

Consumer Perceptions of Dynamic Pricing in E-Commerce: Fairness, Trust, and Purchase Intentions

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ABSTRACT

Dynamic pricing, the practice of algorithmically adjusting prices in realtime based on demand fluctuations, inventory levels, competitor pricing, and individual consumer characteristics, has become pervasive across e-commerce, travel booking, ride-hailing, and streaming platforms, yet its widespread adoption continues to generate consumer ambivalence rooted in perceptions of price fairness and vendor trustworthiness. This paper reviews the psychological and behavioral mechanisms linking dynamic pricing exposure to consumer fairness judgments, trust formation, and downstream purchase intentions, drawing on dual entitlement theory, distributive and procedural justice frameworks, and price-fairness perception research. The study examines the distinction between demand-based dynamic pricing, in which prices fluctuate uniformly for all consumers based on aggregate market conditions, and personalized dynamic pricing, in which prices are algorithmically tailored to individual consumers based on browsing history, purchase behavior, or inferred willingness to pay, situating each within documented consumer response evidence. The review further examines the moderating roles of price transparency, perceived firm motive, and reference-price availability in shaping fairness judgments, alongside empirical evidence on the reputational and behavioral consequences of consumer-perceived price discrimination. A comparative methodology is described using survey-based price-fairness perception scales, scenario-based experimental designs manipulating pricing transparency and personalization disclosure, and behavioral intention measures including purchase intention, brand switching, and negative word-of-mouth. Reported findings indicate that demand-based surge pricing is judged substantially less unfair than individually personalized pricing at an equivalent price level, that transparency regarding the pricing mechanism meaningfully attenuates perceived unfairness, and that perceived unfair pricing produces measurable declines in purchase intention and trust alongside increased negative word-of-mouth propensity. The paper concludes by discussing implications for e-commerce pricing strategy design, disclosure policy, and platform trust management, alongside persistent gaps in understanding long-term consumer adaptation to algorithmic pricing.

Keywords: *Dynamic Pricing, Price Fairness, Consumer Trust, Purchase Intention, Personalized Pricing, Price Discrimination, E-Commerce, Distributive Justice...*

INTRODUCTION:

Dynamic pricing has evolved from a niche practice confined to airline revenue management into a pervasive feature of contemporary e-commerce, applied across ride-hailing surge pricing, hotel and flight booking platforms, event ticketing, and increasingly mainstream online retail,

where prices for identical products can fluctuate within hours or even minutes based on algorithmically assessed demand, inventory, and competitive conditions [1]. This shift has been enabled by the convergence of real-time data collection, machine learning-based demand forecasting, and automated pricing engines capable of adjusting prices at a granularity and speed unattainable

through traditional, periodically revised pricing strategies [2]. While dynamic pricing offers firms clear revenue-optimization benefits, its consumer-facing implications remain considerably more contested, since consumers frequently perceive price fluctuations, particularly price increases occurring without a corresponding change in product cost or quality, as unfair, with documented consequences for trust, loyalty, and purchase behavior [3].

The theoretical foundation for understanding consumer fairness perceptions of pricing behavior originates in Kahneman, Knetsch, and Thaler's dual entitlement theory, which proposes that consumers judge the fairness of a firm's pricing action not against an absolute price level but against a reference transaction, typically the price recently paid or the price a firm has previously charged, and that price increases are judged fair when justified by a corresponding increase in the firm's costs but unfair when they instead reflect the firm's exploitation of increased demand or reduced consumer bargaining power [4]. This framework directly predicts that demand-based dynamic pricing, in which a firm raises prices during a demand surge without any corresponding cost increase, should trigger unfairness perceptions even when the underlying pricing behavior is economically rational from the firm's perspective, a prediction that has been extensively validated across subsequent experimental and field research [4], [5].

Distributive and procedural justice theory, originating in organizational and social psychology research, provides a complementary lens for understanding consumer price-fairness judgments, distinguishing fairness judgments based on the outcome of a transaction, distributive justice, from fairness judgments based on the process by which that outcome was determined, procedural justice [6]. Applied to pricing research, this distinction helps explain why transparency regarding the pricing mechanism itself, independent of the resulting price level, meaningfully influences fairness perceptions: consumers who understand and perceive as legitimate the process generating a dynamically adjusted price, for example, an explicitly disclosed surge-pricing algorithm responding to real-time demand, judge that price as fairer than an equivalent price presented without explanation, even when the final price paid is identical [6], [7].

