; The second is playing 3-4 times a week, with 172 people, accounting for 25.67%; 159 people played every day, accounting for 23.73%; The number of people who visit 5-6 times a week is the least, 119, accounting for 17.76%, and the distribution is shown in Figure 3.

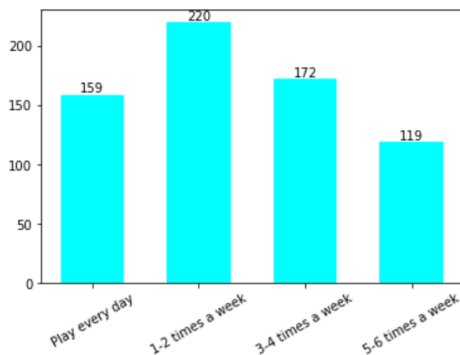


Figure 3 Mobile game frequency

As for the consumption of mobile games, the respondents' monthly consumption of mobile games was less than ¥500, reaching 397 people, accounting for 59.25%, accounting for more than half of the surveyed population. The second is the consumer group of ¥501-1000, with 113 people, accounting for 16.87%; The number of consumers with ¥1001-1500 was 92, accounting for 13.73%. Finally, the number of consumers with more than ¥1500 was only 68, accounting for 10.15%. The distribution is shown in Figure 4.

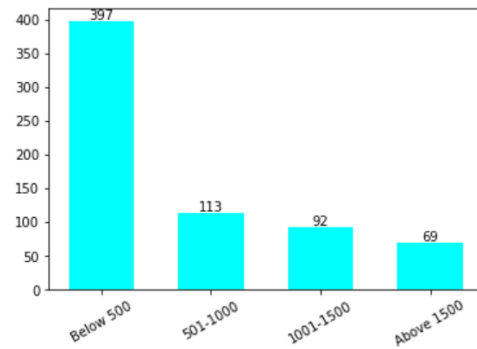


Figure 4 Consumption amount of mobile games

The income level of the surveyed players is relatively concentrated. The monthly income is 3000- ¥5000, with 311 people, accounting for 46.42%, followed by the 2000-3000 income group, with 129 people, accounting for 19.25%; 86 people with an income of ¥5000~8000, accounting for 12.84%; 76 people with income above ¥8000, accounting for 11.34%; The lowest number of people is the people with an income of less than ¥2000, only 68, accounting for 10.15%. The distribution is shown in Figure 5.

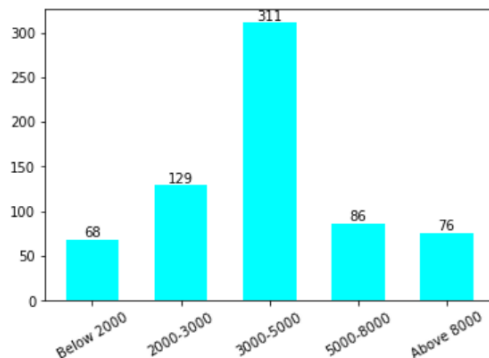


Figure 5 Income

2.3 Data reliability test

In order to ensure the reliability of the data, this paper will test the reliability of the collected data SPSS was used to conduct reliability statistics on the data obtained from questions 8, 9 and 10 in the questionnaire, and the Cronbach coefficient was used as an indicator to test the reliability of the data. The reliability statistics results of the three types of questions are shown in Table 4.

Table 4 Reliability statistics

Latent Variable	Cronbachs α	Number of items
Game Type	0.790	6
Game Experience	0.818	5
Consumption mode	0.869	6

In the reliability analysis, the Cronbach coefficient is used to measure the internal consistency. The value is generally between 0-1. The higher the Cronbach coefficient is, the better the internal consistency is. The general coefficient is greater than 0.8, indicating that the scale is very reliable. According to the data in the table, the Cronbach coefficient of the game type scale is 0.790, which is close to 0.8, indicating good reliability. The Cronbach coefficient of the game experience scale is 0.818, and the Cronbach coefficient of the consumption style scale is 0.869. The Cronbach coefficients are greater than 0.8, indicating that the reliability of the questionnaire is very good. In conclusion, the three types of scales have high reliability and can be used.

