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THE ENDURING VALUE OF FLEXIBILITY: HOTEL PRICING DYNAMICS AND BEHAVIORAL CONSUMER RESPONSES TO RISK MITIGATION OPTIONS

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ABSTRACT

Have you ever wondered why that "flexible" hotel room always seems to cost a bit more, even when your trip is just around the corner and you're pretty sure you won't cancel? This article dives into that very question. While traditional economics often assumes we're all perfectly rational decision-makers, real-world observations show that our emotions and biases play a huge role in how we choose. We'll explore how hotels navigate this fascinating landscape, blending smart pricing strategies with an understanding of what makes us, the customers, tick. We'll look at how dynamic pricing works, why we feel certain prices are "fair," and the practical realities hotels face when they want to change their rates. By bringing together insights from behavioral science, revenue management, and business strategy, this study aims to give you a clearer picture of these complex market forces and offer some practical takeaways for anyone in the hospitality business.

Keywords: Price Stickiness, Behavioral Economics, Hotel Industry, Dynamic Pricing, Revenue Management, Consumer Behavior, Loss Aversion, Fairness, Risk Perception, Cancellation Premium.

INTRODUCTION

Imagine you're booking a hotel room. That feeling of knowing you can cancel if plans change? It's comforting, right? But that comfort often comes with a higher price tag. The hotel industry, with its unique challenge of selling something that expires every night, is a master at dynamic pricing, often called "revenue management" [16, 68]. Their goal is simple: get the most out of every room, every night, by adjusting prices based on how far in advance you book, how many other people want a room, and what competitors are charging [3, 16, 68].

However, here's where it gets interesting. While economic textbooks often paint us as perfectly logical consumers, the truth is, we're human. Our decisions are often swayed by things like "loss aversion" – that sting of losing something feels worse than the joy of gaining something of equal value [36, 42, 45, 67, 72]. We also tend to value things we already "own" more highly [4], and we have a strong gut feeling about what's "fair" [35, 41]. These very human traits can make prices "sticky," meaning hotels might hesitate to change them, especially if it means raising them, because they know we might react negatively [5].

This article is our journey into that fascinating space where hotel pricing meets human behavior. We want to understand why hotels sometimes seem to stick to certain prices, even when it feels like they should change. We'll explore how our own psychological quirks influence these pricing decisions, what strategies hotels use to deal with our "behavioral" tendencies, and what it all means for both the hotel's bottom line and our experience as customers. Our hope is to offer a more grounded, realistic view of pricing in a world where emotions are just as important as spreadsheets.

1.1 Why Hotels Play the Dynamic Pricing Game

Think of a hotel room like a carton of milk. If it's not sold by the end of the day, it's gone forever. That's the "perishable inventory" challenge hotels face. Unlike a store that can put unsold goods in the back room, an empty hotel room tonight means lost revenue forever. This, combined with high upfront costs (building the hotel!) and relatively low costs for each additional guest, pushes hotels to be incredibly smart about maximizing their income per room [16, 68]. Dynamic pricing isn't just a nice-to-have; it's essential. It allows hotels to constantly tweak rates, responding to everything from a sudden surge in demand for a local concert to a quiet Tuesday night, or even what the hotel down the street is charging. This flexibility helps them capture more money from guests willing to pay top dollar during busy times, while also enticing budget-conscious travelers during slower periods [3, 16, 58]. These systems have become incredibly sophisticated, moving far beyond simple rules to complex algorithms

that crunch massive amounts of data [13, 68].

1.2 The Human Touch in Our Buying Decisions

While hotels use sophisticated models that assume we're all rational super-calculators, the reality of how we buy rooms is far more nuanced. Behavioral economics helps us understand why our real-world choices often stray from these perfect models.

Let's talk about "prospect theory" [42, 67, 72]. It tells us that we don't just look at the absolute value of something; we see it as a gain or a loss compared to what we expected. And here's the kicker: losing something feels much, much worse than gaining the same amount [36, 42]. So, a small price increase might feel like a big punch, while an equally sized discount might not feel as good. When it comes to hotel bookings, this means the thought of losing money on a non-refundable room if plans change can be really painful. That pain can make us willing to pay extra for a refundable room, even if, deep down, we know the chance of canceling is pretty slim. This fear of loss can easily override a purely logical calculation of whether that extra cost is "worth it" [31, 37].

Then there's "fairness" [35, 41]. We all have an internal barometer for what feels right. If a hotel keeps charging a high premium for flexibility when it seems obvious that the risk of cancellation is almost zero, we might feel like we're being taken advantage of. This can lead to frustration, and even make us less likely to book with that hotel again [14].

And let's not forget our own biases. Sometimes we're a bit too optimistic, overestimating our ability to stick to plans or underestimating how easily things can go wrong [20, 64]. This "overconfidence" might push us towards a cheaper non-refundable rate, only for us to regret it later. On the flip side, we tend to give too much weight to very small probabilities [8, 72]. So, even a tiny, tiny chance of needing to cancel might make that refundable option seem like a much safer bet than it actually is. These systematic misjudgments of probabilities create interesting opportunities for hotels to use what's called "naïveté-based price discrimination" [39, 40].

1.3 The Puzzle of Prices That Don't Budge

One of the biggest puzzles in hotel pricing is why the extra cost for a refundable room often stays stubbornly high, even when your check-in date is just days away and the chance of canceling is practically zero. Logically, as the uncertainty disappears, that "insurance" component should become worthless, and the price difference should shrink to nothing. But time and again, we see that it doesn't [21].

This "stickiness" isn't necessarily a sign that hotels are being inefficient or lazy. Instead, it might be a very clever, deliberate move to capitalize on our human biases. The big question for hotels is how to manage our expectations about flexibility and present their different rates so that we feel good about our choices, even if our logic isn't always perfectly aligned with the numbers.

1.4 What We Set Out to Discover

To unravel this mystery, we aimed to do a few key things:

1. Map the Price Differences: We wanted to really dig into how the prices for flexible versus non-flexible rooms change (or don't change!) as your travel date gets closer.

2. Unpack the Human Element: We explored how ideas from behavioral economics, like how we see risk, how much we hate losing money, and what we consider fair, can explain why these price differences stick around.

3. Understand Hotel Strategy: We looked into why hotels choose to keep prices rigid, even when the risk of cancellation is low. Is it a smart business move, or just old habits?

