

From Hidden to Seen: How Price Visibility Redefines Virtual Shopping

Farhan Mutaqin

University of Edinburgh

Ben Marder

University of Edinburgh

Ewelina Lacka

University of Edinburgh Business School

Cite as:

Mutaqin Farhan, Marder Ben , Lacka Ewelina (2026), From Hidden to Seen: How Price Visibility Redefines Virtual Shopping. *Proceedings of the European Marketing Academy*, 55th, (131924)

Paper from the 55th Annual EMAC Conference, Bath, United Kingdom, June 2-5, 2026



From Hidden to Seen: How Price Visibility Redefines Virtual Shopping

Abstract

As immersive retail environments become central to omni-channel strategies, understanding how consumers process price information in virtual stores is increasingly critical. While clear pricing is typically seen as beneficial, in many virtual retail settings price cues are only partially visible or subtly integrated into the display, making them less noticeable. This study investigates how price tag visibility shapes consumers' intention to add products to their shopping cart in virtual fashion retail. A scenario-based experiment with 300 participants compared conditions where price tags were either clearly visible or hidden. Results indicate that higher price visibility significantly enhances both price understanding and purchase intention. These findings underscore how subtle design elements can influence consumer decision-making and contribute to omni-channel retailing literature by showing how virtual store design strengthens price communication and encourages purchase behaviour.

Keyword: Price Visibility, Virtual Retail, Perceived Transparency

Track: Retailing & Omni-Channel Management

1. Introduction

Retail is rapidly entering the era of immersive commerce. The global metaverse-retail market, valued at \$33.7 billion in 2024, is projected to reach \$1.56 trillion by 2034, growing nearly 50% annually (InsightAce Analytic, 2024). Platforms like Roblox now let creators sell goods directly in 3D experiences (Perez, 2025), while Infinite Reality and Google Cloud provides no-code virtual commerce tools (Google, 2025). Consumers appear receptive: 83% of shoppers express interest in buying inside virtual retail stores (Accenture, 2022). As retail channels evolve, an important managerial question arises: how do traditional pricing cues, such as price tags, function in virtual store design?

Price tags have long shaped in-store judgments of value and fairness (Zhao et al., 2021; Monroe, 1973; Miyazaki et al., 2000). They frequently capture attention (Chen et al., 2024) and anchor evaluations through price primacy, where seeing the price first shifts attention from liking a product to judging its worth (Karmarkar et al., 2015). However, visibility is not always beneficial. Concealing prices can signal quality but reduce willingness to buy (Kim et al., 2021), while low transparency sometimes boosts purchase intention by encouraging effortful search (Chu et al., 2025). Other work shows that adding price tags can strengthen purchase intentions for new products, particularly when paired with novelty cues (Bagatini et al., 2024). These mixed results underscore a critical gap: we do not yet know whether making price tags more or less visible in immersive 3D retail environments enhances or undermines consumer purchase behaviour.

Price visibility also ties closely to fairness and trust: open price disclosure enhances perceived transparency (Ferguson & Ellen, 2013). This issue is especially relevant in virtual stores, where prices are often hidden until check-out, reflecting low-visibility strategies (Chu et al., 2025). Despite its importance, no study has systematically tested whether displaying price information directly versus making it less visible affects consumer behaviour in virtual retail. This research addresses that gap by testing how price tag visibility in virtual fashion retail influences consumer behaviour. We propose that (1) visible price tags serve as fairness cues that reduce cognitive effort, (2) this enhances perceived transparency, and (3) transparency, in turn, drives consumers' intention to add the products to the cart virtually. Fashion was selected as the context because it is a fast-digitizing retail category, and the inability to touch products online in e-commerce makes

virtual reality especially useful for creating interactive and engaging shopping experiences (Donatiello et al., 2018).

