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The virtue-value spectrum: Managing ethical and pragmatic tensions in virtual reality retail for consumer wellbeing☆

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ABSTRACT

Virtual reality (VR) retail is transforming consumer experiences, offering personalization while raising ethical and privacy concerns. This study examines how consumers navigate these tensions and their effects on wellbeing. Using Virtue Ethics and integrating psychological dissonance and privacy cynicism theories, we uncover two perspectives: (i) an ethical view centered on moral responsibility and data integrity, and (ii) a pragmatic view emphasizing convenience and experiential value. Study 1 involves 32 interviews with Generation Z VR users in the UK, while Study 2 analyzes Trustpilot reviews and over 35,000 Instagram comments from four global retailers. We propose two models: the virtue–value spectrum, illustrating how consumers balance moral ideals with practical benefits, and the dissonance–cynicism paradox, highlighting the psychological conflict when ethical values clash with data practices in VR. These models expand Virtue Ethics in digital retail, providing insights to foster ethical engagement, rebuild trust, and enhance wellbeing in immersive retail environments.

1. Introduction

Imagine entering a New York clothing store for the first time. Sensors guide you along a personalized path tailored to your unique preferences. Your fashion tastes, size, color, budget, and intimate preferences shape a bespoke shopping experience. However, such personalization raises ethical dilemmas and privacy concerns. The VR retail market is rapidly expanding, from $3.3–5.7 billion in 2023–2024 to an estimated $24–26 billion by 2030 (Research & Markets, 2025; SNS Insider, 2025). A 20-minute VR session can capture up to two million unique body language data points (Bailenson, 2018). Silicon Valley companies aim to capitalize on this data wealth by introducing hyper-targeted ads and sponsored content within virtual worlds, mirroring their $85 billion annual advertising revenue (Murphy, 2022).

Retail giants like Amazon, Alibaba, eBay, and IKEA have integrated VR stores, bringing new privacy and ethical challenges (Xi & Hamari, 2021; Barta et al., 2023). Scholars and practitioners have yet to define the boundaries between these emerging virtual realities, technologies, and consumer experiences (Flavián et al., 2019; Fan et al., 2025). Virtual reality headsets reveal sensitive biometric data—including fingerprints, voiceprints, and eye retinas—which can enable deepfakes and other security threats (Lin & Latoschik, 2022; Giaretta, 2024).

The literature addressing VR retail's dark side remains sparse. It calls for urgent attention to privacy, legal, ethical, and consumer awareness issues (Al-Emran & Deveci, 2024; Barta et al., 2023; López, 2024). Existing studies advocate for comprehensive ethical frameworks and robust data security protocols (Erensoy et al., 2024; Smith et al., 2023; van Ooijen et al., 2024). However, these efforts predominantly emphasize technical fixes and overlook the psychological complexities of consumer decision-making in immersive environments.

Prior literature has scrutinized the "dark side" pertinent to ethical implications and privacy risks of virtual reality (VR). For example, Lin and Latoschik (2022) systematically review privacy vulnerabilities linked to digital embodiment within social VR environments. Likewise, O'Brolcháin et al. (2016) emphasize how combining VR with social networking platforms may erode personal autonomy and compromise user privacy. Zolfagharian and Yazdanparast (2017) further extend this critique by examining how digital technologies can generate

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psychological stressors and ethical tensions.

Despite these pressing concerns, few studies explore the ethical and privacy implications of collecting extensive biometric data in VR retail contexts (Carter & Egliston, 2023; Liyanaarachchi et al., 2023; Guo et al., 2024). Current research inadequately addresses how consumers reconcile ethical apprehensions with the practical advantages of immersive shopping. Moreover, existing approaches lack a unified theoretical framework that explains the psychological processes underlying consumer behavior in virtual retail. Addressing this gap is critical. Major retailers rapidly adopt immersive technologies, which risk normalizing invasive data collection before clear ethical guidelines emerge. Future research must prioritize interdisciplinary perspectives on ethics, privacy, regulation, and policy (Javeed et al., 2024; Pandey & Pandey, 2025). The shift from physical to virtual retail spaces demands immediate attention to foster a fairer virtual marketplace.

We draw on Virtue Ethics (Song & Kim, 2018) to explore consumer behavior in VR retail, focusing on how moral character traits—such as integrity, honesty, and responsibility—guide ethical decision-making beyond rule-based frameworks (Perkins et al., 2024; Cornelissen et al., 2013). Complementing this, psychological dissonance (Festinger, 1964) describes consumers' mental discomfort when enjoying immersive, personalized shopping while being concerned about invasive data practices. Privacy cynicism (Hoffmann et al., 2016) captures a sense of resignation and distrust, where consumers feel powerless to protect their data and view privacy safeguards as ineffective. These constructs collectively reveal consumers' ethical ambivalence in VR retail, balancing convenience with moral concern.

We investigate how psychological dissonance, driven by privacy cynicism, shapes consumer behavior in VR retail (Khan et al., 2023; Festinger, 1964; Segijn et al., 2024). Integrating Virtue Ethics into our analysis provides a novel lens to understand how moral virtues guide consumers in reconciling ethical concerns with the benefits of personalized VR shopping. This study addresses the following research question: How do consumers employ virtue ethics principles to reconcile the dilemma between the practical benefits of personalized virtual reality shopping experiences and their ethical concerns regarding data privacy?

Accordingly we pursue three key objectives: (i) to examine how psychological dissonance manifests in VR retail settings when consumers face conflicts between personalization benefits and privacy concerns; (ii) to investigate the role of privacy cynicism in shaping consumer trust, engagement, and ethical decision-making in immersive retail environments; and (iii) to develop a virtue ethics-based framework that explains how consumers navigate the ethical complexities of VR retail while balancing practical benefits against moral values.

This qualitative study, supported by secondary data, offers four theoretical contributions. First, it extends Virtue Ethics into digital retail by highlighting how virtues such as integrity and transparency guide ethical behavior in VR contexts. Second, it advances psychological dissonance theory by revealing how immersive environments intensify cognitive conflicts between personalization and privacy. Third, it deepens the concept of privacy cynicism, demonstrating its role in eroding trust and engagement in data-driven VR retail. Fourth, it introduces the virtue–value spectrum, illustrating the tension between ethical ideals and pragmatic choices in consumer decisions. It proposes the dissonance cynicism paradox, which captures how moral dissonance and cynicism coexist in immersive settings. The study offers actionable insights: retailers can build trust by addressing privacy concerns; policymakers can craft balanced regulations; and consumers gain ethical guidance. Collectively, these insights support a more responsible and sustainable VR retail environment.

2. Literature review

2.1. Virtue Ethics theory

Virtue Ethics, rooted in Aristotelian philosophy, emphasizes moral character as the foundation of ethical behavior, advocating the cultivation of virtues such as integrity, honesty, responsibility, and wisdom (Song & Kim, 2018). Unlike deontological ethics, which focuses on duties, or consequentialist ethics, which prioritizes outcomes, Virtue Ethics centers on the moral development of individuals and organizations, ensuring that ethical behavior stems from virtuous dispositions rather than rigid rules or calculated consequences (Bag et al., 2023; Annas, 2006). Ethical concerns regarding personalization, data collection, and consumer manipulation in VR retail have gained prominence. VR technologies enable immersive, data-driven personalization, tracking consumer behaviors, analyzing biometric responses, and adapting environments based on individual preferences (Dennis & Harrison, 2021; Egliston et al., 2024). While such capabilities enhance consumer experiences, they also raise critical ethical dilemmas related to privacy, consent, and the potential exploitation of consumer vulnerabilities (Liyanaarachchi et al., 2023; Selinger et al., 2023). In this setting, Virtue Ethics provides a robust ethical framework for guiding decision-making. It encourages consumers to exercise self-control and wisdom in assessing the implications of data sharing while urging businesses to prioritize integrity, transparency, and responsibility in their data practices (Arora et al., 2025; Rauschnabel, 2018).

VR's potential for behavioral manipulation intensifies these ethical concerns. Persuasive design techniques can subtly influence consumer choices, leading to ethical dilemmas that cannot be addressed solely through compliance-driven frameworks (López, 2024; Selinger et al., 2023). Unlike regulatory approaches that focus on legal obligations, Virtue Ethics promotes a proactive ethical stance, requiring consumers and businesses to reflect on the long-term moral implications of their actions (Selinger et al., 2023). Companies should ensure that their VR environments do not exploit vulnerable consumers for short-term gains but instead foster ethical engagement and consumer trust (Goncalves et al., 2024). Despite its relevance, Virtue Ethics remains underexplored, mainly in VR retail. Existing research predominantly focuses on privacy protection, regulatory compliance, and technological risks, overlooking the role of moral character in shaping ethical consumer decisions (Egliston et al., 2024). Through VR headsets, businesses collect sensitive biometric data, such as eye movements, pupil dilation, heart rate, skin conductance, facial expressions, and posture, to personalize experiences and optimize performance (Giaretta, 2024). While these features enhance immersion and marketing precision, users often face uncertainty about who accesses their data, how it is stored, and for what purposes, creating a dilemma between enjoying tailored VR experiences and risking privacy intrusion.

