

Airfare Yes, Beverage No: The Influencing Factors and Situational Analysis of the Effectiveness of Dynamic Pricing

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Abstract. This study explores why surge pricing is widely accepted in industries such as air travel and hospitality, but often resisted in the daily retail sector. Through the comparative analysis of typical industries such as air travel, online car-hailing, catering and fast food, this paper identifies the key factors affecting the effectiveness of dynamic pricing, and proposes a “Two-dimensional framework”. Type A factors (supply and demand fluctuations and product attributes) determine whether the price can change, and type B factors (fairness perception and communication governance) determine whether the price can be accepted. The interaction of these two factors determines the sustainability and social legitimacy of dynamic pricing. It is found that transparent information communication, predictable rules and compensation mechanism are the core conditions for establishing consumer trust; on the contrary, the opacity of the algorithm or the lack of fair interpretation will weaken its legitimacy. This paper points out that dynamic pricing is not only an algorithm optimization problem, but also a social governance mechanism, which needs the support of transparency, explanation and compensation.

Keywords: dynamic pricing, fairness perception, transparent governance, consumer trust.

1. Introduction

In daily life, the attitude of consumers to dynamic pricing is significantly different among different industries. Airfares and hotel price increases during the peak season are often seen as a normal response to tight supply and demand, while temporary price increases for everyday consumer goods such as drinks at convenience stores are prone to “Unfair” resentment. This shows that the price acceptance is not determined by the increase, but depends on the product attributes, supply and demand structure and the way merchants communicate. When the resource is difficult to expand and the demand fluctuates greatly, the price is understood as “Distribution scarcity”; in the scenario of abundant supply and abundant substitution, the price increase is more likely to be interpreted as “Abuse of power”.

Differential pricing theory shows that pricing based on willingness to pay and situational differences can improve efficiency, but it may also touch the boundary between ethics and trust [1]. The spread of algorithmic pricing has increased the agility of price adjustments and amplified consumer concerns about opacity. Behavioral economics points out that individuals generally dislike inequity, and when the rules are unclear or the results are biased, consumers often choose to reject

the transaction as “Punishment” [2]. The success or failure of dynamic pricing therefore depends on achieving a balance between the “Scarcity” and “Fairness” narratives [3]. In reality, enterprises often confuse “Implementability” with “Acceptability”. The former is about whether technology can support real-time pricing; the latter is about whether mechanisms are transparent, reasons are easy to understand and alternatives are available to consumers. If the two are out of touch, there may be “Correct algorithm but social failure” or ignore the dual constraints of efficiency and trust due to excessive worry emotional reaction.

Accordingly, this paper aims to identify the key factors that affect the effectiveness of dynamic pricing, including the decisive role of supply and demand structure and product attributes on feasibility. The impact of governance and communication mechanism on psychological acceptance and how the differences in the combination of the above factors in different industries form different dynamic pricing performance. This paper attempts to explain the institutional logic of “Why air tickets are allowed but drinks are not”. This article is not a defense of price increases, but to explore the conditions under which price increases are more reasonable. From the perspective of efficiency, dynamic pricing can improve the allocation of resources; from the perspective of fairness, transparent and predictable mechanisms help maintain trust. The tension between the two constitutes the core challenge of pricing management. The analytical framework of this paper aims to translate principles into actionable judgment and communication strategies.

In the research design, this article through the cross-industry case comparison. One is the airline and hotel industry with rigid capacity and fluctuating demand; the other is the fast-moving consumer goods with stable supply and high substitution; and the service industry between the two, such as online car-hailing and instant delivery. By comparing the differences in the supply and demand structure and governance mechanism of these industries, this paper shows the applicability boundary of dynamic pricing and reveals its effectiveness differences in different scenarios.

2. Research design and methodology

This study adopts the empirical comparison method, taking the cross-industry case analysis as the core, and reveals the conditional differences in the formation of dynamic pricing effectiveness through the comparison of typical situations. The purpose of this study is not to verify the statistical significance of a particular model, but to describe the similarities and differences between different industries in terms of “Moveability” and “Acceptability” through structured comparison.

In order to ensure the representativeness and comparability of the sample, the case selection follows three criteria. First, there are significant differences in the structure of supply and demand in the selected industries, which is enough to show the strength of scarcity and substitution. Secondly, the relevant industries have formed a more mature dynamic pricing or price stratification mechanism, which is convenient to observe the actual communication and governance path. Third, there is a significant difference in acceptance between public opinion and consumer feedback.