4. Weigh the Impact: Finally, we considered what these pricing strategies mean for us, the consumers. Are hotels simply taking advantage of our biases, or can these strategies actually open up more choices and benefit us in some ways?

By tackling these questions, we hope this article offers a fresh, more complete picture of hotel pricing. We're aiming to show how behavioral insights can give us a richer understanding of why hotels price things the way they do. And perhaps most importantly, we want to highlight that sometimes, what looks like a fixed price might actually be a very clever, intentional business decision, and not necessarily a bad thing for customers.

2. Literature Review and Theoretical Framework

To truly grasp the fascinating world where hotel pricing meets human behavior, we need to bring together ideas from several different, but connected, areas of research. This section lays out the foundational concepts that guide our exploration.

2.1 The Basics of How Hotels Price Rooms (Revenue Management)

"Revenue management," or "yield management," is a fancy term for a very practical idea that started in the airline industry. It's now used widely in any business that sells something that expires, like hotel rooms, concert tickets, or rental cars [16, 68]. The main goal is to make as much money as possible by selling the right product (say, a specific room type) to the right person, at the right time, for the right price [68]. Hotels achieve this by constantly adjusting their prices and how many rooms they make available, all based on what's happening in the market.

Here are the key ingredients of this traditional approach:

- Charging Different Prices: Hotels often offer different prices to different types of customers. This could be through early-bird discounts, special rates for longer stays, or, as we're focusing on here, offering both refundable and non-refundable options [38, 54].

- Looking Ahead (Forecasting): They use past booking data and smart predictions to guess how many rooms they'll sell in the future [13].

- Finding the Sweet Spot (Optimization): They use mathematical models to figure out the best prices and how many rooms to allocate to each price point to maximize their expected earnings [13, 29].

- Controlling Inventory: They manage how many rooms are available at different price levels to make sure they don't sell out of cheap rooms too quickly and miss out on higher-paying customers [24].

In a hotel, this means room rates are always shifting based on things like the season, day of the week, local events, what competitors are doing, and how much time is left until check-in [46, 58]. The refundable vs. non-refundable choice is a classic example of this. The refundable option is essentially like buying a small insurance policy against canceling, and you pay a premium for that peace of mind [25, 29]. Normally, you'd expect this extra cost to shrink as your check-in date gets closer, because the chance of you canceling goes down [21]. But as we'll see, that's not always what happens, and that's where human behavior comes in.

2.2 How Our Brains Influence Hotel Prices

Behavioral economics is all about understanding how psychology shapes our economic decisions, giving us a much more realistic picture of how we actually make choices. Several key ideas from this field are super important for understanding hotel pricing and why we react the way we do.

2.2.1 The Pain of Loss (Prospect Theory and Loss Aversion)

Imagine you're weighing a decision. Kahneman and Tversky's "prospect theory" [42, 67, 72] suggests we don't just look at the final outcome. Instead, we think about it as a gain or a loss compared to where we started, or what we expected. And here's the big one: the pain of losing something feels much stronger than the joy of gaining the exact same thing [36, 42].

So, when it comes to booking a hotel, the thought of losing the money on a non-refundable room if plans suddenly change can be a huge deterrent. That fear of losing money makes us willing to pay extra for a refundable room, even if, logically, the chance of canceling is tiny. This aversion to a potential loss can completely override a perfectly rational calculation of whether that extra cost makes sense [31, 37].

Prospect theory also talks about how we see probabilities. We tend to overemphasize small chances and underestimate big ones [8, 69, 72]. This is crucial for hotels. If we consistently overestimate the tiny chance that we might need to cancel, we'll naturally put a higher value on that cancellation insurance built into the refundable rate than it's objectively worth.

2.2.2 What Feels Right (Reference-Dependent Preferences and Fairness)

Building on these ideas, Kőszegi and Rabin [44, 45] showed that our happiness isn't just about what we have, but how it compares to what we expected. This is super relevant for prices. If you saw a room at a certain price yesterday, and today it's higher, that increase might feel like a "loss" to you, triggering a negative reaction.

And then there's fairness [35, 41]. We all have a strong sense of what's fair. If a hotel keeps its flexible rates high even when the cancellation risk is almost gone, we might feel like they're trying to take advantage of us. This can make us less willing to pay, or even give the hotel a bad name [14].

2.2.3 Our Brain's Little Quirks (Overconfidence and Probability Overweighting)

Beyond just hating losses, our brains have other quirks. We often tend to be a bit too confident in our own abilities or predictions [53]. When booking travel, this might mean we're overly sure our plans won't change, leading us to pick the cheaper non-refundable rate and then regret it later if something unexpected pops up [20, 64]. On the flip side, as mentioned, we tend to blow small probabilities out of proportion [8, 72]. So, even a tiny, tiny chance of needing to cancel might make that refundable option seem much more appealing than it objectively should. These systematic ways we misjudge probabilities can create clever opportunities for businesses to use what's called "naïveté-based price discrimination" [39, 40].

2.3 Why Prices Don't Always Change (Beyond Just "Menu Costs")

For a long time, economists thought prices were "sticky" mainly because of "menu costs" – the direct expenses of changing prices, like printing new menus or updating computer systems [57, 65, 73]. While those costs exist, especially in physical stores, they seem less relevant in today's digital world where prices can be changed with a click [9, 10, 32].

But behavioral economics offers some deeper reasons why prices might not budge:

- Making Customers Mad: As Anderson and Simester [5] pointed out, raising prices can really upset customers. This can lead to them buying less, leaving for a competitor, or even badmouthing the hotel. The potential cost of this customer anger can be far greater than any physical "menu cost," making hotels think twice before hiking prices.

- Business as Usual (Managerial Inertia): Sometimes, businesses just get stuck in their ways. Managers might be slow to react to market changes because of old habits, too much information to process, or simply a desire to keep things stable [7, 33, 34, 52, 59]. This "organizational inertia" can mean prices aren't always perfectly optimized.

- A Deliberate Choice (Commitment and Strategic Pricing): Believe it or not, sometimes sticking to a price is

a very intentional strategy. Companies might do it to build trust with customers, make it easier for customers to compare prices, or simplify their own decision-making. In our case, maintaining a steady premium for a flexible option might be a deliberate commitment that plays on our behavioral biases, a form of "naïveté-based price discrimination" [39, 40]. This view sees pricing as a powerful strategic tool, the result of careful planning and discussion [18, 65, 73].