While VR literature often celebrates enhanced user experiences, it frequently overlooks darker issues such as privacy violations, manipulation, and the erosion of autonomy, primarily driven by device makers and platforms (Carter & Egliston, 2024; Vecchietti et al., 2025). As VR expands into the metaverse, data colonialism and corporate power concerns intensify (Egliston et al., 2024; Shahidul Islam, 2025). This study acknowledges these systemic issues but focuses on how consumers respond ethically. Using Virtue Ethics, we examine how individuals evaluate VR practices based on fairness, trust, and moral integrity (Bag et al., 2023; Goncalves et al., 2024; Jung et al., 2021). Rather than targeting regulation alone, we emphasize character-driven consumer decisions in fostering responsible digital environments (López, 2024; Carter & Egliston, 2024; Raja & Al-Baghli, 2025).

2.2. Psychological dissonance

Psychological dissonance describes the mental discomfort or tension that arises when people experience conflicting cognitions, such as beliefs, attitudes, or behaviors (Festinger, 1964). This discomfort motivates individuals to reduce the inconsistency by altering one or more elements contributing to the dissonance. From a commercial perspective, consumers possess cognitive aspects based on their negative or positive previous purchase experiences. These elements often conflict

when individuals encounter new stimuli, such as product information from advertisements, associates, or personal experiences, leading to dissonance (Devi & Gangwar, 2025). Thus, selecting one option necessitates abandoning others, generating tension.

To resolve dissonance, consumers justify their decisions by positively re-evaluating their chosen option, downplaying rejected alternatives, dismissing contradictory information, or adjusting their perceptions. In VR retail, we argue that psychological dissonance manifests as a conflict between technologies' immersive, personalized experiences and the ethical dilemmas surrounding data privacy. VR systems often require users to share biometric data such as eye-tracking, voice patterns, and spatial movements, creating a tension between the desire for personalization and privacy concerns (Al-Emran & Deveci, 2024; Giaretta, 2024). These virtues help consumers navigate the ethical dilemmas inherent in VR technologies.

While the personalization of privacy been extensively studied in digital contexts (Awad & Krishnan, 2006; Chellappa & Sin, 2005; Karwatzki et al., 2017; Zeng et al., 2021), the ethical dilemma of sharing data for perceived benefits despite privacy risks, driven by cognitive dissonance, remains underexplored (Devi & Gangwar, 2025; Velasco et al., 2024).

Psychological dissonance in VR retail can be attributed to several factors unique to the technology's immersive nature. The conflict between personalization and privacy risks emerges as a key issue, where the desire for tailored shopping experiences often clashes with concerns about data privacy (Enyejo et al., 2024; Guo et al., 2024). A lack of transparency in how VR retailers handle personal data exacerbates dissonance, as consumers are often unaware of how their data is collected, stored, and used, leading to mistrust and heightened dissonance (Barta et al., 2023; Velasco et al., 2024). The power imbalance on privacy between consumers and VR retailers, where consumers have limited control over their data, intensifies dissonance (Lutz et al., 2020; Ranzini et al., 2023). This asymmetry forces consumers to reconcile their desire for convenience with their lack of agency in protecting their personal information.

Digital environments create a paradox where consumers feel compelled to participate despite privacy concerns, intensifying psychological dissonance (Devi & Gangwar, 2025; Erensoy et al., 2024). While transparency and trust reduce dissonance, existing studies overlook the unique ethical dilemmas in VR retail, where data collection is more intrusive (Velasco et al., 2024; Zhou & Xie, 2024). Consumers may rationalize participation by valuing personalization over privacy or disengage to avoid discomfort (Al-Emran & Deveci, 2024). However, research on cognitive dissonance in immersive technologies remains limited (Barta et al., 2025; Devi & Gangwar, 2025; Zhou & Xie, 2024). Given VR's immersive nature, privacy dilemmas introduce new dimensions of dissonance that are underexplored (Barta et al., 2023; Pandey & Pandey, 2025). Future research should examine how sharing biometric and behavioral data influences consumer behavior in VR retail (Fan et al., 2024; Zhou & Xie, 2024). This study addresses this gap by exploring the role of psychological dissonance in shaping VR consumer engagement.

2.3. Privacy cynicism

Cynicism, a psychological state characterized by negative feelings and attitudes toward individuals, institutions, or issues, often arises from unfulfilled expectations (Chylinski & Chu, 2010). In the privacy context, cynicism emerges as a negative experience in sharing personal data (Ranzini et al., 2023), where consumers perceive privacy protection as futile, leading to emotional disengagement from privacy-related actions (Zhang et al., 2025). Privacy cynicism is conceptualized as a multidimensional construct, encompassing four key dimensions reflecting different aspects of user experience (Hoffmann et al., 2016). The first dimension, mistrust, arises due to a lack of transparent data collection. The second dimension, uncertainty, stems from concerns about data security. The third dimension, powerlessness, reflects users' inability to protect their privacy or influence data use. The fourth dimension, resignation, refers to disengagement from privacy concerns due to a lack of control (Hoffmann et al., 2016; Lutz et al., 2020).

In virtual reality (VR) retail, privacy cynicism represents a critical barrier to consumer trust and engagement with rising data breaches and misuse (Acikgoz & Vega, 2022; Khan et al., 2023). The growth of privacy cynicism is due to the increasing prevalence of data-intensive technologies and widespread information about data breaches and unethical data practices (Hoffmann et al., 2024). In VR retail, the immersive nature of the technology requires the collection of vast amounts of sensitive biometric and behavioral data, such as eye-tracking, voice patterns, and spatial movements (Barta et al., 2023). While these data points enable retailers to deliver personalized shopping experiences, they amplify privacy risks, increasing consumer skepticism. In VR retail, privacy cynicism manifests in several ways, including reduced adoption rates of VR technologies and diminished consumer trust and loyalty (Nam et al., 2025). Consumers may engage in self-restrictive behaviors, such as providing minimal personal information or avoiding VR platforms altogether, thereby undermining the potential advantages of VR retail (Chen et al., 2023; Fan et al., 2025; Fares et al., 2024; Guo et al., 2024).

Further, perceived control over personal data significantly shapes consumer attitudes in VR retail, with uncertainty fuelling privacy discomfort. This control moderates the personalization-privacy trade-off, as shown in prior research highlighting transparency and agency as key to resolving this paradox (Zeng et al., 2021; Awad & Krishnan, 2006; Karwatzki et al., 2017). Enhancing transparency and user control in VR can reduce privacy cynicism and support ethical engagement.

To mitigate privacy cynicism, VR retailers must adopt a proactive, transparent approach to data privacy. Key strategies include communicating data policies (van Ooijen et al., 2024), empowering consumers with data control tools (Martin, 2020), and fostering trust through ethical frameworks that emphasize integrity and responsibility (Martin & Murphy, 2017). Trust signals, such as privacy certifications, further reassure consumers (Erensoy et al., 2024). Aligning innovation with transparency and trust enhances consumer engagement and supports sustainable VR retail growth (Fan et al., 2025). Privacy cynicism, driven by mistrust, powerlessness, and uncertainty, heightens consumer vulnerability in VR retail, where a power imbalance limits data control (Segijn et al., 2024; Liyanaarachchi et al., 2023). Consumers weigh immersive experiences against privacy risks, often disengaging due to fears of data misuse. Despite its significance, research on privacy cynicism in VR retail remains scarce (Barta et al., 2023; Giaretta, 2024; Hoffmann et al., 2024).

While prior studies have examined biometric tracking and behavioral profiling in retail, limited research has explored how privacy cynicism—a resigned or skeptical attitude toward data protection—shapes consumer attitudes and behaviors in VR retail environments. This study addresses this gap by investigating how privacy cynicism, intensified by ethical concerns, contributes to consumer disengagement. It further explores the interplay between privacy cynicism, consumer vulnerability, and ethical dissonance, offering new insights into the privacy–personalization tension in immersive commerce.

3. Overview of the studies

This research includes two studies examining ethical and privacy tensions in VR retail. Study 1 explores Generation Z's lived experiences in the UK through 32 in-depth interviews, using the Gioia Method to develop grounded insights. Study 2 analyzes social media content and low-rated Trustpilot reviews from major VR retailers to uncover

consumer concerns. The studies offer a multi-dimensional view of ethical challenges in immersive commerce.

