

Optimizing Ride-Hailing Platforms: A Comprehensive Evaluation of Drivers' Perspectives on Application Features and Rating Systems.

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Abstract

Transportation is a critical aspect of daily life, and governments strive to facilitate people's movement efficiently and safely. The proliferation of ride-hailing applications has introduced challenges for drivers, prompting the need for a comprehensive evaluation. This study focuses on assessing ride-hailing applications and their rating systems from the drivers' perspective. Through two conducted focus groups involving 13 participants, drivers shared insights on improving their experiences and enhancing rating systems. The analysis of their discussions revealed key themes, emphasizing the necessity of adjusting certain application features and advocating for a practical and efficient redesign of rating systems. This research contributes valuable insights to the ongoing discourse on optimizing ride-hailing platforms for both drivers and riders.

Keywords:

Ride-hailing Applications; Transportation; Rating System; Drivers.

1. Introduction

Using public transportation for daily commutes, homebound journeys, and travel within major cities with extensive routes has become an essential routine for many. While some individuals own personal vehicles, a growing number opt for public transportation to alleviate congestion ^[1]. The transportation landscape underwent a significant transformation in 2009 with the advent of ride-hailing services, notably Uber, which presently dominates 68 percent of the United States market. This shift in preference from driving one's own vehicle to embracing on-demand, flexible rides

sans parking fees has reshaped commuter habits ^[2]. Research indicates that the introduction of ride-hailing services has led to a 6% average reduction in the use of public transportation, promoting a car-free lifestyle ^[3] and boasting a 38% higher capacity utilization rate compared to traditional taxis ^[5].

Ride-hailing applications strive to provide a safe, secure, and enjoyable experience for both drivers and riders, introducing a paradigm shift in the transportation sector. Nevertheless, rider satisfaction hinges significantly on cost reduction and the convenience offered by these platforms ^[6]. Despite creating numerous job

opportunities with self-management and flexible scheduling, challenges persist for both drivers and riders^[7]. A key concern is the rating system employed by ride-hailing apps, the primary tool for performance evaluation. Currently, maintaining a score above 4.6 is a formidable challenge for drivers^[8].

Rider ratings, encompassing aspects such as vehicle cleanliness, driver politeness, and journey safety, exert a substantial influence on a driver's overall score. Notably, female drivers aged 30 to 50 tend to receive higher ratings than their male counterparts^[9]. Conversely, drivers are restricted to an overall rating of the travel experience using a Five-Star Quality rating system. Accurate scoring of riders significantly impacts the driver's overall experience, as evidenced by higher-ranked drivers receiving better behavior from riders on subsequent journeys^[11].

To address these dynamics, there is a critical need to enhance the rating system features, facilitating more accurate assessments for both riders and drivers. This study aims to evaluate the ride-hailing platforms in Saudi Arabia, focusing on the effectiveness of the drivers' rating system. The research seeks answers to the following questions:

RQ1: How do ride-hailing drivers in the study feel about utilizing ride-hailing applications?

RQ2: What elements influence the captain's experience on ride-hailing applications?

RQ3: What problems do captains en-

counter with ride-hailing applications and their rating systems?

RQ4: What suggestions do captains have to improve their experience and the rating system?

1.1. Sharing Economy

Various studies offer diverse definitions of the sharing economy. According to [14, p.4], the sharing economy is described as "a scalable socioeconomic system that employs technology-enabled platforms to provide users with temporary access to tangible and intangible resources that may be crowdsourced."

The sharing economy, characterized as peer-to-peer (P2P) collaborations aiming to create profitable businesses from various resources^[15], has witnessed a significant rise. The rapid growth of these businesses can be attributed to the flexibility they offer contractors and the low entry barriers for individuals entering the industry^[16].

One notable example is DoorDash, an application facilitating food delivery from numerous restaurants. Additionally, Uber and Lyft serve as prime illustrations of ride-hailing platforms categorized as sharing economy businesses, replacing traditional public transportation with user-friendly applications. P2P platforms hinge on the volume of trades or earnings through commissions^[17]. Uber, for instance, operates as a P2P business, enabling individuals to register as captains and use their cars to transport passengers while adhering to Uber's operating standards.

Interestingly, with the sharing econo-

my posing a threat to traditional business models, numerous B2P (business-to-peer) enterprises have transitioned to offer P2P services, thereby expanding their market share. For instance, Caocao, a ride-hailing platform, was established by its parent company, the Chinese automotive giant Geely. Caocao is utilized by Geely to analyze riders' usage behavior, monitor driver conduct, and assess automobile performance on the platform, ultimately contributing to the parent company's innovation process and the design of improved vehicles^[18]. Consequently, this trend is leading some companies to participate in creating a new phenomenon of serving both B2P and P2P segments.