2.4 How Hotels Get Smart About Pricing (Strategy and Capabilities)

Setting prices effectively isn't just a quick decision; it's a core skill for any business, especially in fast-paced industries like hospitality [18, 65]. A hotel's ability to set and adjust prices well depends on many things:

- Smart Managers: The insights and foresight of hotel managers, their ability to understand the market, predict customer behavior, and design the right pricing strategies, are absolutely vital [30].
- Strong Systems: Big hotel chains, for example, usually have very advanced revenue management systems, dedicated pricing teams, and powerful data analysis tools. This allows them to be much more dynamic and precise with their pricing than smaller, independent hotels [34, 48, 50]. Sharing information within a chain can also give them a competitive edge [34].
- Learning and Adapting: Businesses constantly learn from what's happening in the market and adjust their strategies. This "evolutionary" view suggests that pricing isn't static; it constantly changes as hotels learn and adapt to their environment [48, 52].
- The Power of Online Markets: The explosion of online travel agencies (OTAs) and direct booking websites has made prices incredibly transparent [9, 10, 11, 46, 55]. While this can make competition fierce, it also gives hotels real-time data on what competitors are charging and how customers are behaving. This rich information allows them to make smarter, more adaptive pricing decisions [26, 27, 28]. However, this transparency also means that any price changes are immediately visible to customers, which can sometimes increase the risk of making them angry [55].

2.5 Why We Pay More for Flexibility (And What It Means for Our Brains)

Offering both refundable and non-refundable rates is a classic way for hotels to offer different versions of their product and charge different prices [25, 29]. The non-refundable rate is usually cheaper because you're giving up the option to cancel. The refundable rate, on the other hand, comes with a premium for that flexibility. You can think of this premium as the cost of a hidden insurance policy against unexpected changes in your plans.

From a behavioral perspective, choosing between these two isn't just a simple math problem. It's heavily influenced by:

- How We See Risk: Our personal, often biased, assessment of how likely we are to cancel. This perception can be skewed by things like overestimating small probabilities.
- Our Comfort with Uncertainty: How much we dislike uncertainty and how much we're willing to pay to reduce it [12, 30, 51]. While it makes sense that we'd pay something extra for flexibility, standard risk aversion struggles to explain why that extra cost stays high even when the objective chance of canceling is tiny [51].
- Our Fear of Losing Out: The idea of losing that non-refundable payment if plans change can make the refundable option seem disproportionately appealing, even if the premium feels high in purely logical terms [31, 37].
- How It's Presented: Even the way the options are described (e.g., "save money with non-refundable" vs. "peace of mind with flexible") can subtly nudge our choices.

The fact that hotels consistently charge a significant premium for cancellation flexibility, even when your trip is just around the corner and there's almost no risk left, strongly suggests they're tapping into these behavioral biases. This could be a form of "naïveté-based price discrimination" [39], where hotels profit from customers who consistently overestimate their need to cancel, or who are so afraid of losing money that they'll pay extra to avoid it. This strategy allows hotels to divide their customers not just by how much they're willing to pay, but also by how "savvy" they are or how easily they're influenced by certain psychological triggers.

3. METHODOLOGY

To really get to the bottom of how hotels price rooms, how our behavior affects those prices, and how hotels organize themselves to do this, we need a robust approach. This section lays out the game plan for a comprehensive study, drawing on established research methods.

3.1 Our Guiding Ideas and Questions

Our main idea is that hotel pricing, especially the extra cost for refundable rooms, isn't just about supply and demand. It's heavily influenced by our common psychological biases. We believe hotels are smart about this, using these biases to keep that cancellation premium positive, even when the actual risk of you canceling is super low.

Here are the main questions (hypotheses) we're trying to answer:

- H1: Does the Cancellation Premium Stick Around? We expect that the extra cost for a flexible hotel room will stay significantly positive and fairly steady, even as your check-in date gets closer and the objective chance of canceling drops to almost nothing. We also think this stability will be more noticeable than how much the basic

room price itself changes.

- H2: Is Our Behavior the Reason? We believe this persistent premium is mainly because of how we, as consumers, behave:
  - H2a: Do We Overestimate Risk? We think people tend to overestimate the small chance that they might need to cancel, which makes them overvalue the flexibility of a refundable rate [8, 72].
  - H2b: Do We Hate Losing Money? We also think people really, really dislike the idea of losing money on a non-refundable booking, making them willing to pay extra to avoid that feeling [36, 42, 67, 72].
- H3: Is It Smart Strategy or Just Laziness? We're betting that hotels deliberately choose to keep the cancellation premium stable as a smart business move (a type of "naïveté-based price discrimination"), rather than just being slow to change prices or making mistakes [18, 39, 40, 65].
- H4: Who Benefits? We'll look at whether this kind of pricing, which plays on our biases, can actually help more people book rooms, potentially benefiting customers by offering flexible options to a wider range of travelers, even if their perception of risk isn't perfectly rational.

3.2 How We'd Collect the Data

To answer these questions, we'd need a massive amount of very detailed hotel pricing information. Our data collection would be designed to capture all the subtle ways hotels price their rooms across different types of hotels, locations, and booking times, and to see the prices exactly as customers would.

3.2.1 Where We'd Get Our Information

Our main source of data would be publicly available hotel room listings from major online travel websites (like Booking.com or Expedia), and if possible, directly from hotel websites. This multi-source approach is key to getting a complete picture.

- Across the Globe: We'd gather data from a variety of big cities in different countries (like North America, Europe, and Asia). This helps us account for regional market differences, cultural variations in how people see risk, and different rules and regulations.
- Over Time: We'd collect data over a long period (several years), covering different seasons and major events. This allows us to see how prices change over time and to analyze long-term trends.
- Hotel Details: For every hotel, we'd gather lots of specific information:
  - Its star rating or quality level.
  - How many rooms it has (its size).
  - Whether it's part of a big chain or independent.
  - Customer review scores (like overall rating, cleanliness, staff quality).
  - Details about specific room types (e.g., double, king, suite) and what they include (e.g., breakfast, a view).
- Pricing Information: For each unique room type and stay date, we'd record daily:
  - The refundable price (PR).
  - The non-refundable price (PNR).
  - All the details about the cancellation policy (e.g., the last day you can cancel for free).
  - The "booking lead time" (how many days are left until check-in).
  - How many rooms are still available (if the website shows this).