3.1. Study 1

3.1.1. Method

The study focuses on Generation Z (born between 1997 and 2012) in the UK, a demographic widely recognized for its intense engagement with immersive technologies such as virtual reality (Zhu et al., 2024). The UK is also experiencing rapid VR adoption growth, making it a fertile ground for exploring emerging ethical and privacy challenges (Statista, 2024). Data was collected via Zoom interviews between July and December 2024, comprising 32 in-depth interviews ranging from 43 to 56 min. Participants were recruited through purposive sampling (Campbell et al., 2020), with inclusion criteria that required active engagement with VR retail platforms for at least one month prior to the interview. We considered active engagement to be spending a minimum of 10 h per month interacting with content and either purchasing or intending to purchase products.

The study adopts a structured inductive approach, consistent with the method advanced by Magnani and Gioia (2023), where data is organized into first-order (informant-centric) codes, second-order (theory-centric) themes, and aggregate dimensions to develop a grounded theoretical model. The Gioia Method is well-suited for capturing the complex and nuanced meanings participants assign to their lived experiences. Initially, open coding is conducted to derive first-order concepts directly from participants' language, allowing the data to "speak for itself" (Gioia et al., 2013). These first-order codes are then abstracted into second-order themes reflecting underlying theoretical patterns before being synthesized into broader aggregate dimensions. This multi-level process facilitates systematic theorizing from qualitative data and enhances transparency, rigor, and traceability in theory development (Gioia et al., 2013; Magnani & Gioia, 2023).

While the study is inspired by grounded theory principles, particularly in inductive coding, emergent categorization, and theory generation from data, it does not follow a "pure" grounded theory methodology (Charmaz & Thornberg, 2021). Instead, it aligns with the Gioia methodology, which is commonly positioned as a hybrid approach that bridges inductive rigor with post hoc theoretical sense-making (Gioia et al., 2013). Virtue Ethics was not predetermined but emerged during later analysis to interpret participants' moral reasoning and judgments on privacy and ethics in VR retail (Magnani & Gioia, 2023). This allowed the study to remain true to the data-first logic of inductive inquiry, while responsibly drawing on established ethical theory to enrich interpretation. This enabled the avoidance of the limitations of a deductive theoretical imposition and remains grounded in participant voices, satisfying methodological transparency and theoretical insight (Charmaz & Thornberg, 2021; Gioia et al., 2013).

Data saturation was reached at the 26th interview, with no new concepts emerging (Hennink & Kaiser, 2022), and an additional six interviews were conducted to ensure analytical robustness and data verification (Bell et al., 2022). Interviews were conducted by four trained researchers, supported by detailed field notes and shared coding (Magnani & Gioia, 2023).

The key questions were: i) What motivated you to shop in a virtual reality retail environment? ii) What are the main benefits of using virtual reality for shopping compared to traditional methods? iii) Did you feel your privacy was at risk during your VR shopping experience? Why or why not? iv) How much trust do you have in VR retailers when handling your data? v) Have you ever hesitated to provide personal information during a VR shopping experience? What caused that hesitation? vi) How should VR retailers balance personalization and privacy protection? vii)In your opinion, what ethical concerns should VR retailers address when collecting consumer data? viii) How do you generally feel about the trade-off between the benefits of VR shopping (e.g., convenience, personalization) and the potential privacy risks?.

3.1.2. Data analysis

This study employed a three-tiered coding process following the grounded theory approach (Magnani & Gioia, 2023; Gioia et al., 2013). First, first-order concepts were identified from participant narratives, capturing consumer concerns (privacy, VR engagement, value conflicts) and retailer perspectives (data value, ethical transparency, consumer benefits). Second, these concepts were categorized into second-order themes informed by psychological dissonance, privacy cynicism, and ethics-pragmatism frameworks, leading to key themes, such as intrinsic privacy, moral consistency, extrinsic privacy, and moral balance. Finally, these themes were synthesized into aggregate dimensions—"Ethical Virtue" and "Pragmatic Value"—highlighting the tension between ethical concerns and practical trade-offs in VR retail. Intercoder reliability was assessed at 88 %, with discrepancies resolved through consensus. Member checks with 8 participants validated the findings, while external validation with five industry professionals ensured real-world relevance (Bell et al., 2022; Charmaz & Thornberg, 2021).

3.1.3. Findings and discussion

Table 1 presents the data structure and Table 2 some selective quotes from respondent.

Intrinsic Privacy

In exploring intrinsic privacy, participants strongly desire control over their data when in VR retail environments. "I don't like the idea of my data being out there without me knowing exactly what's being done with it. I need to feel in control of what I share (P7)," illustrating a deep concern for privacy. The need for control and transparency reflects consumers' intrinsic value of their privacy, reinforcing that their personal information should remain secure unless they consciously decide to share it (Ranzini et al., 2023; Velasco et al., 2024).

"It really bothers me when a company collects too much data on me without asking or explaining. I want to know what they are using it for (P21)." This statement underlines a key ethical principle in Virtue Ethics—the importance of transparency and accountability in interactions (Hursthouse & Glen, 2018; Guo et al., 2024). For consumers, privacy is a moral issue, not just a pragmatic one. When VR retailers fail to ask for permission or lack clarity about data use, they undermine trust, creating ethical dissonance (Barta et al., 2023; Lutz et al., 2020).

"I want my personal information to stay mine. It's just unsettling to think that companies are tracking every little thing I do online (P14)" reflects an emotional response to the loss of privacy, indicating a desire for moral autonomy. In the context of VR, this emotional discomfort speaks to the internal struggle, privacy cynicism consumers face, and the ethical implications of sharing personal data (Hoffmann et al., 2024). When consumers feel uncertain or uncomfortable about VR retailers' privacy practices, it creates psychological dissonance—a conflict between their values and actions (Festinger, 1964). For some, maintaining their privacy and moral integrity takes precedence over engaging with VR experiences, underscoring the central role of Virtue Ethics.

Moral Consistency

Moral consistency plays a significant role in how consumers approach VR retail, especially regarding privacy. "If I feel like a virtual retailer is asking for more personal info than they need, I won't share it. My values around privacy are more important (P2)." This reflects the principle of moral consistency, where consumers make decisions based on their ethical values. This consistency is rooted in Virtue Ethics, which emphasizes cultivating virtues like honesty and integrity in all actions, even in digital environments like VR (Hursthouse & Glen, 2018; Devi & Gangwar, 2025).

"If a VR retailer makes me feel uncomfortable about how they handle my data, I just won't shop there. My privacy is something I can't compromise on (P17)," demonstrating a firm stance on privacy as a non-negotiable value (Velasco et al., 2024; Liyanaarachchi et al., 2024). This reinforces the notion that consumers weigh their ethical beliefs against the potential benefits of VR retail, often prioritizing their moral compass

Table 1
Data structure.

1st order concepts	Open codes	2nd order themes	Theoretical grounding	Aggregate dimensions	Iterative process for theory building	Substantive theory
Control over personal data is a top priority.	Protection	Intrinsic Privacy	Psychological Dissonance	Ethical	Safeguarding personal data is a responsibility.	Virtue-Value Spectrum
A clear understanding of data usage is essential.						
Discomfort arises from excessive data collection.	Discomfort				Discomfort arises when virtual reality lacks clarity.	
Keep personal information private and secure						
Privacy should always be in the user's hands	Control				Privacy protection is a moral duty.	
Transparency in handling personal data builds trust				Virtue		
					Ethical consumers avoid virtual reality platforms that lack privacy.	
					Privacy concerns outweigh immersive virtual reality benefits.	
					Virtual reality benefits justify sharing personal data.	
					Privacy risks are accepted for virtual reality convenience.	
					Data sharing enables full virtual reality potential.	
			Privacy Cynicism			
Ethical values limit the sharing of personal data	Integrity	Moral Consistent			Transparency in virtual reality data usage drives trust.	
Personal integrity guides decisions on data sharing						
Uncomfortable privacy practices lead to avoidance	Responsibility				Benefits outweigh privacy risks in virtual reality.	
Trustworthiness is a must for data sharing						
Data sharing aligns with personal moral standards	Standards					
Moral values shape data-sharing decisions.						
	Benefits	Extrinsic Privacy		Pragmatic		
Willing to share data for valuable perks						
Personalization benefits can justify sharing data.	Gratification					
The trade-off of convenience and privacy risks.						
Data sharing if there is a reciprocal benefit	Risk					
Shared data must lead to tangible advantages						
Convenience often outweighs privacy concerns.				Value		
A compromise between privacy and experience	Convenience	Moral Balance				
Weighing the benefits before sharing personal data						
Data sharing is acceptable for heightened rewards	Trade-off					
Balancing trust with the value of sharing data.						
A fair trade-off is expected for benefits.	Normalization					
It is like a mutual exchange—data for ease						

Table 2
Selective quotes, 2nd order themes, and aggregate dimensions.