This study makes three contributions. First, it extends pricing cue research by introducing price tag visibility as a design factor in 3D retail environments, moving beyond work on price primacy (Karmarkar et al., 2015) and 2D settings (Kim et al., 2021; Bagatini et al., 2024). Second, it links visibility to perceived transparency, positioning price tags as fairness cues that reduce search effort and shape evaluations, thereby bridging transparency research (Ferguson & Ellen, 2013; Zhou et al., 2018) with immersive shopping. Third, it examines price consciousness as a boundary condition in virtual retail, advancing prior trait-based pricing studies Kim et al. (2021) into the context of immersive commerce.

2. Theoretical Framework

2.1 The role of price visibility

Price visibility refers to the degree of how easily prices can be seen with minimal effort (Bai et al., 2022; Sepehrian et al., 2023; Hanna et al., 2019), where high visibility means prices are displayed directly in the shopping environment and low visibility requires additional effort, such as clicking on the product to reveal the price (Kim et al., 2021). Price visibility shapes perceptions of transparency and fairness: easy-to-see prices increase trust (Rothenberger, 2015), yet in some contexts low transparency can enhance exclusivity or value (Chu et al., 2025). The recent studies on price visibility across different industries are provided in Table 1.

Table 1 Summarize of prior research on price visibility

Study	Industry	IV(s)	Main Finding	Conclusion
Parguel et al. (2016)	Physical shopping – Luxury	Price visibility (displayed vs concealed)	High price visibility boosts perceived uniqueness and desirability for premium luxury products but has no effect on high-end luxury products.	Price visibility has a positive effect
Kim et al. (2021)	Physical shopping – Vacation package	Price visibility (displayed vs concealed)	Low price visibility raises perceived quality but lowers customer's purchase intention.	Price visibility has a positive effect

Study	Industry	IV(s)	Main Finding	Conclusion
Rothenberger (2015)	Online shopping – Vacation package	Price visibility (high vs low)	High price visibility increases perceived price fairness and overall satisfaction.	Price visibility has a positive effect
Chu et al. (2025)	Online shopping – Vacation package	Price visibility (high vs low)	Low price visibility increases purchase intention; the effect is mediated by higher information diagnosticity.	Price visibility has a negative effect

Prior research shows that visible price tags reduce uncertainty and accelerate decisions in physical retail (Kim et al., 2021), while in luxury fashion, high visibility can heighten purchase desire (Parguel et al., 2016). Despite these insights, the psychological consequences of varying price visibility in immersive 3D retail environments remain untested. To isolate the role of price visibility in shaping behaviour, this study controls for risk aversion, which can influence reliance on price cues (Chu et al., 2025; Bai et al., 2022). By focusing specifically on virtual fashion retail, the research tests whether visible price tags increase add-to-cart intentions by enhancing perceived transparency. Accordingly, the first hypothesis is:

H1: Customers are more likely to add products to their cart when price tags are visible in virtual fashion retail, even after accounting for risk aversion.

2.2 Perceived transparency as a mediating mechanism

Perceived transparency refers to the extent to which consumers believe they can easily access and understand relevant product, price, and seller information to make informed (L. Zhou et al., 2018). Prior research shows that visible price information shapes perceptions of transparency, which in turn influence purchase decisions (Hanna et al., 2019; Zhou, 2015; Zhou et al., 2018; Montecchi et al., 2024). Based on the previous researches, clear pricing signals not only improve purchase intention but also build trust by reducing uncertainty in the decision-making process. In virtual fashion retail, where design choices determine whether prices are visible or concealed, this effect may be amplified. Accordingly, the second hypothesis proposes:

H2: Higher price tag visibility increases consumers' add-to-cart intention through higher perceived price transparency.

2.3 Price consciousness as a boundary condition

Price consciousness is the degree to which consumers focus on paying low prices and avoid higher-priced alternatives when cheaper options are available (Lichtenstein et al., 1993; Sinha and Batra, 1999). Price-conscious consumers devote greater cognitive effort to processing price information and often rely on reference prices or thresholds when making quick purchase decisions (Rihn et al., 2018). Prior studies show that concealing prices reduces purchase intention more sharply for highly price-conscious consumers, who are especially sensitive to fairness and transparency cues (Kim et al., 2021; Rothenberger, 2015). In virtual fashion retail, where price visibility is a design choice, consumers high in price consciousness may react more negatively to hidden prices and more positively to visible ones. Thus, the final hypothesis is:

H3: High visibility of the price tag will increase consumers' purchase intention, particularly among highly price-conscious customers.