A critical distinction within the dynamic pricing literature separates demand-based pricing, in which price fluctuations are applied uniformly to all consumers based on aggregate market conditions, from personalized dynamic pricing, in which prices are algorithmically tailored to individual consumers based on browsing history, purchase behavior, demographic inference, or estimated willingness to pay [8]. Consumer response research has consistently demonstrated that personalized pricing is judged substantially more unfair than demand-based pricing at an equivalent price level, because personalized pricing is perceived as a direct, individually targeted exploitation of the specific consumer's characteristics or vulnerabilities, rather than a response to impersonal, aggregate market conditions that apply equally to all customers, a distinction with direct implications for how e-commerce platforms should design and disclose algorithmic pricing systems [8], [9].

The behavioral consequences of perceived pricing unfairness extend well beyond immediate purchase decisions. Experimental and survey-based research has documented that consumers who perceive a pricing practice as unfair report reduced purchase intention, diminished trust in the vendor, and elevated willingness to engage in negative word-of-mouth and public complaint behavior, with several studies further documenting that publicized incidents of perceived unfair or discriminatory pricing have produced measurable brand reputational damage extending beyond the immediate consumers directly affected by the pricing practice [10]. This reputational contagion effect is particularly consequential in the social-media-mediated e-commerce environment, where isolated instances of perceived unfair pricing, once publicly shared, can rapidly generate broader consumer backlash disproportionate to the number of consumers directly affected by the original pricing decision [10], [11].

Price transparency has emerged as a central mitigating factor across this literature, with multiple studies demonstrating that explicit disclosure of the dynamic pricing mechanism, explaining that prices fluctuate based on demand, inventory, or time-of-purchase rather than presenting price changes without explanation, substantially reduces perceived unfairness relative to non-disclosed pricing changes, even when the resulting price levels are identical [7], [12]. This finding has motivated growing interest among e-commerce platforms and pricing researchers in transparency-oriented pricing communication strategies as a practical mechanism for preserving consumer trust while retaining the revenue benefits of algorithmic dynamic pricing [12].

This paper synthesizes the psychological, behavioral, and empirical literature on consumer perceptions of dynamic pricing in e-commerce, examining fairness judgment formation, the demand-based versus personalized pricing distinction, transparency and disclosure effects, and downstream consequences for trust and purchase intention.

Research Objectives

To examine the psychological and theoretical mechanisms underlying consumer fairness judgments of dynamic pricing.

To compare consumer response to demand-based versus personalized dynamic pricing strategies.

To evaluate the moderating role of price transparency and disclosure on perceived pricing fairness.

To assess the downstream behavioral consequences of perceived pricing unfairness for trust and purchase intention.

To identify implications for e-commerce pricing strategy design and consumer trust management.

LITERATURE REVIEW

2.1 Dual Entitlement Theory and the Reference-Price Framework

Kahneman, Knetsch, and Thaler's dual entitlement theory established the foundational psychological framework for

price-fairness research, proposing that consumers evaluate the fairness of a firm's pricing action relative to a reference transaction rather than in absolute terms, and that price increases are perceived as fair only when attributable to a corresponding increase in the firm's costs, while price increases attributable to increased demand or exploited consumer necessity are perceived as unfair exercises of market power [4]. This framework has been repeatedly validated across subsequent experimental research using scenario-based vignette methodologies, in which respondents consistently rate demand-driven price increases as substantially less fair than cost-driven price increases of identical magnitude, establishing the underlying attributional mechanism as central to price-fairness judgment formation [4], [5].

2.2 Distributive and Procedural Justice in Pricing Contexts

Building on organizational justice theory, pricing researchers have distinguished distributive justice, fairness judgments concerning the price outcome itself, from procedural justice, fairness judgments concerning the process or mechanism by which the price was determined [6]. This distinction has proven empirically important because it identifies process transparency as an independent lever for influencing fairness perception separate from the price level itself: experimental studies manipulating disclosure of the pricing algorithm's logic, while holding the final price constant, have demonstrated that explained, transparent pricing processes are judged fairer than unexplained ones, even among respondents who ultimately pay the identical price [6], [7]. This procedural justice pathway provides a theoretically grounded basis for transparency-oriented pricing communication as a practical fairness-management strategy.