2nd order themes	*Selective quotes from respondents*				
Intrinsic Privacy	*I don't like the idea of my data being out there without me knowing exactly what is being done with it. I need to feel in control of what I share.*	*It really bothers me when a company collects too much data on me without asking or explaining. I want to know what they're using it for.*	*I want my personal information to stay mine. It's just unsettling to think that companies are tracking every little thing I do online.*	*If I'm going to give out my data, I want to know exactly who's seeing it and why. It should be up to me to decide.*	*I don't want any random app or platform to have access to my personal data. I feel like I should be the one controlling that, not them.*
Moral Consistent	*If I feel like a virtual retailer is asking for more personal info than they need, I won't share it. My values around privacy are more important*	*I have always been careful with what I share. I try to stick to my principles and not give my data away just for a small benefit*	*If a VR retailer makes me feel uncomfortable about how they handle my data, I just won't shop there. My privacy is something I can't compromise on*	*For me, sharing my data should feel like a moral decision. If I feel like it's being exploited, I'm not okay with it*	*I try to be ethical about what I share. If I don't trust how a company will treat my data, I won't give it to them, no matter what*
Extrinsic Privacy	*I don't mind sharing some data if I get something in return, like discounts or better recommendations. But if it's too invasive, I'll pull back*	*If a VR store offers a better experience because they have my preferences, I'm fine with sharing certain details. But I still want control*	*It's a balance for me—if the data sharing gives me cool perks like tailored recommendations, I'm more likely to share. But if it feels excessive, I'm out*	*I think sharing data can be okay if it's helping me get something better, but it's all about what I'm getting in return*	*If sharing some info makes the experience more personalized, I'm okay with it. But if I feel like they're pushing it too far, I'll stop*
Moral Balance	*It is a balancing act for me. If the VR experience gives me a good deal or something unique, I'm willing to compromise on some privacy.*	*I get that sharing data might be necessary to get better deals or a personalized experience, but I'll always weigh the pros and cons first*	*I think it's fair to expect some trade-offs. If sharing my data leads to a better experience, I'll do it, but I need to be sure it's secure*	*Sometimes I feel like you have to give a little to get a little. If I'm getting value, I'm more open to sharing some information*	*It's about finding that middle ground—if I trust the brand and they offer something in return, I'll share some data, but it has to be worth it*
Ethical	*I don't care how cool the VR tech is—if they're sketchy with my data, I'm out. Privacy comes first.*	*Protecting my personal info should be standard. If a VR store can't handle that, why should I trust them*	*For me, being ethical means not just expecting brands to respect my data, but holding them accountable when they don't*	*With the latest cybersecurity systems, how are brands still messing up data privacy? Like, sort it out or lose customers, simple as that*	*If a VR shop's gonna act shady with my data, it's a massive red flag. I'd rather skip the tech than risk it*
Pragmatic	*I'll share my preferences if it makes the VR experience smoother, but there's a line—I'm not giving away my whole life*	*I get that sharing data helps the experience, but it's gotta feel worth it. No one likes being tracked just for nothing.*	*I'm okay with giving up a bit of privacy if it means I get better recommendations or exclusive deals*	*Look, I get it—some data sharing is chill, but there's a line. I don't need to feel like Big Brother's watching every move*	*I'll trade a bit of info for a better VR vibe, but I draw the line at feeling like my life's just one big ad campaign*
Virtue	*I try to stick to my values—even in VR. If a retailer's dodgy with data, it's not worth the perks*	*Being responsible with my data is part of who I am. If I share something, I want to know it's treated with care*	*I'm big on honesty, including the brands I interact with. If they respect my data, they earn my respect too*	*My principles don't just switch off when I put on a headset. Respecting my data isn't optional; it's basic decency*	*If a company doesn't vibe with my values, especially with data, they're not getting my cash—no matter how cool their VR is*
Value	*If I'm giving my data, I want something solid back—like discounts, tailored offers, or just a better experience*	*Transparency is everything. If I know what they're doing with my data and it's worth it, I'm in.*	*The benefits of VR shopping need to be real—like immersive experiences or exclusive deals —otherwise, why bother*	*If I'm handing over my details, the perks better be worth it—like VIP deals or a next-level shopping experience*	*It's all about the give and take. If a VR store's upfront about data use and it pays off for me, then yeah, I'm game*

over gratification.

For some participants, sharing personal data is considered a moral issue: "For me, sharing my data should feel like a moral decision. If I feel like it's being exploited, I'm not okay with it (P9)." This highlights how ethical concerns about data misuse influence consumer behavior, creating dissonance (Barta et al., 2023). Such ethical dissonance may lead to disengagement with the VR environment as consumers navigate the conflict between enjoying the benefits of VR shopping and maintaining moral consistency.

Extrinsic Privacy

Regarding extrinsic privacy, participants are more willing to share personal data if they perceive a tangible benefit in return, such as discounts or personalized experiences. "I don't mind sharing some data if I get something in return, like discounts or better recommendations. However, if it's too invasive, I'll pull back (P24)." This pragmatic approach balances privacy concerns and the immediate rewards of enhanced shopping experiences (Pandey & Pandey, 2025). However, it still hinges on the condition that the benefits outweigh the perceived intrusion into personal privacy (Fan et al., 2024).

"If a VR store offers a better experience because they have my preferences, I'm fine with sharing certain details. But I still want control" (P12). This indicates that while consumers are open to sharing data in exchange for value, they still desire control and transparency (Liyanaarachchi et al., 2023). Further, it demonstrates how extrinsic factors, like enhanced experiences, can mitigate privacy concerns, but only to a certain extent.

Participants also viewed data-sharing as conditional: "It's a balance for me—if the data sharing gives me cool perks like tailored recommendations, I'm more likely to share. But if it feels excessive, I'm out (P15)." This emphasizes the tension between ethical concerns (intrinsic privacy) and pragmatic desires. The willingness to share data for extrinsic benefits reflects the practical side of consumer decision-making in VR, demonstrating how VR retailers must navigate the fine line between offering personalized experiences and respecting consumer privacy (Enyejo et al., 2024; Devi & Gangwar, 2025). While consumers may be willing to share personal data in exchange for immediate rewards, they are not prepared to relinquish their ethical principles entirely.

Moral Balance

Moral balance emerges when participants weigh the pros and cons of sharing personal data in VR environments. "It is a balancing act for me. If the VR experience gives me a good deal or something unique, I'm willing to compromise on some privacy (P22)." Thus, consumers are often willing to make ethical compromises if they believe the benefits of the VR experience justify the trade-off (Zhou & Xie, 2024). It also depicts the ethical flexibility described where consumers navigate moral decisions by considering the rewards and risks of sharing personal information (Khan et al., 2023; Mahmoud, 2024).

"I get that sharing data might be necessary to get better deals or a personalized experience, but I'll always weigh the pros and cons first (P5)." This approach reinforces the idea of moral pragmatism, where ethical concerns are weighed against the tangible rewards of engaging with VR. The necessity of sharing personal information for an improved experience is acknowledged, but an overarching concern for privacy and ethical considerations balances it (Fan et al., 2024; Erensoy et al., 2024).

For some, the decision-making process is based on a trust relationship: "Sometimes I feel like you have to give a little to get a little. If I'm getting value, I'm more open to sharing some information (P19)." Nevertheless captures the balancing act that defines moral decision-making in VR retail. The willingness to compromise on privacy is contingent upon the perceived value of the experience, highlighting the

