Consumer Perception and Decision-Making Mechanisms in Differential Pricing on Online Travel Platforms

Jiayi Tang[1*]

[1] College of International Tourism and Public Administration, Hainan University, Haikou, 570228, China

Abstract. With the development of the Internet, the differentiated pricing widely applied by online travel platforms has aroused widespread concern among consumers about price fairness. This study focuses on the influence mechanism of Qunar's differentiated pricing strategy on consumer behavior. Based on in-depth interviews with 20 users, the grounded theory method was employed to deeply analyze users' perception of differentiated pricing and the internal paths that influence decision-making. The research finds that consumers' perception is influenced by both the platform's pricing strategy and their own characteristics, and is transmitted through three core mediating variables: perception of fairness, perception of transparency, and judgment of economic value. These perceptions then drive consumers' information search behaviors, strategic responses, and complaint tendencies, ultimately influencing their consumption decisions. It is worth noting that non-price decision-making factors play a key regulatory role in this process. The research conclusion provides important practical inspirations and theoretical references for online travel platforms to optimize pricing strategies, enhance user satisfaction and loyalty, and achieve a win-win situation.

1 Introduction

The rapid development of the internet has led to significant changes in people's travel consumption habits. Online travel agencies (OTAs) have gradually become one of the main channels for booking travel products and services thanks to their convenience, efficiency and wealth of information. As China's leading OTA, Qunar has served over 200 million users through its ‘search and compare prices and personalised pricing’ model. The company applies differential pricing strategies across its business segments, including hotel bookings, flight tickets, and travel packages. These strategies include exclusive discounts for Black Whale members, regional dynamic pricing adjustments, and price differentials between new and existing users. However, the platform has faced ongoing controversy over 'big data price discrimination'. According to Black Cat Complaint data from 2023, complaints about pricing issues on the Qunar platform increased by 18% year-on-year. This highlights the importance

* Corresponding author: 20223005719@hainanu.edu.cn

of consumers' perception of pricing fairness in online travel consumption. Against this backdrop, it is significant to explore how consumers perceive Qunar's differential pricing, the impact of this perception on purchasing decisions, and how perception differs among various user groups.

This study aims to deconstruct the core perceptual dimensions of consumers' perceptions of differential pricing on the Qunar platform. It will reveal how perceptual levels influence purchasing decisions, including purchase intent, brand trust and repurchase behaviour. The study will also identify the moderating role of user characteristics, such as usage frequency and price sensitivity, in the relationship between perception and decision-making. In theoretical terms, this study will contribute to consumer fairness perception theory in the field of service pricing and extend the use of grounded theory in online travel agency (OTA) pricing research. In practice, it will provide Qunar and similar online travel platforms with empirical evidence to help them optimise their pricing communication strategies, reduce negative user perceptions and enhance user satisfaction and loyalty.

This study has significant theoretical, practical and social implications. Theoretically, it contributes to theories of consumer behaviour and pricing strategy. In practice, it helps platforms like Qunar to optimise their pricing and services. Socially, it can encourage consumers to view differential pricing more rationally and promote market regulation.

2 Current state of research

2.1 Theoretical and practical research on differential pricing

As a common marketing strategy, differential pricing has been the subject of extensive study in the fields of economics and marketing. From a theoretical perspective, scholars have examined it from various angles. From an economic perspective, differential pricing is based on differences in consumers' perceptions of the value of products or services, as well as variations in demand elasticity. Companies segment consumer groups and set different prices for different segments to maximise profits [1]. In practice, differential pricing is widely used in industries such as aviation, hotels and tourism.

2.2 Research on consumer perceptions of differential pricing

Studies have shown that consumers' perception of differential pricing is affected by a variety of factors. On the one hand, consumers' own characteristics, such as age, income, educational attainment and consumption experience, affect their sensitivity to and understanding of price differences. On the other hand, the transparency of the enterprise's pricing strategy, the degree of information asymmetry, and the competitive situation in the market also have an important impact on consumer perception [2]. When consumers perceive price injustice or feel they have been treated unfairly, they experience negative emotions, which affects their attitude and brand loyalty [3].

