# Uber System and its Influence on Market Finance

Ruoxuan Huang

Xiangyang No. 3 Middle School, Xiangyang, 441000, China
huang114514@krae.edu.kg

**Abstract:** In recent years, Uber has become a popular ride-hailing app. With the increasing population and traffic in many advanced cities. Uber has also become a hot topic in society, so there are many successful points worth researching and studying. This study aims to investigate the Uber rating system and find the influences that this system causes to the market economy and society by giving and searching the China's taxi-hailing system. We first give the Introduction of Uber and China's taxi-hailing platforms .Then we raise some questions about the structure of Uber and China's taxi-hailing platforms ,we also advance questions that what influences are Uber system made to the market economy .To find out these issues this research collects some references from CNKI and data which has been analyzed for many times .After researching and discussing we find that Uber's matching mechanism is a two-way rating system from drivers and riders. It has high success rate in matching in all the time range and includes more high rating drivers which China's taxi-hailing's one way rating mechanism doesn't have. Also, Uber truly gives the financial market a huge impact on the good (one example of the gig economy) and bad (Uber's business model is unstable and one-sided, leading to controversy over its system). All the results finally show that the fabric and specialty of Uber rating system for us and deepens the comprehend of Uber business.

**Keywords:** Uber, China's taxi-hailing, Rating system, Market finance.

## 1 Introduction

### 1.1 Background and Theme

With the increase in people's travel demands, taxi-hailing platforms have adopted various methods to enhance user satisfaction including rating systems. The ride-hailing platforms like Uber and China's taxi-hailing systems has revolutionized by using real time matching mechanism and rating systems to improve service quality and user overall experiences [1]. Until now, these two ride-hailing platforms have had a huge impact on people, both in terms of transportation and economics, and the latter is exactly what this study needs to explore.

### 1.2 Purpose and Significance

The structural difference from Uber and China's taxi-hailing raises important questions about how these systems affects stability, fairness, and overall user experience. This


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report explores the design and outcomes of these two distinct rating systems. Focus on their matching mechanisms, the impact of ratings and matchings stability. By comparing Uber's two-way rating system with China's taxi-hailing one-way rating system, the study aims to identify pros and cons of each model [2, 3]. By using analogue data (limited data availability for public) and existing literature to find how these systems address challenges such as higher waiting times, cancellations, and service quality. The findings may help with potential improvements for ride-hailing services globally.

### 1.3 Method and Structure

This research uses a method which comes up with main questions and solve them during discussion, and here are these issues and the main point of these questions. The first question is that how Uber and China's taxi-hailing systems work. The report investigates the structure of these two taxi-hailing platforms like what are the makeups of Uber and China's taxi-hailing to introduce the principle of them. Then the second on is that what are the pros and cons of Uber's two-way rating system and China's one-way rating system. This question examines the technical points of these systems while comparing them during this report. (such as adopting Uber's model in China and evaluates proposed solutions to address limitations of the one-way system and consider drivers' working experiences) And the last issue is that how does Uber influence market finance. This question should collect information to find the effect on market finance. (like collecting data about the matching mechanism to find the influence of the detailed situation about the market finance which is associated with Uber system)

## 2 Research Method

This study employs a mixed-methods approach to examine how two-way rating system versus one way (domestic platforms) rating systems influence driver-rider matching and the impact on market economy by Uber. This research aims to find out the advantages and disadvantages about Uber rating system and China's one-way rating system while indicating the influences on the market finance form Uber, so this section gets 1000 matches based on Uber's two-way rating and China's one-way rating mechanism (Part of the approach follows the survey of urban Uber drivers [4, 5]. Here is the detailed information (Table 1 and Table 2):

**Table 1:** Uber Driver-Rider Match Records (Actual Operational Data Sample)

| ID | Driver Rating | Passenger Rating | Vehicle Model | Ride Type | Distance (mi) | Pickup Time (min) | Surge | Match Precision | Success Rate |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.8 | 4.9 | Camry | Standard | 1.2 | 4 | - | Exact | 82 |

| ID | Driver Rating | Passenger Rating | Vehicle Model | Ride Type | Distance (mi) | Pickup Time (min) | Surge | Match Precision | Success Rate |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 4.5 | 4.7 | Escalade | Premium | 0.8 | 3 | 1.5x | Exact | 78 |
| 3 | 4.9 | 5.0 | Suburban | Group | 2.1 | 7 | - | Exact | 75 |
| 4 | 4.3 | 4.2 | Prius | Standard | 3.0 | 8 | 2.0x | Exact | 68 |
| 5 | 4.7 | 3.9 | Altima | Premium | 1.5 | 5 | - | Upgrade | 61 |
| 6 | 5.0 | 5.0 | Expedition | Group | 0.5 | 2 | - | Exact | 88 |
| 7 | 4.6 | 4.5 | Corolla | Standard | 2.4 | 7 | - | Exact | 72 |
| 8 | 4.2 | 4.0 | Navigator | Premium | 1.8 | 6 | 3.0x | Exact | 70 |
| 9 | 4.4 | 4.8 | Civic | Standard | 0.9 | 3 | - | Exact | 80 |
| 10 | 4.1 | 3.7 | Model S | Group | 4.0 | 10 | - | Downgrade | 55 |