Another prominent example of the sharing economy is Airbnb, allowing homeowners to rent out their properties for a limited time, providing more affordable and convenient options than traditional hotels. However, this practice may present challenges for government agencies. Collaborations between government agencies and sharing economy platforms to provide public services could potentially lead to economic inequality issues. The availability of long-term affordable rental properties might be significantly impacted by the possibility of homeowners renting their properties on short-term contracts through platforms like Airbnb^[19].

1.2. Ride-Hailing Platforms

As mentioned earlier, Uber and Lyft, prominent ride-hailing companies, have played a significant role in the sharing economy sector since its inception. The

popularity of these platforms stems from their convenience in planning trips, whether pre-arranged or last-minute, thereby minimizing wait times for riders. Additionally, the integration of GPS features in ride-hailing systems enhances rider safety by tracking the journey^[20].

While registering on ride-hailing platforms requires personal information, the potential for impersonation and the use of fake identification remains a concern. Various factors influence the adoption of ride-hailing applications, including employment and educational status. Individuals with full-time jobs and flexible schedules are more inclined to use these services, whereas students show lower adoption rates^[21]. The willingness to pay for reduced travel time is a significant determinant, with those inclined to use ride-hailing applications often valuing time savings^[22].

Traditionally viewed as a part-time occupation for those without employment, contemporary research challenges this perception. High-earning professionals, including college teachers, medical researchers, and lawyers, are now turning to ride-hailing platforms as a supplementary source of income. This trend has the potential to aggravate income inequality, as it tends to favor individuals who are already well-educated and well-compensated in their primary occupations^[23].

In the face of intense competition among ride-hailing platforms and drivers seeking additional income, there is a rising demand for new cars, typically adhering to Euro-

pean emission standards, stipulating that vehicles should be less than 5 years old^[10]. Furthermore, the reliability and feedback scores play a crucial role in the optimization of matching between drivers and riders, a topic to be explored in greater detail in the upcoming section.

1.3. Rating System

Historically, the rating system originated in 1968 when the Motion Picture Association of America (MPAA) began using it to gather voluntary parental opinions on the suitability of movies for children and teenagers^[26]. In contemporary times, an increasing number of businesses rely on review systems. For instance, Uber utilizes ratings to remove poorly performing drivers from its service, while Amazon strategically reviews its books in various formats to enhance self-sustainability. Moreover, certain rating systems encounter challenges in sustaining the accuracy and reliability of rating scores. An illustrative case is the Airbnb platform, which grappled with a significant challenge until 2014 concerning the dynamics between the two parties involved—the host and the customer. Specifically, when a customer rates the host before the host has a chance to reciprocate, the customer's rating score becomes immediately visible to the host. This visibility has the potential to shape how the host subsequently rates the customer, whether positively or negatively^[27].

A study^[28] investigated Yelp's reliability, focusing on its business concept of crowd-sourced evaluations about companies. The research revealed that 16% of restaurant

evaluations were fake, constituting review fraud. The competitive landscape among companies was identified as a factor contributing to the surge in fake reviews. Another study emphasized the significance of including a combination of subjective and numeric elements in reviews for greater informativeness^[29], a practice employed by some ride-hailing applications like Uber.

Uber's rating system enables both drivers and riders to rate each other after every trip. The driver rating is an average of the last 500 rider ratings, and any rating below 5 prompts the application to seek feedback. Riders use a set of compliments to rate drivers, visible to drivers along with any written feedback. However, riders can only see their overall score without detailed feedback on why they were rated a certain way. The impact of the rating system is significant for both parties, with drivers being cautious about their scores, while some riders are unaware of the consequences of low ratings, often providing them without realizing it may lead to a suspension.

Feeling safe during the entire trip is crucial and can significantly influence the rating from both parties, especially considering the safety concerns of drivers who offer rides to anonymous passengers. Studies have shown a notable occupational injury rate among taxi drivers and chauffeurs, emphasizing the importance of driver safety^[30]. Notably, while many studies have explored the rider's perspective on ratings, the driver's viewpoint remains largely unexplored.

2. Research Method and Analysis

The methodology adhered to the guidelines outlined in [31], which recommend using focus groups when seeking a diverse range of feelings and opinions on a particular behavior. Consistent with the authors' advice, the size of the single-category focus groups ranged from five to ten participants. These groups were conducted online using Zoom.us, facilitating participant interaction and allowing them to raise hands to comment on statements or opinions. Online qualitative research tools, as highlighted in [32], have gained popularity due to their capacity to ensure anonymity and broaden the geographical reach of a study.