2.3 Research on the differential pricing strategies of online travel platforms

In recent years, as online travel platforms have become more prevalent, scholars have started to examine their differential pricing strategies and how consumers react to them. These platforms utilise big data and algorithmic analysis to understand consumer preferences, consumption behaviour and willingness to pay, thereby enabling precise pricing. While this big data-driven differential pricing approach enhances resource allocation efficiency and provides consumers with personalised products and services, it may also lead to concerns

about price fairness and privacy protection [4]. While some studies have found that online travel platforms' differential pricing strategies may boost corporate profits, others have found that they may also trigger consumer dissatisfaction and trust crises, thereby impacting the platforms' long-term development [5].

In summary, while existing research has examined the theoretical basis, practical applications and consumer perceptions of differential pricing, more empirical research is required into the differential pricing strategies of particular online travel platforms (e.g. Qunar) and their effect on consumer perceptions. Existing research is limited in its ability to reveal the specific characteristics, influencing factors and consumer behavioural responses related to consumers' perceptions of differential pricing on online travel platforms. Therefore, this study uses Qunar as a case example, conducting consumer surveys and interviews to analyse consumers' perceptions of differential pricing and its influencing factors in depth. The aim is to provide valuable insights for businesses and consumers alike, with significant theoretical and practical implications.

3 Case study method

This study uses a longitudinal single-case analysis method to conduct an in-depth analysis of differential pricing on the Qunar platform [6]. Qunar is a well-known brand with a large user base in the online travel market. It offers a wide range of travel product bookings, including flights, hotels and vacation packages. Its differential pricing strategies are widely adopted and take various forms, such as member vs. non-member pricing and new vs. existing user pricing. These strategies are representative of those commonly adopted by online travel platforms. Consequently, the conclusions drawn from this analysis are representative of the wider industry and have practical value.

Additionally, Qunar has a long development history, having accumulated a large amount of user data and market feedback information. Furthermore, user perceptions and experience data regarding the platform's differential pricing can be obtained relatively easily through in-depth interviews, facilitating longitudinal research and continuous tracking of how consumer perception capabilities and influencing factors evolve over time and in response to changes in platform strategies.

4 Research process

4.1 Data collection

The data for this study was primarily collected through interviews with users of the Qunar platform. Purposive sampling was used to select users of different ages, educational backgrounds, occupations and income levels, as well as those with different usage frequencies and scenarios, resulting in a total of 20 interview transcripts.

These in-depth interviews were conducted in a semi-structured format and focused on users' experiences of the Qunar platform, their perceptions of its differential pricing, how pricing strategies influence their consumption decisions and their suggestions for its pricing. This approach provided interviewees with sufficient space to express themselves, enabling the collection of rich, in-depth qualitative data while ensuring the interviews remained focused on the research themes. To ensure data reliability, all interviews were promptly recorded and transcribed into written transcripts after the interviews. Once all the interviews had been completed, 15 transcripts were randomly selected for procedural coding and the construction of a conceptual theoretical model, while the remaining five were used for

theoretical saturation testing. The basic statistical information of the sample subjects is shown in Table 1.

Table 1. Overview of Respondent Information

Item	Category	Sample Quantity	Percentage (%)	Item	Category	Sample Quantity	Percentage (%)
Gender	Male	7	35.0	Monthly Income	Below 2000 RMB	5	25.0
	Female	13	65.0		2000 - 5000 RMB	7	35.0
Educational Background	High school and below	0	0.00		5000 - 10000 RMB	6	30.0
	specialist	2	10.0		Above 10000 RMB	2	10.0
	Undergraduate's degree	12	60.0	Occupation	civil servants and teachers	4	20.0
	Master's degree or above	6	30.0		corporate employees	4	20.0
					Other Job	4	20.0
					Students	8	40.0

4.2 Grounded theory coding and theoretical model construction

This study uses the grounded theory method to conduct an in-depth analysis of interview transcripts. Through procedural coding, the raw data is systematically marked with conceptual labels on a line-by-line and sentence-by-sentence basis, gradually distilling key concepts. This process comprises three steps: open coding, axial coding and selective coding. This method enables precise identification of core themes within the data, such as consumers' perception levels and the factors influencing differential pricing. It also serves as the basis for constructing a theoretical model. This process aligns with the core principles of grounded theory, which emphasises generating theory through systematic data analysis to enhance the scientific rigour and explanatory power of research [7].