3. Methodology

This study employed a quantitative, scenario-based experimental design to examine the effect of price tag visibility on purchasing behaviour, with perceived transparency as a mediator and price consciousness as a moderator. A single-factor between-subjects design tested whether price visibility (shown vs. not shown) influenced perceived transparency and add-to-cart intention (H1, H2), while accounting for the moderating role of price consciousness (H3). The research model can be seen in Figure 1.

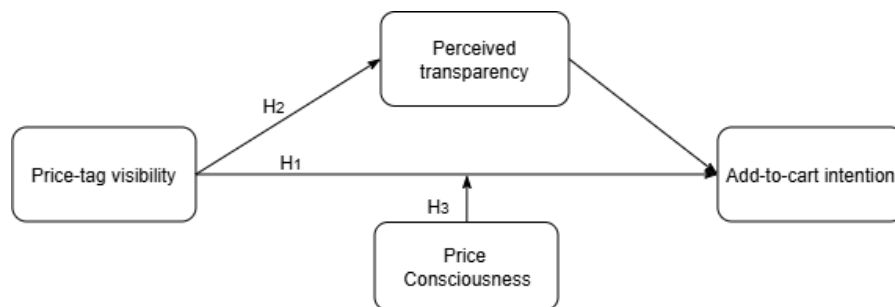


Figure 1 Research Conceptual Framework

Participants were recruited via Prolific (U.S. residents who had purchased clothing online in the past year). The final sample consisted 300 participants (150 per condition; $M_{Age} = 42$, $SD = 12.76$), 49% female; 36.7% reported \$50,000–\$99,000 annual income; 51.3% held an undergraduate diploma. Participants were randomly assigned to view one of two 45-second video

stimuli simulating a first-person shopping experience in Amazon's Virtual Store. The manipulation concerned price visibility: in the low-visibility condition, prices were hidden and accessible only by "clicking" on items (simulating extra effort); in the high-visibility condition, prices were prominently displayed on product tags throughout the store. This design reflects real-world differences in price transparency across retail platforms. The glimpse of the experiment video can be seen in Figure 2.