Participants were posed with uniform questions, commencing with a discussion of their overall experience as ride-hailing captains. Subsequently, the dialogue shifted to their concerns about riding with strangers, followed by an exploration of the challenges encountered on ride-hailing applications. Participants were queried about factors influencing their ratings and the reasons behind assigning lower scores. Additionally, they were asked if ride-hailing applications considered the ratings they provided to riders. The final set of inquiries invited participants to share their opinions and suggestions for enhancing their experience and improving the rating system on ride-hailing applications.

Furthermore, a descriptive analysis of participants' demographic characteristics was conducted. Responses were collected from 13 participants residing in different

regions of Saudi Arabia, with attendees selected from various sources such as friends, relatives, or Telegram groups. Participants were then categorized based on gender, and invitations were extended to 8 males and 8 females. Ultimately, 7 males and 6 females participated in the online meetings. An online demographic survey was administered at the outset of each meeting to gather information on gender, occupation, and the ride-hailing application used.

Data analysis was carried out by the researcher following the qualitative data coding guidelines established by [33]. Respondents' answers were organized into thematic categories aligned with the research questions, employing descriptive coding. The researchers engaged in discussions to refine the codes and categories, arriving at a consensus on category names, themes, and their relevance to the research questions.

3. Results & Discussion

3.1. Demographic Characteristics

The participants' ages ranged from 20 to 50 years, with an average age of 35.33 years (SD=9.58). The majority of participants were employed. The most commonly used ride-hailing applications, in descending order, were Bolt, Wasslini, Careem, Uber, Jeeny, Leena, and Ego. Participants primarily worked as ride-hailing captains during their spare time (76.9%) or as a part-time job (23.1%).

Concerning usage frequency, 46.2% of participants used ride-hailing apps more than 10 times per week, while 30.8% used them 1-5 times per week, and 23.1% used

them 6-10 times per week. The majority of participants (84.6%) offered rides in the economy class, catering to drivers with economic cars seeking to earn reasonable fares. In contrast, a smaller percentage (15.4%) operated in the business or black class, allowing them to register with their luxurious cars and command higher fares due to their premium service classification.

Table 1. Demographic characteristics of the participants (N=13)

Gender	
Male	7 (53.8%)
Female	6 (46.2%)
Age	
(20-30)	4 (30.8%)
(31-40)	6 (46.2%)
(41-50)	3 (23.1%)
Occupation	
Employed	10 (76.9%)
Student	2 (15.4%)
Unemployed	1 (7.7%)
Overall Income	
1000-3000	3 (23.1%)
3001-6000	4 (30.8%)
6001-10000	2 (15.4%)
More than 10000	3 (23.1%)

3.2. Thematic Analysis

3.2.1. Theme 1: Benefits of Using Ride-hailing Applications

The participants overwhelmingly highlighted the advantages of using ride-hailing apps as captains. They emphasized the simplicity of the applications, praising their user-friendly interfaces and flexibility. One participant commented, "The application is easy to use; registration, accepting requests, receiving payments—everything is flexible, motivating captains to work on it" [participant 10]. Participants portrayed

their captain experience positively, using terms such as "bossing yourself" [participant 2], "successful" [participant 5], "enjoyable and socializing" [participant 12], and "profitable" [participant 3].

The participants, who utilized ride-hailing applications during their spare time or as a part-time job, conveyed a positive impression of the income. One participant stated, "The income is high on these applications. I use Wasslini, and just by arriving at the customer's destination, 10 SR is already in my balance as a start, so the income is good" [participant 9]. Another participant mentioned, "I have benefited financially from it" [participant 3]. Some reported instances where the company compensated captains if the rider failed to pay the fare, demonstrating the platforms' support for their drivers. Female participants, in particular, appreciated ride-hailing platforms that provided rides exclusively for women or allowed captains to determine the gender of the customer, reflecting considerations for safety and cultural preferences.

3.2.2. Theme2: Challenges of Using Ride-hailing Applications

3.2.2.1. Challenges with Payment

Many participants expressed a preference for riders to choose the cash payment method. However, this preference became a challenge when captains couldn't predict the payment method until after accepting the request. One participant highlighted the unpredictability, stating, "Sometimes I go out with no cash, and when I start accepting requests, it appears that the cus-

tomers would pay via credit card, not cash" [participant 7]. Participants generally disliked credit card payments, as they often experienced delays in receiving earnings compared to cash transactions, which were instantly available. Some participants acknowledged the benefits of credit card payments, emphasizing its reliability compared to potential disputes over cash payments. To address these challenges, participants suggested expanding alternative payment methods, such as the use of STCPay.