3.2.2 What We'd Measure

- Cancellation Premium (Y): This is our main focus. We'd calculate it as the simple difference between the refundable and non-refundable prices (Y = PR - PNR). We'd also look at the percentage premium (Y% = (PR - PNR) / PNR * 100) to account for different price levels.
- Days Before Stay (d): This is how many days are between when we see the price and the check-in date. It's crucial for tracking how the premium changes as the trip gets closer.
- Hotel-Specific Factors: To make sure we're comparing apples to apples, we'd use statistical techniques to control for things that are unique to each hotel but don't change over time (like its location, brand reputation, or overall management style).
- Room-Specific Factors: We'd also control for differences between various room types and their amenities.
- Time-Specific Factors: We'd account for things like seasonality, whether it's a weekday or weekend, and other trends over time.
- How Full the Hotel Is (Occupancy Proxies): Since we can't usually get exact occupancy numbers, we'd create educated guesses based on what we can observe:
  - If the number of available rooms for a specific type drops significantly over time.
  - If the total number of different room types listed by a hotel goes down (meaning some have sold out).
  - If a hotel stops listing prices on the platform altogether (which often suggests it's fully booked) [50].

3.3 How We'd Analyze the Data

Our analysis would combine simple observations, advanced statistical modeling, and careful examination of pricing patterns to thoroughly test our questions.

3.3.1 Using Statistics to See Price Trends

- Visualizing Trends: First, we'd use a technique called "kernel-weighted local polynomial regression" to create smooth graphs showing how refundable prices, non-refundable prices, and the cancellation premium change as the check-in date approaches [Figure 2 in PDF]. This gives us a clear visual understanding of the patterns.

- Formal Testing with Regression Models: To formally test our hypotheses (H1 and H3), we'd use linear regression models. A simplified version of our main equation would look like this:

$$Yrhdls=i;c=j=\sum d\delta dDd+\sum r,h\beta dXrh+\epsilon rhd$$

In plain English: We're trying to see how the cancellation premium (Y) is affected by how many days are left until the stay (Dd), while also accounting for all the unique characteristics of the hotel (Xrh) and room type. This helps us precisely measure how the premium changes (or stays stable) over time, while making sure we're comparing similar situations.

3.3.2 Making Sure Our Answers Are Solid (Checking Other Explanations)

A really important part of our study would be to systematically rule out other possible reasons for why the cancellation premium stays high. This strengthens our argument that human behavior and smart strategy are the main drivers (H3).

- Is It a "Decoy" Price? We'd check if the refundable price is just a high number to make the non-refundable price look better. If it were, the non-refundable price should always stay lower than the old refundable price once the flexible option is gone. But if the refundable price is a real price, the non-refundable price might actually go up to meet or even exceed it after the flexible option expires [Figure 6 in PDF].

- Are Managers Just Making Mistakes/Being Slow? While our statistical controls help, we'd do more tests. We'd look at hotels with different "management quality" scores (based on customer reviews). If mistakes were common, less well-run hotels might have crazier pricing. We'd also look at how often prices and premiums change. If managers are truly "inertial," nothing would change much. But if prices change often while the premium stays the same, that points to a deliberate strategy [Figure 7, Figure 9 in PDF].

- What About Sold-Out Rooms (Opportunity Costs)? Some might argue that the premium is high because hotels lose money if a refundable room cancels late and they can't re-sell it. We'd use our "occupancy proxies" (our guesses about how full the hotel is) to test this. If this were the main reason, the premium should be much higher when hotels are nearly full. We'd compare premiums in rooms that are "always observed" (low opportunity cost) versus rooms that are "reduced" (potentially higher opportunity cost) [Figure 10 in PDF].

- Risk Aversion vs. Our Biases: We'd compare how well standard economic models of risk aversion explain the premium versus models that include our behavioral biases (like overestimating probabilities) [Figure 5 in PDF]. This involves using our data to see which model best fits the real-world patterns.

- Location and Time: We'd also break down the data by city and day of the week (weekdays vs. weekends) to make sure our findings aren't just unique to certain places or times [Supporting Information Appendix Figures A.1 and A.2 in PDF].

By using this careful and thorough approach, our study aims to provide solid evidence and fresh insights into the complex pricing strategies hotels use when dealing with us, their very human customers.

4. RESULTS

Our deep dive into how hotels price their rooms, especially that extra cost for flexibility, has revealed some truly fascinating patterns. These findings really challenge the old ways of thinking about economics and strongly suggest that our human biases, along with smart hotel strategies, are big players in the game. Let's break down what we found.

4.1 What We Saw: Prices and Premiums in Action

Our initial look at millions of hotel room listings from different countries consistently showed two key things about how refundable and non-refundable prices, and their extra cost (the premium), behave.

4.1.1 That Premium Just Sticks Around

You'd think that as your check-in date gets closer, and the chance of you canceling your trip shrinks to almost nothing, that extra cost for a flexible room would disappear too. But our data tells a different story: the premium stays surprisingly stable and significantly positive for a long time leading up to your arrival [Figure 2, Figure 3, Figure 4 in PDF]. For example, across all sorts of hotels (from 2-star to 5-star) and in different parts of the world (Europe and North America), this premium typically hovers around 10% to 15% of the full refundable price. It barely drops, even when you're just days away from checking in. This isn't just a random occurrence; it's a widespread pattern. While there might be a tiny dip in the premium in the last few weeks, it's never enough to make it disappear. This consistent positive premium is a huge discovery, showing that the "insurance" you get with a flexible room holds its perceived value, even when the actual risk it covers is almost gone.

4.1.2 Prices Move Together, But the Premium Stays Put

Here's another interesting observation: the prices for refundable and non-refundable rooms tend to move in sync [Figure 2 in PDF]. When hotels decide to change their rates, they often adjust both the flexible and non-flexible prices at the same time, keeping their difference largely intact. This means that while hotels are actively tweaking

their overall pricing based on market conditions, they're often careful to maintain that specific gap between the two rates. This isn't just a sign that hotels are slow to change prices (what we call "managerial inertia"); it suggests a deliberate, carefully planned decision by hotel managers to keep that premium consistent. Our evidence shows that when prices shift, they're often adjusted in a way that ensures the premium doesn't change, reinforcing the idea that this is a strategic choice [Figure 9 in PDF].

4.2 The Human Element: Why Our Behavior Matters for Pricing

The fact that the cancellation premium stays so stubbornly positive, even when there's almost no objective reason for it, is hard to explain if you only think about perfectly rational economic decisions. Our findings, however, fit perfectly with what behavioral economics tells us about human behavior.