4.2.1 Open coding

This involves conceptually labelling raw data line by line and sentence by sentence in order to extract theoretical concepts. The purpose of this process is to identify key concepts and potential socio-psychological processes in the data, forming the basis for a theoretical conceptual model [8]. This study analysed 15 interview transcripts individually, extracting 158 raw concepts and summarising them into 28 categories, some of which are shown in Table 2.

Table 2. Open-ended coding categorisation (partial examples)

Category Summarization	Original Concept	Typical Interview Basis
Membership benefits and price correlation	Exclusive member discounts, points redemption	'After purchasing a membership, the reservation price is several dozen yuan cheaper' (Ms. Li, interview transcript 1)
Price differences between new and existing users	First-time user discount, no subsidy for existing users	'New users pay 50-90 yuan less than existing users' (Ms. Zhang, interview transcript 2)
Geographical differentiated pricing	Regional IP pricing, differences in consumption levels	'Shanghai All Seasons Hotel is more expensive than Changsha, and the city centre is more expensive than the suburbs' (Ms. Gu, interview transcript 4)
Equipment Type Pricing	Device model (Apple/Android) Price difference	'Apple phones are priced 40 yuan higher than Android phones' (Mr. Ou, interview transcript 7)
Time-based dynamic pricing	Holiday surcharges, dynamic inventory price adjustments	'Hotel prices rose by 80 yuan in the week before National Day' (Ms. Wang, interview transcript 14)
Perception of fairness	Psychological imbalance, declining trust	'Old users do not get the same discounts as new users, which makes me feel like I'm being treated differently' (Ms. Li, interview transcript 1)
Price comparison behaviour	Multi-platform price comparison, cross-device search	'Compare prices on Qunar, Ctrip, and Fliggy at the same time' (Mr. Ou, interview transcript 7)
Platform interaction behaviour	Customer service feedback, complaints and refunds	'Received a coupon after contacting customer service' (Ms. Zhang, interview transcript 2)
Product support services	Cancellation and change policy, free baggage allowance	'Whether the refund and cancellation policy is reasonable affects future use' (Ms. Wang, interview transcript 3)
Price sensitivity	Income levels affect consumers' price sensitivity.	'Students are price-sensitive, and frequent users are more concerned about membership discounts' (Ms. Lin, interview transcript 5; Ms. Li, interview transcript 1)

4.2.2 Axial coding

Axial coding is a crucial step in the grounded theory method. The core task is to identify relationships among the concepts generated through open coding and to organise and connect these concepts in order to form more abstract main categories or themes. This lays the foundation for subsequent selective coding [9]. Using the 'phenomenon – cause – effect' logical chain, the 28 categories were integrated into six major categories, the hierarchical relationships of which are shown in Table 3.

Table 3. Main categories formed by the main axis coding

Main category	subcategory	Connotation of categories

Differential pricing strategy	Membership Tier Pricing	The higher the membership level, the more preferential the accompanying services and prices will be.
	Price differences between new and existing users	New users will receive welcome bonuses and other preferential policies.
	Geographical/ equipment differences	The platform sets different prices for people in different regions. The platform sets different prices for tourism products in different regions.
		There are price differences between users of different mobile phone brands, such as Apple and Android phones.
	Time-based dynamic pricing	The same travel product may have different prices at different times.
Consumer perception	Perception of fairness	Consumers believe that price differences are unfair to them.
	Perceived price transparency	Consumers believe that the platform's pricing is not sufficiently transparent and that its mechanisms are secretive.
	Economic value judgement	Consumers believe that economic conditions are insufficient to support consumption.
Behavioural response	Information retrieval	After discovering price differences, users will search online for information about travel products and their prices.
	Strategic response	After discovering price differences, users will use registered secondary accounts or purchase using friends' or family members' accounts to obtain more favourable prices.
	Platform transition	After discovering the price difference, users will choose to purchase products on other platforms.
	Feedback complaints	After discovering price differences, users will choose to provide feedback or file complaints with the platform's customer service.
	Price comparison	After discovering price differences, users will choose to open multiple OTA platforms to compare prices.
Consumer decision-making	Purchasing decision	Users decide to purchase travel products on the Qunar platform.
	Membership upgrade	Users decide to upgrade to a Qunar platform membership to obtain more benefits.
	Platform loyalty	Users decide to continue using the Qunar platform to purchase travel products.
Consumer characteristics	Price sensitivity	Users with low income levels may be more price sensitive.
	Frequency of platform use	Frequency of using the Qunar platform
	Consumer preferences	Consumers' preferences for tourism products, such as hotel brands and aircraft models.