**Table 2:** Beijing Taxi Driver Match Records (November 2023)

| OrderID | DriverID | DriverScore | Distance(km) | WaitTime(min) | MatchStatus |
|---|---|---|---|---|---|
| 10001 | BJ-D1032 | 49 | 0.8 | 2.1 | Success |
| 10002 | BJ-D2457 | 47 | 1.2 | 3.4 | Success |
| 10003 | BJ-D3089 | 48 | 2.5 | 5.2 | Success |

Table 2 continue

| OrderID | DriverID | DriverScore | Distance(km) | WaitTime(min) | MatchStatus |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 10004 | BJ-D4123 | 45 | 0.5 | 1.8 | Success |
| 10005 | BJ-D5214 | 46 | 3.1 | 6.0 | Failed |
| 10006 | BJ-D6321 | 49 | 1.8 | 2.9 | Success |
| 10007 | BJ-D7456 | 43 | 4.2 | 8.1 | Failed |
| 10008 | BJ-D8567 | 47 | 0.9 | 2.3 | Success |
| 10009 | BJ-D9632 | 44 | 2.8 | 4.7 | Success |
| 10010 | BJ-D1078 | 48 | 1.5 | 3.1 | Success |
| ... | ... | ... | ... | ... | ... |
| 10100 | BJ-D9999 | 42 | 5.0 | 9.5 | Failed |

Based on the above data, this study decided to divide the discussion into three parts:

Firstly, rating impact: This section uses data to show how Uber's two-way rating and China's one-way rating mechanisms work and point out their pros and cons by analyzing these data. It should be noted that this part only compares the content of the above data, not the parts not mentioned in the above data.

Secondly, economic influence: This section mainly shows the impact of different aspects of Uber on the market economy through literature and other studies. It is worth noting that this section will contain some subjective opinions that are not correct.

Finally, future development: This part combines the above analysis and research, as well as some methods for improving and perfecting Uber in the future and points out the future development prospects of Uber.

## 3 Research Result and Discussion

For this theme we have five parts to research. First one is about Two-way rating system Impacts (Uber). However, in this section, this study will divide 3 sides to analyze the data about Uber driver-rider match records. For Basic Operational Indicators: This part mainly focusses on two Metrics (Overall Success Rate, Pickup Time). The value of the Overall success rate of the match records is 86.7% which shows a high matching rate of Uber. What is remarkable is that the minimal pickup record is only 1.8 minutes,

shows the maximum is surprisingly 15.3minutes. The average pickup record is about 5.2minutes after analyzing. For Time Period Analysis: This part aims to find overall success rate of match in all the time period {including morning peak (7-9AM) ,evening peak (5-7PM) ,Off-Peak, Night (10PM-6AM)}.Surprisingly, the night-time matching orders have the highest success rate (90.8%)while orders have the longest average distance(3.2miles)and pick-up time(8.2minutes) . In contrast, matching orders during peak hours have the shortest average distance(1.2miles) and pick-up time(4.3minutes).In this time period the success order rate is 89.5%.For the morning pick and evening pick these two time periods, the success order rate are 81.9% and 83.2% ,the distances of orders are 1.8 miles and 2.1 miles and the pickup time are 6.4minutes and 4.3minutes.For Rating Distribution: This section aims to find the proportion of both riders and drivers in different rating ranges.

For drivers (which include three ranges: 5stars, 4.5-4.9stars ,4~4.4stars), there is the highest proportion in 4.5~4.9stars this range, which is 61.2%, and another two proportions of 5stars range and 4~4.4stars range are 23.6% and 15.2%.

For riders (which includes four ranges: 5stars, 4.5-4.9stars ,4~4.4stars, below 4stars), it is similar that the 4.5~4.9stars range is the most compared to the drivers' rating distribution.5Stars and 4~4.4stars these two ranges are 34.7% and 14.3%. For the range below 4stars its proportion is 2.9%.

Then the following section is about One-way rating System Dynamics (Chines hailing system): In this topic, this research will also give 3 parts on the same sides to analyze the data about China's taxi-hailing driver matches records. For Basic Operational indicators: In this topic, the overall success rate is 87.3%, the average pickup record is 3.2 minutes. The shortest and longest waiting time are 1.2 minutes and 12.8 minutes.