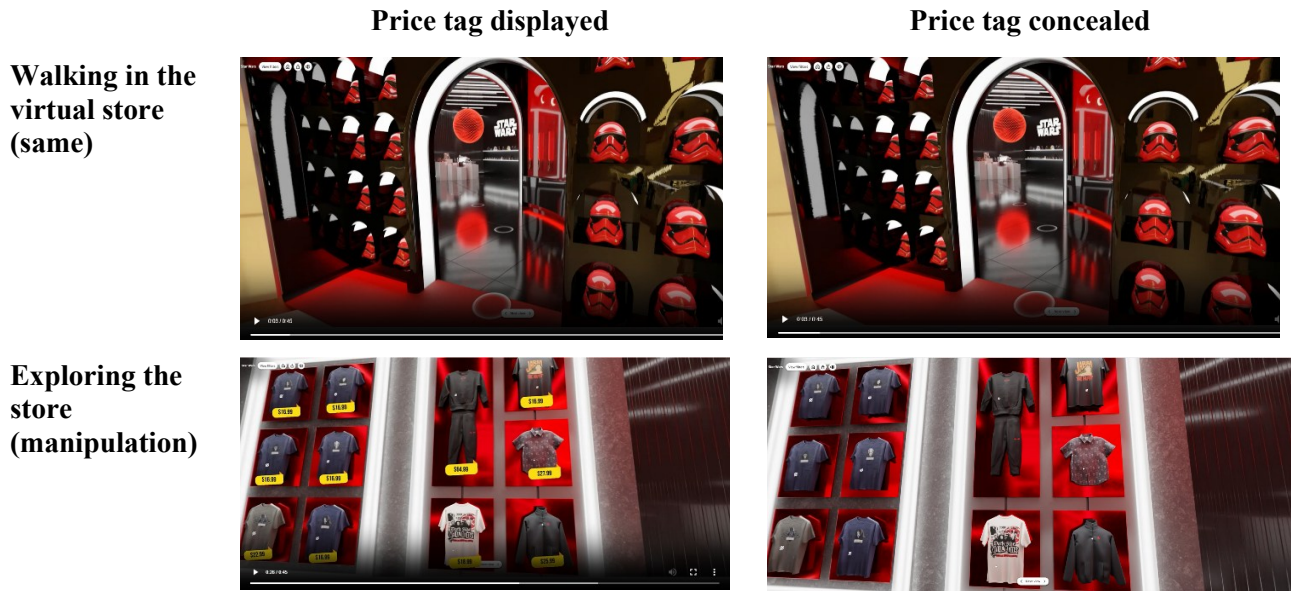


Figure 2 Experiment Manipulation

After viewing, participants completed measures of perceived transparency, add-to-cart intention, and price consciousness. The study began with informed consent and included attention checks to ensure data quality. To verify the effectiveness of the manipulation, participants rated perceived price tag visibility on a 7-point scale (1 = not at all visible without clicking, 7 = very visible without clicking). A Welch's t-test confirmed that participants in the high-visibility condition ($M = 6.56$, $SD = 0.84$) reported significantly greater visibility than those in the low-visibility condition ($M = 1.42$, $SD = 1.18$), $t(260.91) = -43.29$, $p < .001$, $d = 1.02$). This result demonstrates that the manipulation was highly effective, with a very large effect size.

4. Result

First, ANCOVA examined the effect of price tag visibility on add-to-cart intention and perceived transparency, controlling for risk aversion. Risk aversion had no significant effect on intention, $F(1, 297) = 0.45$, $p = .503$, $\eta_p^2 = .002$. However, price tag visibility showed a

significant main effect on intention, $F(1, 297) = 24.01, p < .001, \eta_p^2 = .075$, and on perceived transparency $F(1, 297) = 1012.05, p < .001, \eta_p^2 = .773$. These results indicate that visibility strongly increases both purchase intention and perceived transparency, independent of risk aversion, suggesting transparency mediates the visibility–intention link.

Second, the Estimated Marginal Means analysis also revealed significant differences between concealed and displayed price tag conditions for both perceived transparency and add-to-cart intention. Participants in the displayed condition reported substantially higher perceived transparency (adjusted $M = 6.19, SE = 0.09$) compared to the concealed condition (adjusted $M = 2.00, SE = 0.09$), with the $p < .001$. Likewise, add-to-cart intention was significantly greater when prices were displayed ($M = 4.93, SE = 0.14$) versus concealed ($M = 3.96, SE = 0.14$), with the $p < .001$. These results show that visible price tags strongly enhance both perceived transparency and consumers' likelihood of adding products to their metaverse shopping cart.

Finally, in order to test the hypotheses, a mediation analysis was conducted using Hayes' PROCESS macro (Model 5; Hayes, 2022). The results showed that price tag visibility had a strong positive effect on perceived transparency ($b = 4.19, SE = 0.13, t = 31.80, p < .001, 95\% CI [3.93, 4.44]$). In turn, perceived transparency was a significant predictor of add-to-cart intention ($b = 0.38, SE = 0.08, t = 4.53, p < .001$), indicating that clearer and more accessible price information was associated with a greater likelihood of adding products to the shopping cart in the metaverse. The indirect effect of price visibility on purchase intention through perceived transparency was significant ($b = 1.59, BootSE = 0.32, 95\% CI [0.94, 2.19]$), supporting the mediation hypothesis. By contrast, the direct effect of price visibility on add-to-cart intention at the mean level of price consciousness was negative but not statistically significant ($b = -0.61, SE = 0.40, t = -1.52, p = .130$), and the interaction between visibility and price consciousness was also non-significant ($b = 0.12, SE = 0.17, t = 0.67, p = .501$). This suggests that price consciousness did not moderate the direct effect of price visibility on purchase intention.