Other influencing factors	Platform after-sales service	The speed and ability of the platform to handle issues.
	Product support services	The quality of the product itself and the accompanying services.
	Operational interface operability	Whether the user interface is simple and straightforward.

4.2.3 Selective coding

This involves further refining and integrating the categories formed through main axis coding, in order to identify the 'core category' that encompasses the others. A 'storyline' is developed to connect the main and subcategories, depicting all contextual conditions and behavioural phenomena and forming a theoretical framework [10]. The relational structure of the main categories is shown in Table 4.

Table 4. Typical relationships between main categories

Differential pricing strategy → Consumer perception	The platform's implementation of a differentiated pricing strategy (based on membership status, new or existing customers, region/device, and time) can elicit various perceptions among consumers, such as perceptions of fairness, price transparency, and economic value.
Consumer characteristics → Consumer perceptions	Consumers' personal circumstances, such as income, also influence their perception of platform pricing.
Consumer perception → Behavioural response	Consumer perceptions trigger a series of behavioural responses, such as price comparisons across multiple platforms and information searches.
Behavioural response → Consumer decision	Users respond to price differences by comparing prices across multiple platforms and switching platforms, which ultimately affects consumers' purchasing decisions, membership consumption, and long-term loyalty to the Qunar platform.
Other influencing factors → Consumer decisions	In addition, other non-price factors, such as the quality of tourism products and platform user reviews, also influence purchasing decisions.

Through the continuous analysis and synthesis of primary and secondary categories, the 'consumer perception-reaction-decision model for OTA platform differential pricing' can be derived, as illustrated in Figure 1. The narrative surrounding this model can be summarised as follows: In the context of OTA platform consumption, the diversity of Qunar's pricing strategies and the individual characteristics of platform users influence consumer perceptions jointly. Users then perceive the platform's differential pricing strategies and form judgements regarding fairness, transparency and economic value.

Based on these perceptions and judgements, users may search for more information or respond strategically, ultimately influencing their decision-making. Specifically, they may alter their purchase choices due to price differences, cancel membership renewals or reduce their loyalty to the Qunar platform. These behaviours constitute the outcome variables. Additionally, non-price factors such as the quality of travel products and user reviews on the platform also influence purchase decisions. The combined influence of these factors ultimately affects users' long-term loyalty to the Qunar platform.