4.2.1 We Overestimate Small Risks

That consistent positive premium, even when the actual chance of canceling is tiny (like a few days before check-in), strongly supports the idea of "probability overweighting" from prospect theory [8, 69, 72]. Simply put, we tend to give too much importance to very small probabilities. So, for a traveler, that minuscule chance of something unforeseen happening that forces a cancellation might feel much bigger than it actually is. This exaggerated perception of risk makes us overvalue the "insurance" that comes with a refundable room, leading us to pay a significant premium for it. Our theoretical model, which includes customers who differ in how much they're willing to pay and how accurately they estimate cancellation probabilities, shows how hotels can cleverly offer both refundable and non-refundable rates, keeping that premium positive even for very low cancellation risks [Section 4.1 in PDF]. When we tested our model with real data, it suggested that our tendency to overestimate probabilities is a much better explanation for the size and persistence of these premiums than just assuming we're all simply "risk-averse" [Section 4.4 in PDF].

4.2.2 We Really Hate Losing Money

The principle of "loss aversion" [36, 42, 45, 67, 72] also plays a huge role. For many of us, the thought of losing the money we paid for a non-refundable room if our plans change is a major psychological barrier. The emotional pain of that potential financial loss feels much more intense than the satisfaction of saving a bit of money by choosing the cheaper non-refundable option. This strong desire to avoid a perceived loss makes us willing to pay more for the refundable alternative, even if, objectively, the financial risk is minimal. The refundable option acts like a psychological safety net, offering a "peace of mind" that we're willing to pay for, regardless of how small the actual risk becomes as the check-in date approaches [31, 37]. This human bias directly contributes to the ongoing demand for flexible rates and, consequently, the persistence of that cancellation premium.

4.3 The Online World: Transparency and Smart Pricing

The explosion of online travel agencies and direct hotel websites has completely changed the pricing game by making everything much more transparent [9, 10, 11, 46, 55, 60]. Now, we can easily compare prices across different sites and for different room types. While you might think this transparency would force prices to converge and premiums to shrink, our findings show a more complex picture.

On one hand, yes, more transparency can make competition fiercer, potentially limiting how much hotels can inflate premiums without losing customers [6, 46]. But on the other hand, this transparency also gives hotels incredible access to real-time market data, including what their competitors are charging and how bookings are trending [26, 27, 28]. This rich data allows hotels to make much smarter, more strategic pricing decisions. They can fine-tune their refundable and non-refundable offerings to perfectly capture different types of "behavioral" customers. Our data shows that hotels, especially those part of big, sophisticated chains, are very active in managing their prices in these transparent online environments [34, 48, 50]. For example, during big events like EURO 2016, hotels showed they could shift from standard pricing to more customized, dynamic rates, proving their pricing sophistication [58]. So, online platforms don't necessarily kill the strategic use of cancellation premiums; instead, they give hotels the tools to apply more precise, behaviorally-informed price discrimination.

4.4 Hotels' Intentional Choices: It's Not Just Inertia

Our analysis strongly suggests that the persistent cancellation premium isn't just hotels being slow to change prices or making mistakes. It's a deliberate, strategic choice by hotel managers.

4.4.1 Smart Decisions, Not Just Old Habits

Some theories suggest that businesses are slow to adapt prices because of old routines or limited individual decision-making [7, 33, 34, 52, 59]. But our findings don't support the idea that hotels are widely "mispricing" their rooms [15]. The hotels we studied, mostly high-quality ones in established chains, are known for their sophisticated pricing strategies [34, 48, 50]. If prices were truly messed up, we'd expect to see wilder premium behavior, especially from less organized hotels. Yet, our analysis shows that premiums stay stable and positive across hotels of different quality levels (based on star ratings and customer reviews). Even hotels with slightly lower management scores show similar patterns, just with slightly smaller premiums [Figure 7 in PDF]. This consistency points to a deeper, intentional strategy at play.

What's more, when we looked at how often prices change,

we found that overall room prices change much more frequently than the cancellation premium itself [Figure 9 in PDF]. For example, many hotels adjust their room prices just days before check-in, but far fewer change that specific premium at the same time. This "fine-tuning" of prices, while keeping the premium steady, clearly indicates that the premium's stability is a deliberate choice by managers, not a lack of responsiveness. Pricing, in this view, is a powerful strategic tool, the result of careful planning and discussion [18, 65, 73], not just a passive reaction or an oversight.

4.4.2 The Power of Being a Chain Hotel

Our data largely came from hotels that are part of established chains. Research consistently shows that being part of a chain gives hotels a big leg up, especially in revenue management. They benefit from shared information, central systems, and standardized processes [34, 39, 48, 50]. These hotels are typically very active in managing their income. The consistent patterns of premium persistence we observed across this sophisticated part of the industry further confirm that this is a calculated strategic behavior. The ability to create and maintain such a nuanced pricing structure, one that leverages our behavioral biases, requires a high level of organizational smarts and clear strategic intent.

4.5 Debunking Other Explanations

To make our case for "naïveté-based price discrimination" even stronger, we had to systematically investigate and, where possible, rule out other common explanations for why that premium sticks around.

4.5.1 The "Decoy Price" Idea Doesn't Hold Up

One idea is that the refundable price is just a "decoy" – an artificially high number meant to make the non-refundable price look more appealing, with no real expectation of anyone actually booking it. If that were true, once the refundable option is no longer available (say, after its cancellation deadline), the non-refundable price should stay consistently lower than that old refundable price. But our analysis of what happens to prices after the refundable option expires tells a different story. In many cases, the non-refundable price actually moves up to meet, or even sometimes exceed, the price that was previously offered for the refundable option [Figure 6 in PDF]. This shows that the refundable price is indeed a real price at which hotels expect to sell rooms, not just a psychological trick.

4.5.2 Not Just Mistakes or Laziness

As we discussed earlier, the idea that hotels are just making widespread pricing mistakes or being slow to change prices isn't strongly supported by our data. The consistent premium patterns across different hotel quality levels, and the fact that prices are frequently adjusted while the premium remains stable, point to deliberate strategic control rather than simple oversight. While some small-scale inertia might exist, it doesn't explain the big picture of why the premium persists.

4.5.3 Capacity Isn't the Main Reason

Another possible explanation from the supply side is that the positive premium reflects the cost to the hotel if a refundable booking cancels late, leaving a room empty, especially if the hotel is nearly full [29]. While this sounds logical, our evidence suggests it's not the main reason for the persistent premium.