III. ANALYSIS OF GAME TYPE PREFERENCES

This section will focus on the types of games, mainly analyzing the impact of different types of mobile games on customer preferences and the correlation between customer characteristics and the choice of rival Games' preferences.

3.1 Analysis of customers' preferences for different types of mobile games

An important basis for evaluating the preference for different types of mobile games is people's preference for mobile games. The higher the customer's score for mobile games, the higher the satisfaction. This survey compares the most popular games by comparing several popular types. In this paper, the customer satisfaction with different games in question 8 of the questionnaire is extracted and sorted out into the following table, as shown in Table 5.

Table 5 Customer satisfaction with different mobile games

Game Tyep	Very dissatisfied	Dissatisfied	Generally	Satisfied	Very Satisfied
MOBA	3.28%	8.36%	43.13%	22.69%	22.54%
Role Play	3.28%	11.04%	39.40%	25.52%	20.75%
Leisure ports	7.76%	11.04%	44.33%	22.84%	14.03%
Automatic Combat	4.78%	17.31%	45.82%	21.79%	10.30%
Shooting	3.43%	14.33%	47.01%	22.09%	13.13%
Dress Up	4.18%	16.12%	46.27%	20.45%	12.99%

In order to better understand customers' preferences for different types of games, this paper will use SPSS 27.0 to make descriptive statistics on the data and calculate the discrete coefficient to

observe the distribution characteristics and data stability of customers' satisfaction with various types of mobile games. The statistical results are shown in Table 6.

Table 6 Descriptive statistics of satisfaction with different types of mobile games

Descriptive statistics	Mean	Std	Coefficient of variation
MOBA	3.53	1.032	29.24%
Role Play	3.49	1.041	29.83%
Leisure ports	3.24	1.074	33.15%
Automatic Combat	3.16	0.986	31.20%
Shooting	3.27	0.977	29.88%
Dress Up	3.22	1.003	31.35%

Among the six types of mobile games, MOBA and role-playing mobile games have higher scores, which are 3.53 and 3.49 respectively, indicating that customers are more satisfied with these two types of games. Through the analysis of the dispersion coefficient of the six types of mobile games, it can be seen that MOBA and role-playing games have higher scores and lower dispersion coefficient than other types of games, indicating that these two types of games are relatively stable in the surveyed population and have higher satisfaction, indicating that customers prefer these two types of mobile games.

Through the analysis, it is concluded that these two types of mobile games have high satisfaction. This paper will continue to study the correlation between game types and customer characteristics based on these two types of mobile games.

3.2 Research on the relevance of game types to customer characteristics

With the development of the Internet, mobile games have also become a part of people's daily life, but it is not difficult to find a problem in life, that is, most of the game players seem to be men, which can be seen from many aspects of life. In the current popular game competitions, most professional players are mainly male players, and there are few or almost no female players in international competitions. In fact, female players have become an important consumer force in the current game market. Therefore, this paper will study the impact of gender on the satisfaction of different game types based on the gender characteristics of customers.

In order to study the relevance of gender to the choice of different types of mobile games, this paper will use SPSS software to analyze the gender of customers and the two popular mobile games to observe whether the gender of customers affects the satisfaction of different types of games. The analysis results are shown in Table 7 and Table 8.

Table 7 Cross contingency table of gender satisfaction with MOBA

MOBA	Male	Female	Total
Very dissatisfied	10	12	22
Dissatisfied	30	26	56
Generally	148	141	289
Satisfied	81	71	152
Very Satisfied	85	66	151
Total	354	316	670

Table 8 Cross contingency table of gender satisfaction with role playing

Role Play	Male	Female	Total
Very dissatisfied	14	8	22
Dissatisfied	34	40	74
Generally	133	131	264
Satisfied	92	79	171
Very Satisfied	81	58	139
Total	354	316	670

It can be seen from Tabel 7 and Table 8 that there is no significant difference between customers' satisfaction with different types of

games under different gender conditions. At the same time, in order to verify whether there are differences, chi square test is conducted to

determine whether different genders have an impact on the satisfaction of mobile game types. The test results are shown in Table 9 and Table 10.