5. Discussion

This study demonstrates that clear price tag visibility in a virtual fashion store significantly enhances shoppers' perceived transparency and purchase intention. When prices are easily accessible, consumers perceive the store as more open and trustworthy, align with prior findings in both physical and e-commerce contexts (Kim et al., 2021; Zhou et al., 2018). Importantly,

these effects persisted across consumer segments, regardless of risk aversion or price sensitivity, suggesting that visible pricing universally facilitates confidence and engagement in emerging virtual retail formats.

The findings extend current knowledge of retail and consumer behaviour into immersive and omnichannel contexts. Previous studies have shown that clear price information fosters trust and supports purchase decisions in both physical and online settings. This study demonstrates that the same mechanisms also operate in virtual shopping environments. Technological and spatial elements, such as the visibility of price tags, act as strong informational cues that enhance perceptions of fairness and make the shopping experience more efficient. By showing that these benefits apply to different types of shoppers, the study contributes to a clearer understanding of how transparent and well-designed visual features shape behaviour in virtual retail spaces.

For retailers adapting to digital transformation, making prices clearly visible should be a key design priority that builds customer trust and increases purchase likelihood. At present, most virtual shopping experiences are still partial and mainly recreate the look and navigation of stores but lack important features such as easy price access, real-time interaction, and smooth connections with other shopping channels. To advance, retailers need to create fully immersive and functional virtual stores that combine transparent pricing, simple navigation, and consistent brand messages across physical, online, and virtual spaces. This approach can strengthen brand consistency and customer loyalty while ensuring a smoother experience across the omnichannel journey. Designers should also focus on making price tags easy to read and well placed, helping shoppers make quick and confident decisions. Finally, tools like A/B testing and behavioural analytics can help retailers refine these visibility strategies to further improve transparency and engagement.

As for limitation, this research employed simulated video environments rather than fully interactive VR experiences, which may limit ecological realism. Future studies should test these effects in live virtual retail spaces or augmented reality settings to capture behavioural nuances. Further work could explore how factors such as interface familiarity, avatar presence, or price display design (e.g., colour, placement, or interactivity) shape trust and perceived fairness. Examining these elements across different retail formats: such as grocery, luxury, or fast fashion, would enhance understanding of how transparency and visibility influence consumer behaviour in the evolving omnichannel landscape.

References

- Accenture. (2022). *Consumer Interest in “Virtual Living” Intensifies, Accenture Survey Finds*. Accenture Newsroom. <https://newsroom.accenture.com/news/2022/consumer-interest-in-virtual-living-intensifies-accenture-survey-finds>. (Last accessed: October 23, 2025)
- Bagatini, F. Z., Wagner, R. L., & Rech, E. (2024). THE APPEAL OF NOVELTY: THE EFFECT OF PRICE TAG PRESENTATION ON THE PURCHASE INTENTION OF NEW PRODUCTS. *REAd. Revista Eletrônica de Administração (Porto Alegre)*, 30(1), 875–892. <https://doi.org/10.1590/1413-2311.397.117742>
- Bai, S., Chu, L., Fam, K. S., & Wei, S. (2022). The impact of price transparency of bundled vacation packages on travel decision making: An experimental study. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1053135>
- Chen, M., Burke, R. R., Hui, S. K., & Leykin, A. (2024). Understanding shoppers’ attention to price information at the point of consideration using in-store ambulatory eye-tracking. *Journal of Retailing*, 100(3), 439–455. <https://doi.org/10.1016/j.jretai.2024.06.003>
- Chu, L., Bai, S., Shi, F., Wei, W., & Song, J. (2025). Less pains and more gains: an experimental study of the impact of price transparency of vacation packages on purchase intention. *Current Psychology*. <https://doi.org/10.1007/s12144-024-07157-0>
- Donatiello, L., Morotti, E., Marfia, G., & Vaio, S. Di. (2018). Exploiting Immersive Virtual Reality for Fashion Gamification. *2018 IEEE 29th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*.
- Ferguson, J. L., & Ellen, P. S. (2013). Transparency in pricing and its effect on perceived price fairness. *Journal of Product and Brand Management*, 22(5), 404–412. <https://doi.org/10.1108/JPBM-06-2013-0323>
- Google. (2025). *Infinite Reality: Democratizing 3D e-commerce with Google Cloud*. <https://cloud.google.com/customers/infinite-reality>. (Last accessed: October 24, 2025)
- Hanna, R. C., Lemon, K. N., & Smith, G. E. (2019). Is transparency a good thing? How online price transparency and variability can benefit firms and influence consumer decision making. *Business Horizons*, 62(2), 227–236. <https://doi.org/10.1016/j.bushor.2018.11.006>
- InsightAce Analytic. (2024). *Metaverse Retail Market Forecast 2024–2034*. <https://www.insightaceanalytic.com/report/metaverse-retail-market/3083>. (Last accessed: October 23, 2025)
- Karmarkar, U. R., Shiv, B., & Knutson, B. (2015). Cost conscious? The neural and behavioral impact of price primacy on decision making. *Journal of Marketing Research*, 52(4), 467–481. <https://doi.org/10.1509/jmr.13.0488>