In this study, four typical scenarios are selected and corresponding to different dynamic pricing scenarios. Air travel and hotel industry is a highly volatile and scarce industry, which is “Mobile and generally accepted”, while performance and ticketing market has strong supply rigidity and moderate governance ability, which is “Mobile but needs to be guided” The price of online car-hailing and real-time delivery services is sensitive, the demand fluctuates greatly, and the communication is weak, which is “Movable but controversial”; The supply and demand of convenience drinks and fast moving consumer goods is stable, substitutable and price sensitive, showing the situation of “No move price or limited effect of move price”. This study takes A-type factors (supply and demand and product attributes) and B-type factors (fairness perception and

communication governance) as the main analysis axis, and constructs a two-dimensional framework for comparison. Data sources include corporate disclosure policies, media reports, consumer sentiment, and more. The analysis path follows the logic of “Situational characteristics-dynamic pricing mechanism-consumer response-effectiveness assessment”, and summarizes regular conclusions through cross-case comparison, structural conditions for revealing the applicable boundary of dynamic pricing.

2.1. Factor A: the difference between supply and demand and product attributes

Factor A answers the question of whether prices can move, reflecting the structural premise of dynamic pricing. The composition of supply and demand, inventory form and product characteristics of different industries determine whether the price mechanism has a regulatory function, and also affect whether consumers regard price fluctuations as part of market rules.

2.1.1. Demand volatility and predictability

Demand volatility is the basis of dynamic pricing [4]. Air travel and hotel industry demand changes have the characteristics of time concentration, seat and room scarcity is obvious, the price is seen as a “Balance of resources” signal. By contrast, demand for beverages and commodities is steady, price expectations are stable, and any temporary price increases are likely to be seen as “Out of line” with supply and demand. Whether prices can be understood as market reactions depends on the visible cycle and logic of demand fluctuations. Predictability is also key. If consumers can expect price changes, such as “Price rise before the holiday and fall after the holiday”, dynamic pricing is easy to be regarded as an institutionalized rule; if the changes are irregular and there is no expectation anchor, it will be regarded as arbitrary fluctuation.

2.1.2. Transferability and scarcity of inventory

Inventory characteristics determine whether the price can play the role of resource allocation. Airline seats, concert tickets, and hotel rooms are disposable and time-sensitive, and cannot be sold or delayed. Price movement is not only a tool for profit, but also a tool for allocating scarce resources, consumers can understand its reasonableness. On the contrary, beverage and commodity stocks are highly transferable, and any short-term price increases lack the legitimacy of scarcity. Scarcity is not only a physical property but also a subjective perception of the consumer. The airline travel industry reinforces the sense of scarcity by displaying the remaining seats and counting down to make price changes seem natural, while the fast-moving consumer industry lacks such signals, and price adjustments are difficult to get narrative support.

2.1.3. Substitutability and timeliness

The function of dynamic pricing is to optimize the matching of supply and demand, especially under the timeliness constraint. When the use time of goods or services cannot be replaced, the price adjustment space is larger. In the scenarios of flights, shows and so on, consumers are willing to tolerate price fluctuations in exchange for instant availability. In contrast, consumers are more sensitive to price changes for products with strong substitution such as convenience drinks, and the revenue function and legitimacy of dynamic pricing are reduced.

2.2. Type B factors: fairness perception and communication governance

If factor A defines the physical conditions of dynamic pricing, factor B embodies its social boundaries. The social effectiveness of the price mechanism depends not only on supply and demand and algorithm design, but also on whether it can be understood and trusted. Category B factors determine whether surge pricing makes psychological sense.

2.2.1. Sense of fairness and transparency: from fluctuations to rules

Consumers are not repelled by price fluctuations, but by unwarranted fluctuations. In the air travel and hotel industries, fare fluctuations are institutionalized, price differences are open, consumers can query and compare, and price fluctuations become a predictable rule. In contrast, the temporary price increase of convenience stores or delivery platforms lacks advance notice, and consumers cannot predict the increase or judge the standard, thus treating the price increase as an arbitrary behavior of merchants. Transparency is not only about information disclosure, but also about turning price volatility from an “Event” into a “Institution”.

2.2.2. Communication and interpretation mechanism: social construction of legitimacy

The communication mechanism is a bridge to translate price behavior into an understandable narrative. If the online car-hailing platform clearly shows the reasons for the rise in prices during the peak period, consumers will be more receptive; if it only shows “Price rise”, it is easy to be interpreted as profit-seeking. When the ticketing platform sets different price levels, it is easy for consumers to understand the price fluctuation if the cost composition of the layered ticket price is explained. Communication is not only an ex-post explanation, but also a “Pre-notification”, such as setting price ceilings and trigger conditions, so that consumers can form expectations in advance and reduce psychological uncertainty. Price changes without advance notice, especially in the field of consumer goods and people's livelihood, can easily lead to negative public opinion.