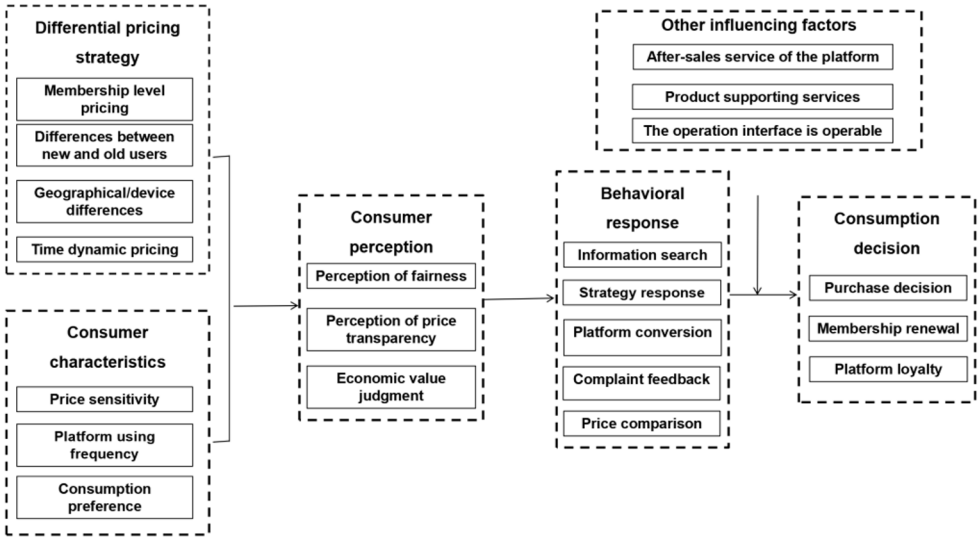

Fig. 1. Mechanism model of the impact of differential pricing strategies on user consumption decisions.

4.2.4 Theoretical saturation test

A theoretical saturation test was conducted on the remaining five interview transcripts. After open, axial and selective coding, no new concepts that would affect the main categories were identified. All content could be covered by the six main categories, indicating that the theoretical model constructed in this study has reached saturation.

5 Explanation of the theoretical model

In the consumption scenarios of the OAT platform, pricing strategy diversity and user characteristics jointly constitute causal conditions. Pricing strategies include various forms, such as membership tier discounts and new customer subsidies, while user characteristics include aspects such as price sensitivity, platform usage frequency, and consumer preferences. These factors collectively influence the core phenomenon whereby users perceive differential pricing strategies, including price differences across dimensions such as membership tier, new or existing user status, region or device, and time. This process leads to the formation of perceptions of fairness, transparency, and economic value.

In this process, these perceptions serve as core mediating variables, playing a crucial role. For instance, offering higher discounts to new customers than to existing ones can lead to users perceiving a lack of fairness, resulting in dissatisfaction. Similarly, opaque pricing logic can reduce users' perception of transparency, thereby lowering their trust in the platform. Furthermore, significant price discrepancies between the platform and other OTAs can impact consumer decision-making psychology.

Based on these perceptions, users may engage in information-seeking behaviours or strategic responses, such as comparing prices across multiple platforms to get better deals, or using their new user status to access discounts. Ultimately, these behaviours influence users' decisions regarding purchases, renewals and loyalty, potentially resulting in changes to purchasing choices due to price differences, abandonment of membership renewals or reduced loyalty to the Qunar platform. These behaviours constitute the outcome variable: users responding to price differences through cross-platform price comparisons, switching

platforms, and other behaviours. Other non-price factors also influence purchasing decisions, such as the quality of travel products and platform user reviews. Under the combined influence of these factors, users' long-term loyalty to the Qunar platform is affected.

6 Practical implications

This study has multiple practical implications for the Qunar platform's operational practices, helping to optimise pricing strategies, enhance user satisfaction and loyalty, and strengthen market competitiveness. The following sections provide a detailed analysis of several key areas:

6.1 Enhancing pricing transparency

The Qunar platform should enhance the transparency of its pricing mechanisms by clearly displaying the pricing components, including base prices, member discounts, new user subsidies and dynamic pricing rules for specific time periods or regions. For instance, the platform could clearly label the discount levels corresponding to different membership tiers on the booking page for member-exclusive discounts. When it comes to differentiated pricing strategies targeting new and existing users, the platform should provide detailed explanations of its innovative user subsidy policies, ensuring that consumers can easily understand the reasons behind price differences during the booking process. This approach reduces suspicion and dissatisfaction caused by a lack of transparency, enhances consumer trust in the platform and increases booking intent and loyalty.

6.2 Optimise the membership benefits system

Qunar needs to re-evaluate its system to ensure that membership levels are aligned with the corresponding benefits, and to increase rewards for loyal users in a reasonable way. The platform could increase the variety of exclusive benefits for members, such as providing premium members with free access to airport lounges and hotel upgrades. It should also optimise usage rules for benefits, simplify the points redemption process and enhance the practicality and appeal of points. This would allow members to genuinely feel the value of their membership status and increase membership renewal rates and loyalty.