- Low Cancellation Rates: Even when data on cancellation probabilities is available, it shows that cancellations are generally rare, especially close to the check-in date [13, 21]. This means the actual cost to the hotel from late cancellations is probably very small.

- Occupancy Doesn't Change It Much: We used several ways to guess how full hotels were (like rooms that were "always observed" as available, suggesting low opportunity cost, versus rooms that were "reduced" (potentially higher opportunity cost)). Our analysis shows that the premium stays stable and positive across all these different occupancy levels. There wasn't a significant difference in premium levels between hotels that were potentially busier or less busy [Figure 10 in PDF]. This suggests that even when hotels aren't likely to be sold out, the premium remains. Plus, studies on hotel booking trends show that even during peak times, hotels often don't reach full capacity [13]. All this evidence combined suggests that the cost of empty rooms due to cancellations isn't the primary reason for that persistent cancellation premium.

In short, our findings strongly support the idea that the consistent extra cost for refundable hotel rooms is a smart strategic move by hotels, leveraging our human biases, especially our tendency to overestimate small risks and our dislike of losing money. Other explanations, like decoy pricing, widespread mistakes, or significant costs from empty rooms, just don't fit the patterns we observed in the data.

5. DISCUSSION

The discoveries we've made in this study offer a fresh perspective on how hotels set their prices, especially when dealing with us, their very human customers. By clearly showing that the extra cost for flexible hotel rooms stubbornly sticks around, and by carefully ruling out the usual explanations, we've highlighted the crucial role of our psychological biases and the intentional strategies of hotel managers. This discussion brings all these insights together, explores what they mean for hotel businesses and for us as consumers, and points to exciting areas for future research.

5.1 Bridging the Gap: When Economics Meets Human Nature in Hotel Pricing

Our study reveals a fascinating tension: on one side, the elegant theories of revenue management that assume we're all perfectly rational, always trying to get the most

for our money. On the other side, the messy, but real, complexities of how we actually make decisions. That persistent extra cost for flexibility, even when the actual risk of canceling is tiny, just can't be fully explained by simple logic or the cost of changing a price tag. Instead, it's deeply rooted in how our brains work.

The core idea is this: hotels aren't just reacting to supply and demand in a perfectly logical market. They're cleverly engaging with customers who, predictably, have certain psychological quirks. Specifically, our tendency to overemphasize small probabilities (making that tiny chance of canceling seem bigger than it is) and our strong aversion to losing money (that deep-seated fear of forfeiting a non-refundable payment) are what drive our willingness to pay for flexibility. This willingness stays strong, even as your check-in date gets closer and the objective value of that flexibility should, logically, dwindle. This is a clever form of "naïveté-based price discrimination" [39, 40], where hotels adjust prices based on our different beliefs and mental shortcuts, not just on how much we value the room itself.

The fact that refundable and non-refundable prices move in parallel, while that premium stays steady, further emphasizes that these are deliberate strategic decisions. This "fine-tuning" suggests that hotels aren't just letting the premium exist out of laziness; they're actively managing this difference as a distinct, powerful tool. This view aligns with the idea that pricing is a sophisticated skill for a business, involving careful planning and smart choices, especially for well-established hotel chains [18, 34, 65, 73].

5.2 What This Means for Hotels: Smart Pricing for Real People

The insights from this study have big implications for hotel managers who want to optimize their pricing in a market full of human customers.

5.2.1 Offering the Right Choices for Different Minds

Hotels need to understand that their customers aren't all the same. We differ not just in how much we're willing to pay, but also in how easily we're swayed by biases and how we see risk. By continuing to offer both refundable and non-refundable options, with that strategically maintained premium, hotels can effectively divide their market.

- Savvy vs. Less Savvy Customers: That premium caters to "naive" customers who might overestimate cancellation chances or really hate losing money, giving them the peace of mind they're willing to pay for. At the same time, "savvy" customers who accurately assess risk can still grab the lower, non-refundable rate.

- Beyond Just a Room: The flexible option isn't just about the objective chance of canceling; it's about how we feel about it. Hotels should present the refundable option not just as "insurance" but as "peace of mind," "flexibility," or "stress-free booking." This appeals to the emotions and psychological benefits that we, as customers, truly value.

5.2.2 Talking About Prices: How You Say It Matters

How hotels present their pricing options can hugely influence our choices and whether we feel treated fairly [35, 41].

- Be Clear: Even though the premium persists, hotels should be crystal clear about their cancellation policies and the benefits of each rate. Confusion can lead to distrust.

- Subtle Nudges (Anchoring and Framing): Hotels can subtly guide our decisions by strategically "anchoring" prices or "framing" choices. For example, calling the non-refundable price a "discount" from the flexible rate might feel better than calling the flexible rate a "premium."

- Managing Expectations: Hotels need to manage our expectations about price changes. While dynamic pricing is necessary, sudden or seemingly random price hikes, especially for the same room, can really annoy us. The stability of the premium, even as basic room prices go up and down, might actually help us feel like the value of flexibility is predictable and fair.

5.2.3 Using Data to Understand Us Better

The massive amounts of data available from online platforms give hotels an incredible chance to truly understand our behavior.

- Predicting Our Choices: Beyond just guessing how many rooms will be booked, hotels can build models that predict which customers are likely to choose refundable vs. non-refundable rates, how sensitive they are to price changes, and even their hidden risk perceptions.

- Testing What Works (A/B Testing): Hotels can run experiments on their websites to try out different ways of showing prices, different messages, and different policy descriptions to see what works best to get us to book and to capture that premium.

- Listening to Feedback: Paying attention to customer reviews, especially those about pricing and cancellation policies, can give hotels valuable insights into what feels fair and where they can improve.

5.3 What This Means for Us: Are We Being Exploited?

A big question here is whether hotels are simply "exploiting" our biases. While that word might come to mind, our findings, much like other research in behavioral economics [39, 40], suggest a more nuanced picture.

- More Choices for More People: Our model suggests that this "naïveté-based price discrimination" can actually be a good thing if it means more people get to book rooms [Section 4.5 in PDF]. By offering a flexible option that appeals to those of us who might overestimate risk (or really hate losing money), hotels can serve a group of customers who might not book at all if only a single, non-

refundable price were available. These customers, who truly value flexibility (even if for slightly biased reasons), now have access to a service they want. In these situations, both the hotel (through more profit) and us, the customers (by getting a choice we value), can benefit.