2.2.3. Remedy and alternative mechanism: the rebalancing of trust

When price fluctuation is inevitable, remedy mechanism is the key to trust rebuilding. Consumers want to feel a sense of control when prices are bad. The design of “Price insurance mechanism”, “Price difference refund” and “Points compensation” of air travel and e-commerce platform makes consumers feel that although the price fluctuates, it is not completely at a disadvantage. Taxi-hailing and take-away platforms partly compensate for the negative sentiment brought about by price fluctuations through coupons, point deductions and other means. The remedy mechanism itself is also a kind of relationship investment. Rather than lowering the price, providing predictable guarantee is more conducive to promoting customer loyalty and maintaining price elasticity. Immediate Price rises, which lack a remedy mechanism, could exacerbate consumer dissatisfaction and turn into brand boycotts and public opinion risks.

3. Case and scenario analysis

In the previous paper, the effectiveness of dynamic pricing is defined as the interactive result of “Hard conditions of supply, demand and product attributes (type a factors)” and “Soft conditions of fair communication and governance (Type B factors)”. The former focuses on the response “Can move price”, the latter response “Cannot move”. If both conditions are satisfied, dynamic pricing

can achieve the goal of revenue management in the economy and obtain the recognition of fairness in the society. If one of the conditions is missing, the price mechanism may be technically established, it is hard to maintain long-term trust and market stability. This section will take four typical industry cases as clues, compare the different combinations of A and B conditions, and discuss the operation logic and boundary of dynamic pricing in reality.

3.1. Quadrant 1: A strong + B strong-mobile and accepted industries (air travel and hospitality)

Air travel and hotel industry are the classic models of dynamic pricing, and also one of the few industries in which price fluctuation is allowed by society. Take Delta Airlines as an example, its revenue management system has been formed in the 1980 s, based on historical sales data, seat margin, holiday distribution and market demand elasticity for hierarchical fare control [5]. Passengers in the booking to see different seats and time corresponding to the price gradient, the earlier the purchase, the lower the price, near the trip, the higher the price. This difference reflects fluctuations in supply and demand, and constructs the “Rule of predictability”.

There are three core features of this institutionalized price float. First, price volatility is predictable, following the rules of the holiday cycle and the time window to calibrate consumer expectations. Secondly, the price is fully explanatory, airlines through statements, official website tips and ticket policies to help passengers understand the “Advance planner benefits” logic. Finally, communication is sufficient, and ticketing platforms and price comparison sites transparently display seat allowances and price trends. Consumers see price differences as a “Natural reflection of the market” rather than arbitrary decisions by companies. As previous studies have pointed out, cost transparency affects consumers' purchase intention by enhancing their perception of price fairness [6].

A similar story is unfolding in the hospitality industry. Marriott International's dynamic pricing system combines variables such as occupancy date, city activity density, room type scarcity and membership grade for dynamic pricing [7]. During large conferences or holidays, prices automatically rise, and display “Local activities lead to housing shortage”, “Price fluctuations range” and other tips. Through pre-communication and multi-level interpretation, hotels incorporate price changes into the “Resource allocation” narrative rather than profit manipulation. From the perspective of Class A, the inventory of air travel and hotel cannot be stored and the demand fluctuates strongly; from the perspective of Class B, the inventory of air travel and hotel cannot be stored and the demand fluctuates strongly, information disclosure, narrative integrity, remedy mechanism (such as advance booking discount, points return) is more perfect. The combination of the two makes such industries ideal quadrants to be “Mobile and accepted”. Although consumers are not necessarily happy with price increases, they have incorporated them into institutional common sense in their cognition.

3.2. Second quadrant: A strong + B weak-mobile but communicative industries (ride-hailing and instant delivery)

The second quadrant is typically characterized by strong fluctuations in industry supply and demand, inventory cannot be stored, and structural conditions for dynamic pricing, but lack of communication mechanisms and governance transparency, resulting in efficient price adjustment, but it raises questions of trust and fairness. Uber and Didi are representative of this quadrant. Uber's surge pricing automatically raises prices when supply and demand are out of balance. The algorithm

sets a premium multiple based on the ratio of passengers to drivers in the area, aiming to attract more drivers online through price signals [8]. Early practice shows that the mechanism is very effective in operational efficiency, especially in rush hours, the waiting time is significantly shortened, and the driver response rate is improved. But while most users understand the logic of supply and demand, there is a widespread aversion to “Algorithmic black boxes” and “Unlimited premiums”. In other words, the price mechanism is reasonable, but the psychological mechanism is not.