2.3 Demand-Based Versus Personalized Dynamic Pricing

The distinction between demand-based and personalized dynamic pricing has emerged as one of the most consistently replicated findings in the consumer response literature. Demand-based pricing, exemplified by ride-hailing surge pricing and airline seasonal pricing, applies price adjustments uniformly across all consumers based on aggregate market conditions, and while such pricing is frequently judged as somewhat unfair relative to a stable reference price, it is judged as substantially less unfair than personalized dynamic pricing, in which prices are algorithmically tailored to individual consumers based on inferred characteristics such as browsing history, device type, location, or estimated willingness to pay [8]. This differential response has been attributed to the perception that personalized pricing constitutes a direct, individually targeted exploitation of the specific consumer, whereas demand-based pricing, though still potentially perceived as opportunistic, is attributed to impersonal market forces applied equally to all customers rather than to deliberate exploitation of any individual consumer's characteristics [8], [9].

2.4 Perceived Firm Motive and Attribution

Consumer fairness judgments have further been shown to depend substantially on perceived firm motive, with

pricing changes attributed to legitimate business necessity, cost increases, capacity constraints, judged more favorably than identical pricing changes attributed to profit-maximizing opportunism [5]. This attributional sensitivity means that identical dynamic pricing algorithms can generate substantially different consumer fairness responses depending on how the underlying rationale is communicated or inferred by consumers, reinforcing the practical importance of pricing communication strategy independent of the pricing algorithm's actual technical logic [5], [7].

2.5 Trust and Behavioral Consequences of Perceived Unfair Pricing

Perceived pricing unfairness has been consistently linked to measurable downstream behavioral consequences, including reduced purchase intention, diminished vendor trust, increased likelihood of brand switching, and elevated propensity for negative word-of-mouth and public complaint behavior [10]. Several studies have further documented a reputational contagion effect specific to the social-media-mediated e-commerce environment, in which publicized instances of perceived unfair or discriminatory pricing generate consumer backlash extending well beyond the population of consumers directly affected by the pricing incident, amplifying the reputational cost of perceived pricing unfairness relative to the pre-digital retail environment [10], [11]. This amplification effect has been identified as a key strategic consideration for e-commerce platforms weighing the revenue benefits of aggressive dynamic pricing against the reputational and trust-related costs of consumer backlash.

2.6 Transparency and Disclosure as Fairness-Enhancing Strategies

A substantial and growing body of experimental research demonstrates that explicit disclosure of the dynamic pricing mechanism, informing consumers that prices fluctuate based on demand, time, or inventory conditions rather than presenting price variation without explanation, meaningfully reduces perceived unfairness and preserves purchase intention relative to non-disclosed pricing changes, even holding the final price constant across conditions [7], [12]. This transparency effect operates primarily through the procedural justice pathway described in Section 2.2, and has motivated e-commerce platforms and pricing researchers to increasingly favor explicit dynamic pricing disclosure, including visible countdown timers, demand indicators, or explanatory messaging, as a practical mechanism for preserving consumer trust alongside algorithmic pricing flexibility [12].

2.7 Research Gap

While demand-based dynamic pricing and personalized pricing have each been extensively studied, relatively few studies provide a direct, controlled comparison of consumer fairness and behavioral response across the two pricing types within a single experimental framework, limiting precise quantification of the fairness gap between them [8], [9]. Furthermore, most existing research examines fairness perception and behavioral intention at a

single point in time following exposure to a pricing scenario, leaving open questions regarding long-term consumer adaptation to and normalization of dynamic pricing as it becomes increasingly ubiquitous across e-commerce platforms [10],[12]. This study addresses these gaps by synthesizing evidence across pricing types, transparency conditions, and behavioral outcome measures within an integrated comparative framework.

METHODOLOGY

3.1 Research Design

This study adopts a qualitative, descriptive, and comparative research design based on synthesis of experimental, survey-based, and field research addressing consumer perceptions of dynamic pricing in e-commerce and adjacent digital marketplace contexts. The approach consolidates reported fairness-judgment and behavioral-intention findings across differing pricing types and disclosure conditions to characterize consistent patterns in consumer response.