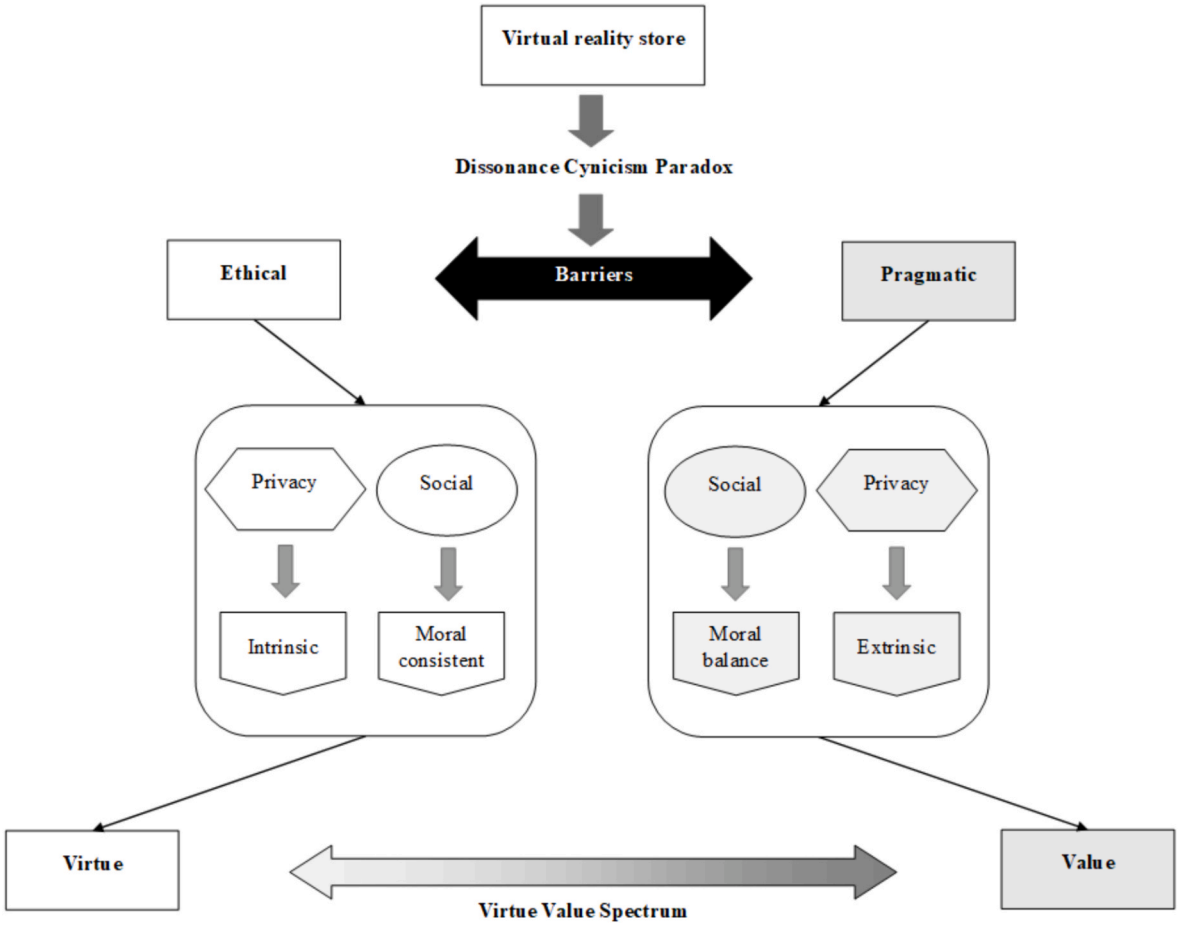

Fig. 1. Virtual value spectrum.

interplay between intrinsic and extrinsic privacy concerns (Martin, 2020). The moral balance concept emphasizes the role of Virtue Ethics in guiding consumers to weigh ethical principles against immediate rewards.

Ethical

Ethical concerns play a central role in shaping consumer attitudes toward VR retail. "I don't care how cool the VR tech is—if they're sketchy with my data, I'm out, privacy comes first (P17)." A clear indication that the primacy of ethical considerations over gratification. This reflects the influence of Virtue Ethics, where integrity and respect for privacy take precedence, even if it means forgoing the benefits of VR retail (Hursthouse & Glen, 2018).

Another participant emphasized the importance of transparency, saying, "Protecting my personal info should be standard. If a VR store can't handle that, why should I trust them? (P4)." Trust is foundational to ethical behavior, and when VR retailers fail to safeguard personal data, they undermine the ethical foundation of the consumer-brand relationship (Lin & Latoschik, 2022; Koohang et al., 2023).

For some, ethical behavior goes beyond personal privacy: "For me, being ethical means not just expecting brands to respect my data, but holding them accountable when they don't" (P20). This statement underscores the role of consumers in enforcing ethical standards and the importance of accountability in consumer behavior. It reflects the broader societal expectation that brands should be responsible stewards of consumer data (Ricci et al., 2023; Carter & Egliston, 2023). In VR retail, this ethical vigilance is crucial in managing consumer trust and engagement.

Pragmatic

The pragmatic perspective focuses on VR retail's immediate benefits, such as convenience, personalized recommendations, and exclusive deals. "I'll share my preferences if it makes the VR experience smoother, but there's a line—I'm not giving away my whole life (P15)." This statement reflects the tension between privacy concerns and the desire for enhanced experiences. The consumer is willing to share some data, but only if it improves the VR experience without crossing personal boundaries (Devi & Gangwar, 2025).

"I get that sharing data helps the experience, but it's gotta feel worth it. No one likes being tracked just for nothing (P1)." This highlights the pragmatic nature of VR shopping, where consumers are motivated by tangible rewards like personalized experiences and discounts.

For some participants, the benefits of VR shopping must outweigh privacy concerns: "I'm okay with giving up a bit of privacy if it means I get better recommendations or exclusive deals (P8)." This underscores the balance between ethical principles and the pragmatic desire for value. The willingness to share data in exchange for enhanced experiences reflects the central tenets of the virtue-value spectrum, where ethical and pragmatic considerations coexist, guiding consumer decision-making (Lutz et al., 2020; Ranzini et al., 2023). The pragmatic perspective emphasizes the importance of immediate, tangible rewards in consumer behavior (Viglia et al., 2023).

Virtue

Virtue plays a pivotal role in shaping how consumers navigate the ethical landscape of VR retail. "I try to stick to my values even in VR. If a retailer's dodgy with data, it's not worth the perks" (P9). This manifests the role of personal integrity in consumer decision-making. Virtue Ethics emphasizes the importance of aligning actions with core values, even when faced with the allure of convenience or rewards (Hursthouse & Glen, 2018).

Another participant stated, "Being responsible with my data is part of who I am. If I share something, I want to know it's treated with care (P4)" This underscores the connection between personal values and ethical behavior. For these consumers, responsible data sharing expresses their virtues, particularly integrity and respect for privacy. The desire for companies to handle their data responsibly reflects the consumer's expectation that brands align with their values (Acikgoz & Vega, 2022).

For some, the relationship with brands is based on mutual respect: "I'm big on honesty, including the brands I interact with. If they respect my data, they earn my respect too (P10)." This reflects a core tenet of Virtue Ethics: integrity and honesty are foundational to building trust. The ethical treatment of personal data reflects a brand's character, influencing consumer loyalty and engagement (Carter & Egliston, 2023). The quotes demonstrate how personal values shape consumer decisions, emphasizing the importance of integrity and responsibility in the consumer's actions.

Value

The value-oriented perspective emphasizes the tangible benefits that consumers seek when engaging with VR retail. "If I'm giving my data, I want something solid back—like discounts, tailored offers, or just a better experience" (P1). This reflects the pragmatic approach to data sharing, where consumers expect immediate, concrete rewards in exchange for their personal information. Thus, it reflects the importance of delivering value as a key driver of consumer engagement in VR retail (López, 2024).

Transparency is everything. If I know what they are doing with my data and it's worth it, I'm in (P19)." This shows that consumers are willing to share personal data if they trust the VR retailer on the use of data. Transparency is critical in managing privacy concerns and fostering trust, key components of the virtue-value spectrum (Acikgoz & Vega, 2022).

For some, the perceived value of the VR shopping experience must justify data sharing: "The benefits of VR shopping need to be real—like immersive experiences or exclusive deals—otherwise, why bother? (P12)." This underscores the need for VR retailers to offer compelling, meaningful benefits to encourage consumer participation. Without these tangible rewards, consumers are less likely to engage, highlighting the importance of value in driving consumer behavior (Flavián et al., 2021). The expectation of value plays a central role in the decision-making process, influencing how consumers balance the ethical and pragmatic dimensions of their engagement with VR retail (Smith et al., 2023).

The virtue-value spectrum and dissonance cynicism paradox

The Virtue-Value Spectrum is a conceptual model illustrating the ongoing balance consumers maintain between ethical principles, such as privacy, transparency, and moral consistency, and pragmatic rewards like convenience, personalization, and enhanced VR experiences. It highlights how consumer decisions fluctuate along a continuum where virtues guide restraint and caution, while value-driven motives push toward sharing data for tangible benefits. The Dissonance Cynicism Paradox describes the emotional and cognitive tension consumers experience when their ethical beliefs conflict with VR retailers' data practices. This paradox captures the simultaneous discomfort (dissonance) and distrust (cynicism) consumers feel toward opaque or intrusive data collection, which can deter and motivate engagement depending on perceived transparency and benefits.

Our study's findings reveal that consumers consistently weigh intrinsic privacy—control over personal data—as a fundamental right, often prioritizing moral consistency even when convenience is tempting. Yet, when VR retailers demonstrate transparency, accountability, and clear reciprocal value, consumers' ethical tensions ease, and pragmatic choices prevail, as described by the virtue-value spectrum. The dissonance cynicism paradox explains this nuanced emotional struggle, showing how discomfort can coexist with continued participation if the perceived rewards justify the trade-off. Together, these models provide a robust framework for understanding how consumers navigate the intersection of ethical concerns and pragmatic desires in VR retail. By emphasizing virtues like honesty, courage, and prudence, alongside the need for transparency and value alignment, VR retailers can build trust and foster meaningful consumer engagement that respects ethical expectations while delivering valuable experiences. Fig. 1 shows the model.