The situation in Didi is more social. Since 2018, Didi has explained peak mark-up rules through pop-ups and announcements, such as “The current mark-up range is 0-15 yuan” or “The peak premium coefficient is 1.5 times the upper limit”. However, many users still believe the platforms are “Manipulating prices”. The root cause is that the opacity of the algorithm undermines user trust, despite the fact that mark-ups follow the logic of matching supply and demand this contradiction of “Rational feasibility but emotional imbalance” reveals the double risk of dynamic pricing: social backlash brought by technological optimization. Uber has partially mitigated the controversy by implementing a “Surge Cap” policy after 2019, setting a maximum premium multiple and displaying a real-time coefficient change curve on the App interface. Didi has also introduced a “Driver subsidy mechanism” to replace direct price increases during extreme weather and holidays, allowing supply and demand adjustments to take a milder form the key problem of this quadrant lies in the lag of communication and the absence of narrative. If the price rise is not clearly explained, it is easy for consumers to interpret as platform behavior; if the “Scarcity logic + cap constraint + compensation mechanism” can be provided, the public will be easier to understand. The social legitimacy of dynamic pricing depends not only on the accuracy of the algorithm, but also on its ability to tell a story. In companies that lack narrative ability, algorithms are the focus of controversy. Such industries are defined as “Mobile but strong communicators”, and their effectiveness depends on platforms translating “Data decision-making” into “Social Communication”.

3.3. Quadrant 3: A weak + B strong -- structurally designable pricing under limited price mobility (beverage and catering retail)

The third quadrant is characterized by stable supply and demand, strong substitutability, lack of structural basis for real-time dynamic pricing, but with high governance and communication capabilities. Such companies maintain revenue management functions through price flexibility through structured differential pricing, time stratification or membership.

Take Starbucks as an example, the brand has maintained a stable price tag for a long time, but it has achieved dynamic differences through institutional design. Consumers in different time periods, use different channels or have different membership levels, the price and equity portfolio is different. For example, “Star card points” mechanism through the change in the rate of reward points, festival limited concessions, so that the price flexibility into “Loyalty rewards. Firms attribute the difference to “Gratitude to members” and “Time-bound activities,” endowing the price difference with emotional legitimacy, and consumers view the difference as part of relationship maintenance [9]. A similar strategy can be seen at McDonald’s. Its “Breakfast special”, “Package price difference”, “Membership day promotion” are institutionalized poor [10]. McDonald’s has formed a sense of regularity in consumers’ time cognition through nationwide publicity and predictable discount cycles, and price fluctuations have played a similar stabilizing role in psychology as the airline industry. This “A weak b strong” model shows that even if dynamic pricing is technically meaningless, companies can still achieve “Perceived resilience” through structural design. Under the constraint of fairness, the “Perceived equilibrium” is realized through

the reward mechanism or hierarchical compensation, and the consumer utility and enterprise income are improved. The practice of Starbucks and McDonald's shows that institutionalized differential pricing can itself become a governance innovation, replacing price fluctuations with emotional narratives, and achieving long-term trust.

3.4. The fourth quadrant: A weak + B weak -- failure of dynamic pricing and crisis of trust (convenience retailing)

When the supply and demand structure is stable, the substitution is strong and the governance mechanism is missing, dynamic pricing cannot improve efficiency, but becomes the source of brand risk. Some Chinese convenience store brands have experimented with automatic price increases based on temperature and time variables: drinks cost 0.5 to 1 yuan more when the temperature rises above 30 °C. Merchants hope to fine-tune earnings through a "Weather premium". However, the practice is widely seen by consumers as an infringement of price fairness in everyday life, and social media has been flooded with comments about being "Ripped off by algorithms". Within a week, the system was taken offline. This case reveals the double failure when a and B conditions are insufficient at the same time: in the supply and demand structure, the supply of beverages is sufficient, the inventory can be replenished at any time, and there is a lack of scarcity support; in terms of governance, the enterprise does not communicate in advance, there is also no cap or explanatory text, making price changes seem illogical. In consumer psychology, beverage prices are seen as a social reference, and price stability is a basic expectation. When that expectation is breached, behaviour is interpreted as moral transgression rather than market regulation. In addition, the case also reflects blind spots at the governance level. Technical teams view price algorithms as efficiency tools, but ignore the social implications of price [11]. Unlike air travel, FMCG price is not a simple transaction signal, but a trust contract. When price stability is disturbed, the breakdown of trust usually exceeds earnings growth by a factor of several dozen. Therefore, in the context of a weak B weak, dynamic pricing not only does not help to optimize the income, but also becomes the trigger of brand crisis.