6.3 Strengthen user communication and feedback response mechanisms

The Qunar platform must establish efficient and convenient user communication channels. The platform should establish a dedicated customer service team responsible for promptly addressing consumer enquiries and complaints regarding price discrepancies and ensuring that clear and reasonable explanations and effective solutions are provided as soon as possible. For example, when consumers question price discrepancies between new and existing users, customer service personnel should respond swiftly by explaining the reasons for the price differences based on the platform's established pricing rules. They should also provide compensation measures when necessary, such as issuing coupons, to alleviate consumer dissatisfaction and maintain the platform's positive image.

7 Conclusion

This study, based on the GoWhere platform's differentiated pricing strategy, conducted in-depth interviews with 20 users using the grounded theory method to analyse consumer

behaviour and psychology in depth. The study then constructed the 'Consumer Perception-Response-Decision Making Model of Differentiated Pricing on OTA Platforms'. The study found that the platform's differential pricing strategy and users' characteristics jointly affect consumers' perceptions of fairness, transparency and economic value, which directly influence their behaviour, such as searching for information, responding to strategies, switching platforms and providing feedback and complaints. Ultimately, this plays a role in users' consumption decisions. Additionally, non-price decision-making factors exert a moderating influence on users' consumption decisions.

This study makes dual contributions to theoretical and practical fields. Theoretically, it constructs a 'perception-reaction-decision' model of consumer behaviour in response to differential pricing on OTA platforms. This enriches theories of consumer behaviour and pricing strategy and expands the application of grounded theory in OTA pricing research. Practically, it provides specific suggestions for online travel platforms to optimise their pricing strategies and enhance user satisfaction and loyalty. It also helps consumers to view the phenomenon of differential pricing more rationally and enhances their self-protection awareness and decision-making ability.

The limitations of this study lie primarily in the scope of the sample and the subjective nature of the data. Only users of the Qunar platform were used as research subjects, which may limit the generalisability of the conclusions drawn from the research. Furthermore, the data obtained through in-depth interviews is somewhat subjective, which may affect the objectivity of the research results. Future research could expand the scope of the sample and incorporate quantitative research methods to further test the generalisability and stability of the model. Furthermore, as technology evolves, so too do differential pricing strategies. Future research should continue to monitor the application of new technologies in differential pricing and their impact on consumer behaviour.

Overall, this study provides valuable insights and recommendations for optimising pricing strategies and protecting consumer rights on online travel platforms by offering an in-depth analysis of consumers' perceptions of differential pricing on the Qunar platform and the underlying mechanisms.

References

1. H. R. Varian, Price discrimination and market power. RAND Journ. Econom. **20**(1), 11-25 (1989)
2. S. Dutta, et al. Consumer response to dynamic pricing: A meta-analysis. Journ. Mark. **81**(4), 1-18 (2017)
3. H. Xu, et al. Consumer perception of price fairness in online retailing. Journ. Interac. Mark. **41**, 1-12 (2018)
4. J. Zhang, Y. Liu, Big data analytics and price discrimination in online travel platforms. Journ. Serv. Resear. **22**(3), 234-249 (2019)
5. Y. Liu, et al. Dynamic pricing in online travel platforms: A review and future research directions. Tour. Manag. **78**, 103987(2020)
6. A. Stakoe, Marketing theory's methodological identity: Paradigms, grounding theories, and the replication crisis. Journ. Mark. Manag. **30**(9-10), 1048-1075 (2014)
7. A. Langley, Strategies for theorizing from process data, Acad. Manag. Rev. **24**(4), 691 - 710(1999)
8. B.G. Glaser, A. L. Strauss, The discovery of grounded theory: Strategies of qualitative research. Nurs. Resear. **16**(4), 377-380 (1967)
9. K. Charmaz, Constructing grounded theory. Sage Publications. (2014)

10. Y. Z. Guo, Development models, challenges, and countermeasures for government-led data trading platforms: A study based on classic grounded theory. Journ. Inform. Resour. Manag. **14**(2), 29–40(2023)