4. Discussion

The findings reveal a complex landscape where both ethical virtues and pragmatic evaluations shape consumer privacy preferences in VR retail. An evident tension exists between intrinsic privacy values—rooted in personal integrity, autonomy, and moral consistency—and extrinsic considerations such as personalized experiences and convenience. This duality reflects the interplay captured in the Virtue-Value Spectrum. Consumers are not simply privacy advocates or data pragmatists; instead, they continuously oscillate between these positions, depending on the level of transparency, accountability, and control.

Moreover, participants' emphasis on moral consistency and virtue-oriented reasoning indicates that VR environments are not viewed as ethically neutral. Instead, consumers carry their ethical expectations into these immersive spaces, expecting the same (or even heightened) levels of responsibility from retailers as they would in traditional digital commerce. This elevates the role of Virtue Ethics beyond an abstract principle—it becomes a practical lens through which consumers evaluate trustworthiness and engagement.

The emergence of the Dissonance Cynicism Paradox points to an unresolved psychological tension. While consumers are often willing to participate for rewards, their ethical discomfort lingers. Even when personalization aligns with consumer values, unresolved ethical discomfort can undermine long-term trust if cynicism persists. This discomfort acts as a fragile threshold—once crossed, it risks disengagement and reputational harm. These findings suggest that VR retailers must move beyond basic compliance.

4.1. Study 2

4.1.1. Method

We retrieved secondary data from leading VR-integrated retailers—Amazon, Alibaba, eBay, and IKEA—from the Instagram pages focusing on posts, comments, and customer interactions. These retailers were selected for their success in enhancing customer experiences through VR. For instance, IKEA VR Pancake Kitchen offers an interactive virtual cooking experience. Customer reviews were gathered from Trustpilot, which is known for its transparent user-generated feedback. Trustpilot reviews provide in-depth consumer perspectives on VR shopping experiences, offering insights into preferences and frustrations. Given the study's aim to explore ethical tensions and privacy-related discomfort in VR retail, we prioritized data collection on 1-star and 2-star reviews as they directly surface consumer discontent and ethical conflict. We used Trustpilot's built-in filtering tools to identify relevant reviews and then systematically copied and pasted each companies' entries to construct the database. (see Appendix 3).

Instagram was selected due to its 25.3 % global audience growth in January 2024 and its highly immersive, visually driven engagement. The platform aligns with this study's objectives by providing real-time, user-generated insights into ethical and privacy concerns in VR retail.

We utilized the "IG Comments Export" Chrome extension to extract and download comments into an Excel spreadsheet. Instagram data was gathered spanning 15 months (October 2023–December 2024), covering diverse marketing campaigns and seasonal trends. 1,848 posts and 35,500+ comments were collected before pre-processing, ensuring a representative sample despite variations in retailers' posting frequency (see Appendix 4).

4.1.2. Data pre-processing

We pre-processed Trustpilot and Instagram content to ensure data quality for qualitative analysis. To verify relevance, we implemented a multi-step process. First, we filtered the dataset to include only reviews and comments that mentioned VR-specific terms, such as "virtual reality," "VR shopping," "immersive experience," or platform-specific VR features (e.g., "IKEA VR Kitchen," "Amazon VR View"). Then, we removed repeated comments from the same user, preventing over-representation. Noise removal excluded irrelevant content, such as spam, advertisements, and standalone emojis. Second, two authors independently reviewed and cross-validated a random subset to enhance dataset robustness, retaining only reviews and comments deemed relevant by both (Miles & Huberman, 1994). This process resulted in a dataset composed exclusively of VR-related comments and reviews.

4.1.3. Data analysis

Following collection, the dataset underwent a cumulative three-round coding process (open, axial, and selective) using NVivo 10, which facilitated systematic theme development and ensured analytical rigor. Trustpilot and Instagram were utilized to triangulate data sources, ensuring robustness. Data analysis ceased upon theoretical saturation, when the iterative comparison between coding and contents revealed no new themes in the added data (Saunders et al., 2018). This confirmed that all key constructs and relationships were captured, maintaining analytical depth and reliability. The data, classified as "public figures," posed no ethical concerns. However, all users were anonymized to protect privacy (Coffelt, 2017). Original comments were analyzed, but identifying details were omitted or rephrased when presenting findings to ensure anonymity (British Psychological Society, 2017).

4.1.4. Findings and discussion

Study 2 extends the findings from Study 1 by analyzing unsolicited consumer reviews and comments to assess the external relevance of the Virtual-Value Spectrum. Rather than generating new themes, this study validates and contextualizes the virtue-value spectrum and dissonance-cynicism paradox within broader, real-world consumer interactions.

Intrinsic Privacy

Consumers express strong concerns about data control in VR retail. A Trustpilot review criticizes Amazon's extensive data collection, stating, "Amazon tracks everything, from voice recordings to purchase history. I have no control over my own data." This aligns with Virtue Ethics, where privacy is seen as a fundamental right. An IKEA customer comments, "IKEA's data control panel finally lets me manage my privacy settings and understand how my data is used." When retailers lack clear policies, trust erodes, creating ethical dissonance. Additionally, privacy cynicism is growing. A review highlights, "Alibaba shares many of user data, including purchases and browsing history, raising serious concerns." This uncertainty fosters psychological discomfort, pushing some consumers to prioritize privacy over VR engagement.

Moral Consistency

Moral consistency shapes consumer behavior in VR retail, especially regarding privacy. A Trustpilot review criticizes eBay's data practices: "eBay collects a huge amount of data. I prefer not to share more than necessary." This reflects how consumers align their actions with their ethical values, a core principle of Virtue Ethics. Similarly, privacy concerns impact purchasing on Alibaba, with a customer commenting, "I hesitate to share personal information due to unclear data policies." Many consumers prioritize their values over convenience, often avoiding retailers with opaque data practices. Some disengage entirely, as one Trustpilot reviewer on IKEA notes: "I stopped using certain VR platforms because my data was being exploited without my consent." Ethical dissonance can push consumers away from VR shopping, reinforcing their commitment to privacy.

Extrinsic Privacy

Consumers weigh data sharing against tangible benefits. An Amazon Trustpilot reviewer claims, "It is ok for me to share data for discounts or better recommendations, but not if it's aggressive" Similarly, an Amazon customer on Instagram comments, "I like personalized experiences, but I still want freely decide on sharing my data." While consumers appreciate customization, transparency remains crucial. Another Alibaba Trustpilot review highlights, "If data sharing gets me more benefits, there is a deal. However, I opt out when it is unnecessary." VR retailers must balance personalization with privacy, ensuring that while

consumers seek rewards, they do not compromise their ethical values.

Moral Balance

Consumers weigh the benefits of data sharing against privacy concerns in VR retail. An IKEA customer on Instagram states, "I like VR, it is fun and convenient, but I fear about how much data the platform collects." This highlights the tension between innovation and data security. An Amazon Trustpilot reviewer claims, "I prefer personalized recommendations, I don't want to waste time with generic content. On the other hand, I carefully share my data." This reflects the balance between tailored experiences and privacy protection. Another Trustpilot reviewer stated, "I'll provide access to my data to get superior experience, but in turn eBay needs to be clear about how they use it." Transparency remains key to maintaining trust in VR retail.

Ethical Considerations

Ethical concerns strongly shape consumer attitudes toward VR retail. An Alibaba Instagram comment states, " I don't care if the VR tech is cool. If it messes with my data, I won't use it." This highlights how consumers prioritize privacy over convenience, aligning with Virtue Ethics. Transparency is key to trust. An Amazon customer on Instagram writes, "They can't protect my data, why should I trust them?" Mishandling personal data damages credibility and weakens consumer relationships. Consumers also demand accountability. An eBay Trustpilot reviewer says, "Being ethical isn't just about privacy, it's about holding brands responsible when they fail." This reinforces the expectation that VR retailers act as responsible data stewards to maintain trust and engagement.

Pragmatic Perspective

Consumers often weigh the immediate benefits of VR retail, such as convenience and personalized deals, against their privacy concerns. For instance, an Amazon customer on Instagram commentes, "I'm cool with sharing some preferences if it makes my VR shopping smoother, but there's a limit. I won't share unnecessary information." This highlights the balance consumers seek between enhanced experiences and maintaining personal boundaries. Also, an eBay Instagram comments claims, "I understand that sharing data can improve my experience, but it needs to be valuable. No one likes being tracked for no reason." This reflects the expectation that sharing personal data should result in tangible benefits, such as personalized recommendations or discounts. Another eBay customer shares on Instagram, "I am ready to 'negotiate' a bit of privacy for better recommendations and great deals." This sentiment underscores the trade-off consumers are willing to make between privacy and the value derived from personalized VR shopping experiences. These perspectives illustrate that while consumers are open to sharing personal data for immediate, tangible rewards, they maintain a cautious approach, ensuring that the benefits outweigh their privacy concerns.