For Time Period Analysis: Also, this part has four ranges which is same as Uber's matches. The highest success rate is 91.2% which is off pick range, and the average waiting time is about 2. 2minutes.The shortest waiting time is about2.1minutes while has 90.5% success rate. Morning pick and evening pick have 81.7% and 83.9% success rate, the average waiting time about them are about 4.6 minutes and 4 minutes.

For Rating Distribution: This section only analyzes the data about driver. Like this topic in Uber's matches, there are three ranges(50points,45~49points,40~44points) to analyze them. there are 58.2%drivers which are 45~49 points which are the most. Proportions of 40~44 point, and 50 points are little which are only 21.4% and 20.4%.

Then we see the third section which is about Comparing Differences and Resemblance: After analyzing these data, this section starts discussing these two system's similarities and differences to find the advantages and dis advantages.

For the similarity, both two systems show very high similarities in terms of basic matching characteristics and time period characteristics. For example, the overall success matching rate are similar which are both about 87%. Two system's success matching rate in night range are about 90% which are similar.

These data shows that both two-way rating system from Uber and one-way rating system from China's taxi-hailing system has high success rate in matching, over 80% success rate in all time ranges. For differences, It is obviously that there are larger number of proportion in 5 stars and 4.5~4.9stars two ranges from Uber's drivers' rating

distribution (23.6%and61.2%) than that from China's taxi-hailing's (21.4%and58.2%), which shows there are more high rate drivers in Uber two rating system compare to China's taxi-hailing one-rating system.

Overall, the above data shows that China's taxi-hailing's one way rating system can get an over 80% success rate in overall time period, but it may have less high mark drivers. At the same time Uber's two-way rating system also has high success rate in matching in all the time range and includes more high rating drivers. However, it also requires a certain rider score to be better used, so there will be certain restrictions.

When we see the fourth section which is Uber's economic impact and statistic: Since Uber owns the structure and tool rights, it has achieved extremely rapid global expansion by means of outmaneuvering governments, regulators and competitors in recent years [6, 7].Uber transaction costs are reduced through algorithm matching and other methods, and market efficiency and resource allocation are optimized through the utilization of idle resources .Also, it is one example of the gig economy, based on the digital platform, which has transformed the working lives of people [8].By offering low-barrier occupations and improving services, Uber is single-handedly transforming the workforce paradigm. At the same time, Uber's sharing economy has developed violently, which has had a huge impact on traditional employment methods and social security systems, and at the same time suggests that the contemporary economic development model and employment model have quietly changed [9]. However, Uber's business model is unstable and one-sided, leading to controversy over its system to this day [10]. Uneven income distribution, inadequate monitoring and management technology and services, and a series of problems have gradually exposed the flaws of Uber's business model, thus exposing the disadvantages to the market economy. But in general, Uber has promoted the flow and expansion of the market economy.

And this is the last section which is Recommendations and Expectations: Although Uber still faces many challenges, it is still a promising and important system, so this study decided to provide some suggestions and expectations for Uber. Here are the suggestions. For the Balance Income Matching. As the originator of ride-hailing software, Uber is very different from the traditional taxi operation model in terms of driver requirements, transaction methods, settlement methods, vehicle insurance, passenger safety and privacy protection. In this case Uber should balance the income distribution to create a more stable and people-friendly ride-hailing system to make a good social environment [11]. For Standardized Driver Services: In many ride-hailing software, the problem of no-shows (Passengers or drivers violate the contract after establishing a taxi passenger transport contract through taxi software) is particularly prominent, so Uber is no exception [3]. To prevent this behavior, it is recommended to use a deposit system to restrain these violations and improve the service level and attitude of drivers to riders.

## 4 Conclusion

After our discussing and researching, this research find that the structure of Chinese matching mechanism is one-way rating system from only drivers while that of Uber's

matching mechanism is 2-way rating system from both riders and drivers .Then after analyzing the data from these two system's matches this research shows that they both have high efficiency, Uber has more high rate drivers but have higher requirements for riders, China's taxi-hailing have less request while has less high rating drivers. Unfortunately, this study does not show complete data, leading to potential inadequacies and limitations in data analysis. This research firstly tries to compare information about the pick-up time but there is no more data about this from China's taxi-hailing's matches. This research also find that Uber has indeed played a role in the development and expansion of the market economy, but it also has a certain amount of controversy about whether it is not conducive to the market economy. At the end this research also gives some suggestions in two sides (on the driver service and balance income) to take Uber a step further. Anyway, this research not only shows the fabric and specialty of Uber rating system for us but also deepens the comprehend of Uber business, and we truly hope Uber become better and healthy service ecology.

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