Original hypothesis H0: different genders have no significant effect on the satisfaction of mobile game types.

Alternative hypothesis H1: different genders have a significant impact on the satisfaction of mobile game types.

Table 9 Chi square test of gender satisfaction with MOBA

	Value	Freedom	Asymptotic significance
Pearson chi square	1.535	4	0.820
likelihood ratio	1.537	4	0.820
Linear correlation	1.095	1	0.295
Number of effective cases		670	

Table 10 Chi square test of gender satisfaction with role playing

	Value	Freedom	Asymptotic significance
Pearson chi square	4.792	4	0.309
likelihood ratio	4.816	4	0.307
Linear correlation	1.618	1	0.203
Number of effective cases		670	

It can be seen from the above tables that the p value of customer gender in the test of MOBA and role-playing games is 0.820 and 0.309 respectively, which are not in the rejection field. Therefore, the original hypothesis cannot be rejected, that is, it is believed that the difference of customer gender has no significant impact on the satisfaction of game types.

3.3 Analysis on the change trend and influencing factors of game type preference

In the study of several popular types of mobile games, it is not difficult to find that customers have good satisfaction with all kinds of mobile games, but with the increase of the number of customers, customers have a higher preference for role-playing and MOBA mobile games, which mainly has the following effects.

First, when playing games, players tend to be more challenging and have a sense of achievement, while play games are usually based on a larger game background, allowing players to play a role and designing a large number of tasks and plots, making players very challenging and have a sense of achievement. Through role playing, the player can incarnate the role in the game, treat him as another self in the virtual world, and

experience a life completely different from the reality; Through narration, players can participate in the joys and sorrows of the role, and truly integrate into the fantastic and magnificent game world. Second, the high degree of freedom of the game makes the game more playable and popular with customers. Compared with the traditional game, the RPG game with an open world is different. Its highly free playing method allows customers to play the game all the time even if they do not complete the task. This is why role-playing games are popular with customers. MOBA is a multiplayer online real-time strategy game with the arena as the background. This kind of game is based on the game. The fast-paced game makes it a habit to repeat the game process. The advantages of easy operation reduce the difficulty of getting started with the mobile game, so that customers can get a better experience in playing.

From the perspective of the specific behavior of the surveyed customers, 220 customers played 1-2 times a week, accounting for 38.24% of the survey. 172 customers played 3-4 times a week, accounting for 25.67% of the survey. Compared with the number of people who played 5-6 times a day and every day, the number of times customers played was less. The role-playing and MoBa

mobile games with a high degree of freedom and round based economic playing methods made it unnecessary for customers to spend too much time to develop. Therefore, customers can spend a little time to enjoy the fun of the game, which is also the reason why customers prefer these two types of Games in many game types.

IV. CONCLUSION

Mobile gaming is a very promising industry in China, with its market share continuing to grow. To better capture the preferences of mobile game users towards games, we conducted a survey questionnaire to obtain their usage experience of mobile games. Through sorting out the survey data, we found that users have a significantly higher preference for two types of games, including MOBA and Role Play, compared to other types. However, whether it is these two games or other games, there is no significant difference in gender preference for game types. These mobile games with a large number of players have overall high user satisfaction. As the number of players continues to increase, users increasingly prefer MOBA and Role Play games. Mobile game developers can refer to the research results in this article when creating new games and make targeted optimizations to improve user satisfaction and

loyalty, as well as enhance market competitiveness. The limitation of this article is that the survey is only targeted at mobile phone users in China, and the number of questionnaire responses is not large enough. The reliability of the research conclusions needs further verification.

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