Virtue

Virtue shapes how consumers approach ethics in VR retail. A reviewer on Trustpilot highlights, "If Alibaba plays games with my data, no benefit can compensate it." This reflects Virtue Ethics, where integrity outweighs convenience. Consumers also expect brands to handle their data responsibly. An Amazon customer on Instagram states, "If I share my data, I need to know it's in good hands." Data-sharing is not just a transaction—it reflects trust and privacy expectations. For many, trust is mutual. A Trustpilot reviewer notes, " I appreciate IKEA when respects my data… earn my trust, and you'll earn my business, too!" Ethical handling of data builds consumer loyalty, reinforcing the idea that honesty drives trust in VR retail.

Value

Consumers often weigh the tangible benefits of sharing their data in VR retail environments. An Amazon customer on Instagram claims, "When I provide my data, I pretend something back… like discounts, offers, or whatever is convenient for me." This reflects a pragmatic approach where immediate rewards justify data sharing. Transparency plays a crucial role in this exchange. A reviewer about eBay on Trustpilot notes, "Convenience and advantages are the key to access my data…" When VR retailers clearly communicate data usage and offer valuable returns, consumers are more inclined to participate. The perceived value of VR shopping experiences also influences data-sharing decisions. An Alibaba customer on Instagram shares, "The benefits of VR need to be real, tangible… like immersive experiences or discounts… otherwise why I should bother??" This underscores the necessity for VR retailers to provide compelling benefits to encourage consumer engagement.

5. Discussion

Study 2 demonstrates how ethical tensions in VR retail emerge in unsolicited, consumer-generated content, validating and extending the virtue–value spectrum and dissonance–cynicism paradox. Unlike the reflective interviews of Study 1, Trustpilot reviews and Instagram comments reveal spontaneous reactions, showing that privacy and ethics debates are woven into everyday discourse.

A key insight is the performative nature of ethics: consumers use public platforms to voice moral judgments, turning privacy complaints into acts of digital consumer activism. Statements like refusing to shop with "brands playing games with data" highlight how privacy has become a visible marker of corporate integrity.

Importantly, differences between platforms revealed subtle variations in how ethical concerns are expressed. Trustpilot reviews were generally longer, more deliberate, and centered on specific transactions or systemic critiques, such as dissatisfaction with data handling, unclear policies, or functional breakdowns. In contrast, Instagram comments were typically shorter, more reactive, and embedded in visual or promotional contexts, offering real-time emotional responses to VR features, brand messaging, or perceived ethical missteps. These tonal and contextual differences enhanced the depth of the analysis, allowing us to triangulate consumer sentiment across structured and informal communication environments.

The findings also illustrate a more pronounced form of the dissonance–cynicism paradox. While consumers still weigh convenience against privacy, their frustrations are less ambivalent, many openly criticize or disengage from brands that cross ethical boundaries. Cynicism becomes communicative, functioning both as an emotional response and a warning signal to other consumers.

Lastly, Study 2 shows the contagion of ethical expectations. Failures by one retailer can erode trust in VR retail as a whole, suggesting that ethical credibility is cumulative and industry-level strategies are essential. This underscores the urgency of transparency, user control, and visible ethical commitments in VR commerce.

6. Overall discussion

This study extends virtue ethics theory into immersive digital contexts while revealing new dimensions of privacy decision-making in VR retail. While Song & Kim (2018) demonstrated that virtue ethics principles guide socially responsible consumption through virtues such as integrity, honesty, responsibility, and wisdom, the findings reveal how these moral character foundations adapt to VR environments. The virtue-value spectrum shows participants dynamically navigating between ethical positions, extending Bag et al.'s (2023) emphasis on self-control and wisdom in digital contexts. This supports Arora et al.'s (2025) call for businesses to prioritize integrity, transparency, and responsibility in their data practices, while showing how consumers actively exercise these principles.

The results extend Festinger's (1964) classical understanding of psychological dissonance as mental discomfort arising from conflicting cognitions. In VR retail contexts, this dissonance manifests as ongoing tension between enjoying immersive, personalized experiences and ethical concerns about data privacy, rather than temporary discomfort requiring resolution. This builds upon Devi & Gangwar's (2025) work on dissonance in commercial contexts where consumers face conflicts between negative or positive previous experiences and new stimuli. The findings support the extensive research on personalization versus

Table 3
Future research agenda.

Research focus	Key topics
Ethical Governance in VR Retail	• Develop ethical frameworks for virtual reality retail, ensuring data protection, transparency, and user control. • Examine the ethical responsibilities of VR retailers in handling consumer biometric data. • Explore consumer trust and ethical decision-making in VR commerce.
Consumer Privacy & Data Protection	• Investigate biometric data collection's ethical and legal implications in VR retail. • Assess consumer attitudes towards data security measures and their impact on purchasing behavior. • Explore the effectiveness of privacy-enhancing technologies in reducing consumer privacy cynicism.
Psychological Dissonance in VR Retail	• Analyze how consumers reconcile immersive VR experiences with ethical concerns. • Investigate strategies for reducing psychological discomfort in VR shopping environments. • Examine how virtue ethics influences consumer resolution of ethical dilemmas in VR spaces.
Privacy Cynicism & Trust	• Study how repeated privacy breaches impact consumer trust in VR retailers. • Examine the role of corporate transparency and ethical AI in mitigating privacy cynicism. • Investigate the psychological and behavioral effects of long-term exposure to VR privacy risks.
Regulatory & Policy Considerations	• Evaluate the adequacy of current data protection laws (e.g., GDPR, CCPA) in regulating VR privacy risks. • Explore policy recommendations to address ethical concerns in VR-driven personalized marketing. • Assess the effectiveness of self-regulatory initiatives in balancing innovation with consumer rights.
Virtue-Value Spectrum in VR Retail	• Explore how consumers navigate the trade-off between ethical responsibility and pragmatic benefits in VR shopping. • Examine how cultural differences influence the prioritization of ethical virtues in VR commerce. • Investigate interventions that promote ethical consumer behavior while preserving immersive experiences • Include broader review ratings to examine how neutral or positive experiences inform ethical decision-making within the virtue-value spectrum.
Dissonance-Cynicism Paradox in VR Engagement	• Analyze how privacy cynicism and psychological dissonance simultaneously affect consumer engagement in VR retail. • Investigate how VR brands can mitigate ethical discomfort while • maintaining personalization strategies. • Develop models predicting how ethical tensions impact long-term brand loyalty in VR commerce

privacy in digital contexts (Awad & Krishnan, 2006; Chellappa & Sin, 2005; Karwatzki et al., 2017; Zeng et al., 2021) while revealing how the ethical dilemma of sharing data for perceived benefits despite privacy risks operates in immersive environments.

The conceptualization of privacy cynicism builds directly upon Hoffmann et al.'s (2016) four-dimensional model encompassing mistrust, uncertainty, powerlessness, and resignation. However, the findings reveal "active cynicism" where participants use public platforms to voice concerns, rather than the emotional disengagement from privacy-related actions described by Zhang et al. (2025). This extends understanding of privacy cynicism as a negative experience in sharing personal data (Ranzini et al., 2023) by showing how consumers maintain engagement while expressing skepticism. The results support research showing that privacy cynicism represents a critical barrier to consumer trust and engagement (Acikgoz & Vega, 2022; Khan et al., 2023) while revealing how consumers navigate these barriers.

The findings engage with concerns about VR's potential for behavioral manipulation through persuasive design techniques that subtly influence consumer choices (López, 2024; Selinger et al., 2023). While the literature emphasizes privacy protection, regulatory compliance, and technological risks (Egliston et al., 2024), the virtue-value spectrum reveals how moral character shapes ethical consumer decisions. This supports the call for companies to ensure their VR environments foster ethical engagement and consumer trust rather than exploit vulnerable consumers (Goncalves et al., 2024). The results also engage with concerns about privacy violations, manipulation, and erosion of autonomy in VR environments (Carter & Egliston, 2024), while showing consumer agency in ethical evaluation.