- Kim, J., Jhang, J., Kim, S. (Sam), & Chen, S. C. (2021). Effects of concealing vs. displaying prices on consumer perceptions of hospitality products. *International Journal of Hospitality Management*, 92. <https://doi.org/10.1016/j.ijhm.2020.102708>
- Miyazaki, A. D., Sprott, D. E., & Manning, K. C. (2000). Unit Prices on Retail Shelf Labels: An Assessment of Information Prominence. *Journal of Retailing*, 76(1), 93–112. [https://doi.org/10.1016/S0022-4359\(99\)00022-6](https://doi.org/10.1016/S0022-4359(99)00022-6)
- Monroe, K. B. (1973). Buyers' Subjective Perceptions of Price. *Journal of Marketing Research*, 10(1), 70–80. <https://doi.org/10.1177/002224377301000110>
- Montecchi, M., Plangger, K., West, D., & de Ruyter, K. (2024). Perceived brand transparency: A conceptualization and measurement scale. *Psychology & Marketing*, 41(10), 2274–2297. <https://doi.org/10.1002/mar.22048>
- Parguel, B., Delécolle, T., & Valette-Florence, P. (2016). How price display influences consumer luxury perceptions. *Journal of Business Research*, 69(1), 341–348. <https://doi.org/10.1016/j.jbusres.2015.08.006>
- Perez, S. (2025). *Roblox now lets creators sell physical products within their experiences*. <https://techcrunch.com/2025/05/15/roblox-now-lets-creators-sell-physical-products-within-their-experiences/>. (Last accessed: October 24, 2025).
- Rothenberger, S. (2015). *Fairness through Transparency: The Influence of Price Transparency on Consumer Perceptions of Price Fairness*.
- Sepehrian, A. H., Mirzazadeh, Z. S., & Aghaei Shahri, M. S. (2023). Effect of price transparency on the perception of fair price and satisfaction with the purchase of sports products. *Journal of Revenue and Pricing Management*, 22(5), 327–337. <https://doi.org/10.1057/s41272-022-00391-w>
- Zhao, H., Yao, X., Liu, Z., & Yang, Q. (2021). Impact of Pricing and Product Information on Consumer Buying Behavior With Customer Satisfaction in a Mediating Role. *Frontiers in Psychology*, 12, 720151. <https://doi.org/10.3389/fpsyg.2021.720151>
- Zhou, F. (2015). The Effect of Perceived Transparency, Perceived Reputation and Perceived Security on Consumer Trust and Purchase Intention. *Proceedings of the Fifteenth International Conference on Electronic Business (ICEB)*. <https://aisel.aisnet.org/iceb2015/80>. (Last accessed: October 23, 2025).
- Zhou, L., Wang, W., Xu, J. (David), Liu, T., & Gu, J. (2018). Perceived information transparency in B2C e-commerce: An empirical investigation. *Information and Management*, 55(7), 912–927. <https://doi.org/10.1016/j.im.2018.04.005>