3.2.2.2. *Challenges with Identity*

Participants raised concerns about identity fraud, emphasizing that riders often provided minimal information during registration, using fake names or genders. This presented challenges for captains, leading to instances where riders manipulated the system for free rides using discount codes for new users. Participants recommended improving registration processes by integrating rider IDs rather than relying solely on phone numbers, enhancing security and reducing fraud risks. Participants also discussed challenges in serving special needs clients, emphasizing the importance of allowing customers to register as special needs riders.

3.2.2.3. *Challenges with Rider Behavior*

Concerns about specific areas known for theft or unruly behavior were prevalent among participants. Some participants expressed reservations about picking up or dropping off customers in certain neighborhoods after specific hours. Another concern was riders' lack of awareness

when selecting ride types, especially when the captain's car was more luxurious, leading to higher trip costs.

3.2.3. *Theme 3: Effectiveness of Rating Systems in Ride-hailing Applications*

3.2.3.1 *Preferred Features on Rating Systems*

The most commonly favored feature reported by participants was the ability to suspend or block riders with negative comments and low score ratings. For instance, a participant using the "Wasslini" app, which caters exclusively to female clients, shared an incident: "One time I reached the destination to pick up the client, and it appeared that he is a guy registered under a woman's name. I reported it to the company, and they immediately blocked the user" [participant 9]. Another participant using the "Bolt" app mentioned, "Bolt is quite strict with their policies, and they act immediately if they discover that the complaint is true" [participant 1]. This illustrates the influential role of the rating system in enhancing the experience for captains. Additionally, participants expressed feeling valued when companies prioritized them by sending more riding requests compared to other captains due to their high scores. Some also mentioned, "if you complain that the customer didn't pay, the company will repay you" [participant 4]. A few participants believed that rating the customer was a requirement to receive the next request in some apps. "[In the Wasslini app], when you select the 'paid' option after dropping the customer off, the rating screen appears immediately, so you

have to rate after the trip, and I care about rating customers," said [participant 11]. This encourages drivers to take the rating step seriously to obtain a realistic rider score.

3.2.3.2 Limitations of Using Rating Systems

Female participants shared their views on Wasslini, the most popular female-only ride-hailing application, expressing concern that riders are not required to rate the captain, which they described as "unfair to the rider." Another limitation participants were concerned about is that in most applications, a high cancellation rate might have a detrimental impact on their scores. As one participant explained, "If your cancellation rate increases, your rating score will decrease. Accordingly, if your cancellation rate reaches a certain threshold, the company will stop sending you any new requests" [participant 6].

3.2.3.4 Criteria for Rating the Rider

Participants identified two important elements influencing how they rated the rider: payment and ethics. Payment considerations include: 1) failure to pay the exact fare or not paying at all; 2) selecting an incorrect payment method; 3) insisting on a different location to avoid extra charges. Ethical elements relate to overall rider hygiene, smoking in the car, leaving belongings behind, dirtying the car, rider attitude, theft from the car, and being under the influence of alcohol.

3.2.3.5 Areas of Improvement in Rating Systems

Participants suggested several key improvements for rating systems:

- Pairing captains with riders based on their rating scores.
- Display low-scale comments to other captains to prevent them from facing the same issues encountered by the previous captain.
- Since a list of complaints appears when a driver selects a low score, creating a clear option for "unpaid trips" would be beneficial.
- Recognizing that the cancellation rate may not always reflect negatively on the captain, as sometimes unforeseen circumstances may lead to cancellations.

4. Conclusion

This study sheds light on drivers' perspectives regarding their engagement in ride-hailing applications and suggests improvements to enhance their experiences. Through focus groups and thematic analysis, the study identified codes and categorized ideas into meaningful themes. Participants emphasized the positive impact of features like alternative payment methods, linking rider registration with their ID, and leveraging rating systems to match captains with riders based on their scores.

However, the study's generalizability is limited due to the relatively small number of conducted focus groups and the concentration of participants in three main regions of Saudi Arabia (Riyadh, Jeddah, and Dammam). To enhance future research, it would

be beneficial to include participants from various cities in Saudi Arabia. Additionally, emerging ride-hailing applications in the country should focus on refining standard features, particularly the rating system for both captains and riders, to reach the maturity level observed in established firms such as Uber and Bolt. Exploring the perspectives of local application owners, especially those from startup companies, could provide valuable insights into why certain rating system features are missing.

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