3.5. Industry comparison and comprehensive enlightenment

Through the case analysis of four quadrants, the effectiveness of dynamic pricing depends on the matching degree between the realistic basis of supply and demand structure and the maturity of governance mechanism. In industries such as air travel and hotels, price fluctuations are closely linked to scarce resources, with high transparency, complete narratives, and mature remedy mechanisms. Although consumers are sensitive to price increases, they agree with the logic of "Resource allocation", forming "Institutionalized acceptance".

In the field of online car-hailing and instant distribution, the market structure also has the characteristics of fluctuation, but the governance is lagging behind. The lack of an explanation and upper bound on the algorithm results in a perceived imbalance between reasonable prices. Effectiveness depends on the platform's ability to translate "data decision making" into "social communication". In the beverage and FMCG industry, the stability of supply and demand makes dynamic pricing base, but brands create perceived differences through structural design, such as Starbucks rewards points, McDonald's time slots, etc. , become a new competitive advantage. When Class A and class B conditions are missing, such as the failure of instant price increases in convenience stores, dynamic pricing is reduced from an efficiency tool to a trust risk, and consumers' reactions are no longer related to the price itself, it's about moral evaluation and

relationship breakdown. Therefore, the sustainability of dynamic pricing is not only an algorithm issue, but also a complex issue of “structure-cognition-governance”. Type A factors provide physical boundaries, and type B factors give social legitimacy, which together constitute the judgment coordinates of whether dynamic pricing is “feasible and acceptable”.

4. Conclusions

This study explores the effectiveness of dynamic pricing in different industries from the perspective of “Why airline tickets are allowed, but beverages are not”. Through a comparison of cross-industry cases, this paper proposes and validates a two-dimensional framework, which can be used as a framework for the analysis of cross-industry case studies, that is, the effectiveness of dynamic pricing depends on the interaction of supply and demand with the feasibility of product attributes (Type A factors) and the acceptability of fair communication governance (Type B factors). Dynamic pricing is truly sustainable when price fluctuations are not only in line with rational economic logic, but also can be understood and trusted in social psychology.

At the theoretical level, this paper extends the traditional “Technical rationality” of revenue management to a comprehensive perspective that takes into account “Social rationality”. Most of the existing studies focus on algorithm efficiency and demand forecasting, while ignoring the legitimacy of dynamic pricing as a “Institution”. Through the analysis of fairness, transparency and compensation mechanism, this paper reveals that price is not only a market signal, but also a manifestation of trust relationship. The essence of dynamic pricing lies in how to balance economic efficiency and social identity, so that the algorithm logic and governance logic are embedded in each other. The results show that the combination of A and B factors in different industries determines the success or failure of dynamic pricing.

In industries with High A and high B, such as air travel and hotels, price fluctuations are institutionalized and transparently handled, and consumers understand the difference as a reflection of supply and demand, thus forming “Accepted dynamic pricing”; In industries with High A and low B, such as online car-hailing and instant delivery, the algorithm can effectively match supply and demand, but it has caused controversy due to insufficient communication and fuzzy ceilings. In industries with low A and high B, such as catering and retail, the algorithm can effectively match supply and demand, firms lack structural volatility but create “Rule-based differentiation” through memberships, discounts, and tiering, and in low-a, low-b industries, such as Amazon's early experiments with personalized pricing, the lack of supply and demand basis and explanation mechanism of price will eventually be regarded as unfair behavior and lead to the loss of trust. This shows that the social effectiveness of dynamic pricing depends on the matching of structural rationality and governance maturity, rather than algorithm complexity. Although this study constructs a social analysis framework of dynamic pricing, there are still limitations. The research is mainly based on qualitative cases with limited sample size, and has not yet covered cross-cultural or algorithmic differences. Future research can further examine the impact of different communication mechanisms on consumers' sense of fairness and acceptance through experiments and questionnaires, and explore the relationship between algorithmic transparency and trust recovery mechanisms.

In summary, the effectiveness of dynamic pricing is a compound proposition that integrates economic and social logic. The long-term viability of the price mechanism depends on whether companies can strike a balance between scarcity and fairness, efficiency and trust. Dynamic pricing can truly become a “Viable and acceptable” market system in the digital age when the price changes from a purely revenue tool to a governance language.

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