3.2 Conceptual Framework

The framework applied in this review models consumer response to dynamic pricing as a sequential process in which (1) exposure to a price, or price change, triggers a reference-price comparison consistent with dual entitlement theory; (2) this comparison, combined with attributed firm motive and perceived pricing process transparency, produces a distributive and procedural fairness judgment; and (3) this fairness judgment, in turn, predicts downstream behavioral outcomes including purchase intention, vendor trust, brand switching propensity, and word-of-mouth behavior. Pricing type (demand-based versus personalized) and disclosure condition (transparent versus non-disclosed) are modeled as key moderating factors influencing the strength of the fairness judgment formed at stage two.

3.3 Data Sources

The literature synthesized in this review draws on foundational behavioral economics and consumer

psychology studies establishing dual entitlement and price-fairness theory; organizational justice literature adapted to pricing contexts; scenario-based experimental studies manipulating pricing type, disclosure, and firm-motive attribution; survey-based price-fairness perception scale validation studies; and field and social-media-based studies documenting real-world consumer backlash to publicized dynamic and personalized pricing incidents.

3.4 Analytical Framework

Reviewed studies were organized according to the three-stage framework described in Section 3.2. Findings were classified by pricing type (demand-based vs. personalized), by disclosure condition (transparent vs. non-disclosed), and by behavioral outcome measure (purchase intention, trust, brand switching, negative word-of-mouth), enabling systematic comparison of reported fairness and behavioral effects across these dimensions.

3.5 Evaluation Criteria

Comparative evaluation in this review uses metrics standard in the price-fairness and consumer behavior literature: **perceived fairness rating** (typically measured via Likert-scale price-fairness perception instruments), **purchase intention change** (reported shift in stated or revealed purchase intention following pricing exposure), **trust impact** (reported change in vendor trust measures), and **negative word-of-mouth propensity** (reported likelihood of complaint or negative recommendation behavior), used to assess the comparative consumer impact of differing dynamic pricing strategies and disclosure conditions.

RESULTS AND DISCUSSION

4.1 Comparative Consumer Response Across Pricing Types and Disclosure Conditions

Table I summarizes representative findings on consumer fairness perception and behavioral response across the pricing types and disclosure conditions reviewed in Section II.

Table I. Consumer fairness and behavioral response by dynamic pricing type and disclosure condition

Pricing condition	Perceived fairness (relative)	Purchase intention impact	Trust impact	Reported behavioral consequence	Source
Demand-based, non-disclosed (e.g., surge pricing without explanation)	Moderate unfairness	Moderate decrease	Moderate decrease	Some negative word-of-mouth	[4], [5]

Demand-based, disclosed	Reduced unfairness vs. non-disclosed	Partially preserved	Partially preserved	Reduced complaint propensity	[7], [12]
Personalized pricing, non-disclosed	High unfairness	Substantial decrease	Substantial decrease	Elevated negative word-of-mouth, brand switching	[8], [9]
Personalized pricing, disclosed	Reduced but still elevated unfairness vs. demand-based disclosed	Partially preserved but below demand-based condition	Partially preserved but below demand-based condition	Moderate complaint propensity	[8], [12]
Cost-justified price increase (reference condition)	Judged fair or near-fair	Minimal decrease	Minimal decrease	Minimal negative response	[4]

4.2 Discussion

The comparative pattern evident in Table I demonstrates a clear ordering of consumer response severity: cost-justified price increases are judged fair or near-fair and produce minimal behavioral backlash, consistent with the core prediction of dual entitlement theory that fairness judgments are attribution-dependent rather than purely outcome-dependent [4]. Demand-based dynamic pricing without disclosure produces moderate unfairness perception and correspondingly moderate declines in purchase intention and trust, while personalized dynamic pricing without disclosure produces substantially more severe negative responses across every measured outcome, confirming that consumers treat individually targeted price discrimination as qualitatively more objectionable than impersonal, demand-driven price variation, even when the monetary impact on the individual consumer is held constant [8], [9]. This finding carries a direct strategic implication: e-commerce platforms considering personalized pricing implementation should anticipate a materially higher fairness and trust cost than equivalent demand-based pricing strategies, a cost that may exceed the incremental revenue benefit of individual-level price optimization in contexts where consumer trust and repeat-purchase relationships are strategically important.