- Redistribution, Not Always Exploitation: When this type of pricing doesn't lead to more bookings overall, it mainly shifts money around. The hotel benefits, and those "naive" customers who pay the premium might be worse off, while "savvy" customers who pick the cheaper non-refundable rate might be better off. However, even then, it's not necessarily "exploitation" in a malicious sense. It's more about businesses adapting to how we actually think and feel. The very existence of the flexible option, even with a premium, provides a choice that some customers genuinely prefer, given their own subjective assessment of risk.

This perspective challenges the simple idea that any pricing strategy that uses our biases is automatically bad. Instead, it suggests a more complex dynamic where businesses adapt to our psychology, and in doing so, can sometimes expand their reach and create benefits for everyone involved.

5.4 Where Do We Go From Here? Future Research

While our study offers strong insights, it also opens up new questions for future research:

5.4.1 Deeper Data: What About Actual Bookings?

Our analysis relied on the prices hotels posted, not necessarily what people actually booked or canceled. While we showed that posted refundable prices are real transaction prices, having access to actual booking and cancellation records would give us even more detailed insights:

- Real Cancellation Rates: We could directly see how many refundable bookings are actually canceled, allowing us to precisely compare objective risk with perceived risk.

- How We Choose: Understanding the steps we take when booking (e.g., how many times we look at both options, or if we switch between them) could reveal deeper psychological processes.

- Individual Biases: With real transaction data, it might even be possible to guess at individual customers' behavioral biases and group them more accurately.

5.4.2 Culture, Seasons, and Beyond

While we looked at data from several countries, a more in-depth study of how different cultures perceive risk, loss, and fairness could offer valuable insights into how these biases play out in various markets and how hotels adapt. Also, extending our observations to longer periods within a year would help us understand how pricing practices and customer behavior change with the seasons.

5.4.3 Lessons for Other Industries

The idea of a persistent premium for flexibility, even when risk is low, probably isn't unique to hotels. Many other industries involve buying something in advance that you'll use later, with options to cancel or change (think airlines, event tickets, car rentals, or even online stores with flexible return policies). Future research could explore whether similar "naïveté-based price discrimination" strategies are used in these different markets and what the consequences are for customers. Understanding how these psychological tendencies and pricing strategies play out across various industries would be a fascinating area for comparison.

6. CONCLUSION

The hotel industry truly operates in a sophisticated world where the traditional goals of making money have to be carefully balanced with a deep understanding of what makes us, the customers, tick. Our study provides strong evidence that those "sticky prices," especially the consistent extra cost for flexible hotel rooms, aren't just because of internal costs or managers overlooking something. Instead, they're largely driven by fundamental human behaviors: our tendency to overemphasize small risks, our powerful aversion to losing money, and our innate sense of fairness.

For hotels to succeed in this complex environment, they need a delicate and ongoing balance. This means constantly adjusting their dynamic pricing, clearly communicating the value of what they offer, and smartly recognizing how our cognitive biases shape our decisions. By embracing and integrating insights from behavioral economics into their pricing strategies, hotels can not only boost their profits but also, in some cases, expand their reach and offer choices that genuinely benefit a wider range of customers, even those whose decisions are influenced by their psychological predispositions. This nuanced understanding reminds us that in today's marketplace, true strategic success often comes from effectively engaging with the human side of demand.

REFERENCES

1. Akerlof, G. A., & Yellen, J. L. (Eds.) (1986). Efficiency wage models of the labor market. Cambridge University Press.

2. Alderighi, M., Gaggero, A. A., & Piga, C. A. (2022). Hidden prices with fixed inventory: Evidence from the airline industry. Transportation Research Part B: Methodological, 157, 42–61.

3. Alderighi, M., Nicolini, M., & Piga, C. A. (2015). Combined effects of load factors and booking time on fares: Insights from the yield management of a low-cost airline. Review of Economics and Statistics, 97, 900–915.

4. Anagol, S., Balasubramaniam, V., & Ramadorai, T. (2018). Endowment effects in the field: Evidence

from India's IPO lotteries. Review of Economic Studies, 85(4), 1971–2004.

5. Anderson, E. T., & Simester, D. I. (2010). Price stickiness and customer antagonism. Quarterly Journal of Economics, 125(2), 729–765.

6. Bachis, E., & Piga, C. A. (2011). Low-cost airlines and online price dispersion. International Journal of Industrial Organization, 26(6), 655–667.

7. Barnett, W., & Pontikes, E. (2008). The red queen, success bias, and organizational inertia. Management Science, 54(7), 1237–1251.

8. Bruhin, A., Fehr-Duda, H., & Epper, T. (2010). Risk and rationality: Uncovering heterogeneity in probability distortion. Econometrica, 78(4), 1375–1412.

9. Cavallo, A. (2017). Are online and offline prices similar? Evidence from large multi-channel retailers. American Economic Review, 107(1), 283–303.

10. Cavallo, A. (2018). Scraped data and sticky prices. Review of Economics and Statistics, 100(1), 105–109.

11. Cavallo, A., Diewert, E., Feenstra, R. C., Inklaar, R., & Timmer, M. P. (2018). Using online prices for measuring real consumption across countries. AEA Papers and Proceedings, 108, 483–487.

12. Chetty, R. (2006). A new method of estimating risk aversion. American Economic Review, 96(5), 1821–1834.

13. Cho, S., Lee, G., Rust, J., & Yu, M. (2018). Optimal dynamic hotel pricing. Meeting Paper 179, Society of Economic Dynamics.

14. Choi, S., & Mattila, A. S. (2003). Hotel revenue management and its impact on customers' perception of fairness. Journal of Revenue and Pricing Management, 2(4), 303–314.

15. DellaVigna, S., & Gentzkow, M. (2019). Uniform pricing in U.S. retail chains. Quarterly Journal of Economics, 134(4), 2011–2084.

16. Dutta, S., Zbaracki, M., & Bergen, M. (2003). Pricing process as a capability: A resource-based perspective. Strategic Management Journal, 24, 615–630.

17. Eliaz, K., & Spiegler, R. (2008). Consumer optimism and price discrimination. Theoretical Economics, 3(4), 459–497.

18. Ellison, G. (2005). A model of add-on pricing. Quarterly Journal of Economics, 120(2), 585–637.

19. Escobari, D. (2012). Dynamic pricing, advance sales, and aggregate demand learning in airlines. Journal of Industrial Economics, 60(4), 697–724.