The consistent attenuating effect of disclosure across both pricing types, evident in the comparison between disclosed and non-disclosed conditions within each pricing category in Table I, provides strong support for the procedural justice pathway as a practically actionable

fairness-management lever [6], [7], [12]. Notably, however, disclosure does not fully equalize consumer response across pricing types: disclosed personalized pricing continues to produce more negative fairness and behavioral outcomes than disclosed demand-based pricing, indicating that transparency mitigates but does not eliminate the qualitatively distinct unfairness associated with individually targeted pricing [8], [12]. This suggests that transparency should be understood as a risk-mitigation strategy rather than a complete solution for platforms pursuing personalized pricing, and that the underlying pricing strategy choice, demand-based versus personalized, remains consequential for consumer trust management independent of disclosure practice.

The documented reputational contagion effect further indicates that the behavioral consequences of perceived pricing unfairness in contemporary e-commerce extend beyond the directly affected consumer population, amplified through social media sharing of perceived pricing injustices, meaning that the aggregate trust and reputational risk of a given pricing strategy may substantially exceed what would be predicted from individual-level fairness judgment data alone [10], [11]. This amplification dynamic strengthens the practical case for proactive transparency and conservative personalized-pricing deployment, since the potential reputational cost of a publicized unfair-pricing incident may outweigh the incremental revenue gains achievable through aggressive algorithmic price personalization.

CHALLENGES AND STRATEGIC IMPLICATIONS

Several challenges and open questions remain in this field. Long-term consumer adaptation to increasingly ubiquitous dynamic pricing remains poorly understood, since most existing experimental evidence captures fairness judgments and behavioral intentions at a single point of exposure rather than tracking how consumer expectations and fairness thresholds evolve as dynamic pricing becomes a normalized feature of the e-commerce environment. Cross-cultural variation in price-fairness norms represents a further underexplored dimension, since dual entitlement theory and the demand-based versus personalized pricing distinction have been validated predominantly in Western consumer samples, leaving open questions about generalizability across markets with differing cultural norms regarding price negotiation and firm-consumer trust. Measurement of actual, revealed purchase behavior in response to dynamic pricing disclosure remains less common than stated-intention survey measures, creating a persistent gap between reported behavioral intention and validated real-world purchase and switching behavior. Finally, the regulatory environment governing personalized pricing and algorithmic price discrimination remains underdeveloped in most jurisdictions relative to the pace of platform adoption, creating uncertainty for e-commerce firms regarding the legal, in addition to the reputational, risk associated with individually targeted pricing strategies.

CONCLUSION

This paper has reviewed the psychological and behavioral literature on consumer perceptions of dynamic pricing in e-commerce, synthesizing evidence on fairness judgment formation, the differential consumer response to demand-based versus personalized pricing, and the role of transparency in shaping these responses. The evidence demonstrates a clear and consistent hierarchy of consumer fairness response: cost-justified pricing is judged fair, demand-based dynamic pricing generates moderate unfairness perception attenuated by disclosure, and personalized dynamic pricing generates substantially more severe fairness violations and behavioral backlash that transparency mitigates but does not fully resolve. These findings carry direct strategic implications for e-commerce pricing design, suggesting that platforms should weigh the incremental revenue potential of personalized pricing against its materially higher trust and reputational cost relative to demand-based alternatives, and that proactive, well-designed pricing transparency represents a practical, evidence-supported strategy for preserving consumer trust while retaining the operational benefits of algorithmic dynamic pricing. As dynamic and personalized pricing continue to expand across digital commerce, sustained attention to consumer fairness perception will remain a strategically consequential, rather than merely academic, consideration for e-commerce firms.

FUTURE WORK

Future research should prioritize longitudinal studies tracking consumer fairness perception and behavioral response to dynamic pricing over extended periods, addressing the current gap in understanding long-term adaptation and normalization as dynamic pricing becomes increasingly ubiquitous. Further work is needed to validate the demand-based versus personalized pricing fairness gap across diverse cultural and international consumer populations, extending the predominantly Western sample base of existing experimental research. Continued research combining stated-intention survey methods with revealed behavioral data, using field experiments or platform transaction data where accessible, would strengthen the currently intention-based evidence base with validated behavioral outcomes. Research should also examine the interaction between regulatory disclosure requirements and voluntary platform transparency practices, informing policy discussions regarding appropriate consumer protection standards for algorithmic pricing. Finally, future work should investigate design-level interventions, beyond simple disclosure, such as consumer-facing price-history displays or opt-out mechanisms for personalized pricing, that might further mitigate the trust and fairness costs associated with algorithmic pricing while preserving its revenue-optimization benefits for e-commerce firms..

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