20. Escobari, D., & Jindapon, P. (2014). Price discrimination through refund contracts in airlines. International Journal of Industrial Organization, 34(3), 1–8.

21. Falk, M., & Vieru, M. (2018). Modelling the cancellation behaviour of hotel guests. International Journal of Contemporary Hospitality Management, 30(10), 3110–3116.

22. Gabaix, X., & Laibson, D. (2006). Shrouded attributes, consumer myopia, and information suppression in competitive markets. Quarterly Journal of Economics, 121(2), 505–540.

23. Gallego, G., & Şahin, O. (2010). Revenue management with partially refundable fares. Operations Research, 58(4), 818–833.

24. Goldfarb, A., & Xiao, M. (2011). Who thinks about the competition? Managerial ability and strategic entry in US local telephone markets. American Economic Review, 101(7), 3130–3161.

25. Gorodnichenko, Y., Sheremirov, S., & Talavera, O. (2018). Price setting in online markets: Does IT click? Journal of the European Economic Association, 16, 1764–1811.

26. Gorodnichenko, Y., & Talavera, O. (2017). Price setting in online markets: Basic facts, international comparison, and cross-border integration. American Economic Review, 107(1), 249–282.

27. Gorodnichenko, Y., Talavera, O., & Vu, N. (2021). Quality and price setting of high-tech goods. Economic Modelling, 98, 69–85.

28. Hannan, M., & Freeman, J. (1977). Structural inertia and organizational change. American Sociological Review, 82(5), 929–964.

29. Hannan, M., & Freeman, J. (1984). The population ecology of organizations. American Journal of Sociology, 49, 149–164.

30. Hartley, R., Lanot, G., & Walker, I. (2014). Who really wants to be a millionaire? Estimates of risk aversion from gameshow data. Journal of Applied Econometrics, 29(6), 861–879.

31. Heidhues, P., & Kőszegi, B. (2008). Competition and price variation when consumers are loss averse. American Economic Review, 98(4), 1245–1268.

32. Heidhues, P., & Kőszegi, B. (2010). Exploiting naivetè about self-control in the credit market. American Economic Review, 100(5), 2279–2303.

33. Heidhues, P., & Kőszegi, B. (2017). Naivetè-based discrimination. Quarterly Journal of Economics, 132(2), 1019–1054.

34. Hollenbeck, B. (2017). The economic advantages of chain organization. RAND Journal of Economics, 48(4), 1103–1135.

35. Kahneman, D., Knetsch, J. L., & Thaler, R. (1986). Fairness as a constraint on profit seeking: Entitlements in the market. American Economic Review, 74, 728–741.

36. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47, 263–291.

37. Karle, H., & Möller, M. (2020). Selling in advance to loss averse consumers. International Economic Review, 61(1), 441–468.

38. Katz, M. L. (1983). Non-uniform pricing, output and welfare under monopoly. Review of Economic Studies, 50(1), 37–56.

39. Kosova, R., & Lafontaine, F. (2012). Much ado about chains: A research agenda. International Journal of Industrial Organization, 30(3), 303–308.

40. Kosova, R., Lafontaine, F., & Perrigot, R. (2013). Organizational form and performance: Evidence from the hotel industry. Review of Economics and Statistics, 95(4), 1303–1323.

41. Kőszegi, B., & Rabin, M. (2006). A model of reference-dependent preferences. Quarterly Journal of Economics, 121(4), 1133–1166.

42. Kőszegi, B., & Rabin, M. (2007). Reference-dependent risk attitudes. American Economic Review, 97(4), 1047–1073.

43. Levinthal, D. (1997). Adaptation on rugged landscapes. Management Science, 43(7), 934–950.

44. List, J. (2003). Does market experience eliminate market anomalies. Quarterly Journal of Economics, 118(1), 41–71.

45. Mantovani, A., Piga, C. A., & Reggiani, C. (2021). Online platform price parity clauses: Evidence from the EU Booking.com case. European Economic Review, 131, 103625.

46. Melis, G., & Piga, C. A. (2017). Are all hotel prices created dynamic? An empirical assessment. International Journal of Hospitality Management, 67, 163–173.

47. Nakamura, E., & Steinsson, J. (2008). Five facts about prices: A reevaluation of menu costs models. Quarterly Journal of Economics, 123(4), 1415–1464.

48. Nelson, R. R., & Winter, S. G. (1982). An evolutionary theory of economic change. Princeton University Press.

49. Nicolini, M., Piga, C. A., & Pozzi, A. (2023). From uniform to bespoke prices: Hotel pricing during EURO 2016. Quantitative Marketing and Economics, 21, 333–355.

50. Piga, C. A., & Melis, G. (2021). Identifying and measuring the impact of cultural events on hotels' performance. International Journal of Contemporary Hospitality Management, 33(4), 1194–1209.

51. Rabin, M. (2000). Risk aversion and expected-utility theory: A calibration theorem. Econometrica, 68(5), 1281–1292.

52. Ritson, M., Bergen, M., Dutta, S., Levy, D., & Zbaracki, M. J. (2003). Shattering the myth of costless price changes. European Management Journal, 21(6), 663–669.

53. Sandroni, A., & Squintani, F. (2013). Overconfidence and asymmetric information: The case of insurance. Journal of Economic Behavior and Organization, 93, 149–165.

54. Schmalensee, R. (1981). Output and welfare implications of monopolistic third-degree price discrimination. American Economic Review, 71(1), 242–247.

55. Sydnor, J. (2010). (Over) insuring modest risks. American Economic Journal: Applied Economics, 2(4), 177–199.

56. Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. Journal of Risk and Uncertainty, 5(4), 297–323.

57. Vives, A., Jacob, M., & Payeras, M. (2018). Revenue management and price optimization techniques in the hotel sector: A critical literature review. Tourism Management, 24(6), 720–752.

58. Williams, K. R. (2022). The welfare effects of dynamic pricing: Evidence from airline markets. Econometrica, 90(2), 831–858.

59. Wu, G., & Gonzalez, R. (1996). Curvature of the probability weighting function. Management Science, 42(12), 1676–1690.

60. Zbaracki, M., Ritson, M., Levy, D., Dutta, S., & Bergen, M. (2004). Managerial and customer costs of price adjustment: Direct evidence from industrial markets. Review of Economics and Statistics, 86(2), 514–533.