The study addresses the underexplored role of psychological dissonance in VR retail, as research on cognitive dissonance in immersive technologies remains limited (Zhou & Xie, 2024), and the scarce research on privacy cynicism in VR retail contexts (Barta et al., 2023; Giaretta, 2024; Hoffmann et al., 2024). While transparency and trust reduce dissonance (Velasco et al., 2024), and perceived control over personal data significantly shapes consumer attitudes (Zeng et al., 2021), the virtue-value spectrum and dissonance-cynicism paradox provide mechanisms for understanding how consumers navigate the privacy-personalization tension in immersive commerce, addressing gaps in understanding the interplay between privacy cynicism, consumer vulnerability, and ethical dissonance.

6.1. *Theoretical implications*

We provide four theoretical contributions. First, we extend Virtue Ethics into a digitally immersive setting where normative ambiguity prevails (Egliston et al., 2024; López, 2024). Unlike previous work that applies Virtue Ethics to social interaction, our findings show that consumers in VR retail actively draw on moral virtues. These virtues—honesty, integrity, and responsibility—emerge through self-regulation. We present that these virtues are not fixed traits, but context-dependent responses to perceived ethical risk. This reframing shifts Virtue Ethics from abstract moral ideals to practical consumer strategies, providing a more dynamic perspective on ethical agency in virtual marketplaces.

Second, we expand psychological dissonance theory by demonstrating how immersive technologies intensify the internal conflict between ethical concern and experiential satisfaction. While dissonance has traditionally been studied in the context of isolated purchase decisions (Devi & Gangwar, 2025; Velasco et al., 2024), our data reveal that continuous biometric tracking and hyper-personalization heighten this discomfort over time. Consumers do not simply experience situational tension but face a sustained awareness of ethical compromise. This advances dissonance theory by highlighting how immersive retail settings extend and deepen cognitive and emotional conflict.

Third, we refine the concept of privacy cynicism by applying it in a context of persistent surveillance and limited consumer control. Unlike earlier research that treats cynicism as a static sense of distrust (Hoffmann et al., 2024; Zhang et al., 2025), we find that consumers develop a nuanced form of cynicism that influences their ethical engagement. Despite concerns, they continue to participate, often believing that opting out is futile. This deepens existing understandings of privacy cynicism by illustrating its dynamic relationship with credibility, autonomy, and compliance in immersive retail spaces.

Fourth, we develop two original conceptual contributions: the virtue–value spectrum and the dissonance–cynicism paradox. The virtue–value spectrum captures how consumers balance moral values with pragmatic outcomes such as personalization and convenience. Rather than choosing one over the other, consumers move along this spectrum as context changes. The dissonance–cynicism paradox explains how ethical discomfort (stemming from dissonance) and resigned

participation (driven by cynicism) coexist. Consumers feel uneasy yet continue engaging, revealing a complex psychological state not accounted for in prior models of ethical consumption.

6.2. Managerial implications

This study presents five key managerial implications. First, VR retailers can utilize the Virtue–Value Spectrum to personalize their offerings ethically. Offer tiered data-sharing options: introductory (no data), medium (for general personalization), and advanced (for AI-driven offers). Each level should offer clear value—such as discounts or early access to sales. Provide users with a dashboard or data receipt showing what was collected and what they received in return. This builds transparency and fairness.

Second, VR developers could reduce psychological discomfort by embedding ethical design features. Voice-activated or facially recognizable "privacy modes" can let users pause or control data sharing while shopping. Contextual permission prompts—for example, activating the camera only during virtual try-ons—can minimize intrusiveness. Real-time privacy signals, such as lock icons or color-coded borders, help users understand when and why data is being collected. These cues restore control and reduce dissonance and cynicism.

Third, policymakers and regulators can develop VR-specific privacy standards. Multi-layered consent processes can be integrated into the onboarding process to guide users through the settings. Gamified privacy tutorials, particularly in the context of sensitive data collection, can promote informed consent. These tools help reduce cognitive overload and address regulatory gaps that contribute to consumer cynicism.

Fourth, industry alliances like the XR Safety Initiative (XRSI) and ISO should lead the creation of a voluntary "Ethical VR Retail" certification, evaluating platforms on transparency, data minimization, and user control. Public dashboards—similar to trust labels—can help consumers compare privacy practices. Innovation sandboxes, supported by bodies such as the European Commission or national privacy labs, should allow collaborative testing of new features involving developers, regulators, and users.

Fifth, global VR retailers must ensure compliance with frameworks such as GDPR, CCPA, and India's DPDP Act. Consent should be granular, opt-outs should be simple, and data retention should be clearly defined. Privacy policies must be interactive and easy to understand. Regular third-party audits and transparent breach disclosures, aligned with bodies like the European Data Protection Board (EDPB), can reinforce trust and international accountability.

6.3. Limitations and future research avenues

Following Magnani and Gioia (2023), the proposed conceptual model can be empirically tested using quantitative methods to assess its relevance across various virtual retail settings. Further research see Table 3) should investigate the psychological drivers of privacy concerns and ethics, especially in data-intensive fields like healthcare and finance. Cross-cultural studies are also needed to understand how differing regulations and cultural attitudes affect consumer privacy perceptions.

This study centers on consumer views and does not address VR retailers' strategic motivations in managing privacy and ethics. Future work should include industry stakeholders—policymakers, developers, and executives—to provide a comprehensive perspective. Exploring corporate strategies that balance data personalization with ethical responsibility could yield actionable insights for trust-building.

Additionally, this study relied on secondary data from Trustpilot and Instagram; future research could incorporate interviews, surveys, and advanced techniques like natural language processing and sentiment analysis to deepen contextual understanding. Sector-specific studies would further clarify evolving privacy and ethical challenges.

6.4. Conclusion

This study reveals that consumers face psychological dissonance when their ethical values clash with VR retailers' data practices, compounded by privacy cynicism—skepticism about companies protecting personal data. Using Virtue Ethics, it highlights how virtues like courage, honesty, and prudence help consumers manage these tensions. The research introduces the virtue-value spectrum, showing how consumers balance ethical concerns with practical benefits like personalized experiences. The dissonance cynicism paradox illustrates how ethical worries and cynicism together shape behavior, emphasizing the need for transparency and accountability to build trust. This work advances theory by integrating psychological dissonance and privacy cynicism within a virtue ethics framework, offering a deeper understanding of ethical decision-making in VR retail.

CRediT authorship contribution statement

Gajendra Liyanaarachchi: Writing – original draft, Methodology, Formal analysis, Conceptualization. **Fidan Kurtaliqi:** Visualization, Methodology, Investigation. **Giampaolo Viglia:** Writing – review & editing, Validation, Supervision, Project administration. **Moreno Frau:** Writing – original draft, Formal analysis, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix

A.1:. Participant profile of study 1

Participant ID	Age	Occupation	VR experience	VR Use Frequency	VR Retail Purchase Frequency
P1	18	University Student	Beginner	Weekly	Monthly month
P2	22	Software Developer	Intermediate	Weekly	Twice a month
P3	21	Freelance Designer	Beginner	Monthly	Quarterly
P4	25	Customer Service Agent	Advanced	Weekly	Monthly
P5	19	University Student	Beginner	Weekly	Twice a month
P6	23	Marketing Assistant	Intermediate	Bi-weekly	Monthly
P7	20	Retail Assistant	Beginner	Monthly	Twice a year
P8	24	Graphic Designer	Advanced	Weekly	Monthly
P9	22	Freelance Writer	Intermediate	Weekly	Quarterly
P10	19	University Student	Beginner	Weekly	Weekly
P11	23	Junior Accountant	Intermediate	Monthly	Twice a month

(continued on next page)

(*continued*)

Participant ID	Age	Occupation	VR experience	VR Use Frequency	VR Retail Purchase Frequency
P12	21	Part-Time Salesperson	Intermediate	Weekly	Monthly
P13	25	Software Developer	Advanced	Weekly	Monthly
P14	20	University Student	Beginner	Weekly	Twice a month
P15	22	Entrepreneur	Advanced	Weekly	Monthly
P16	24	Software Engineer	Intermediate	Weekly	Twice a month
P17	21	Content Creator	Beginner	Monthly	Quarterly
P18	25	Digital Marketing Manager	Advanced	Weekly	Twice a month
P19	23	Hospitality Worker	Beginner	Monthly	Twice a year
P20	19	University Student	Intermediate	Weekly	Weekly
P21	24	Data Analyst	Beginner	Monthly	Twice a month
P22	25	Event Coordinator	Advanced	Weekly	Monthly
P23	23	Part-Time Graphic Artist	Intermediate	Weekly	Quarterly
P24	20	Intern	Beginner	Weekly	Monthly
P25	21	Retail Assistant	Intermediate	Weekly	Twice a month
P26	24	Web Developer	Advanced	Weekly	Monthly
P27	25	Product Manager	Advanced	Weekly	Weekly
P28	22	Call Centre Agent	Beginner	Monthly	Quarterly
P29	23	Assistant Manager	Beginner	Monthly	Twice a month
P30	18	University Student	Advanced	Weekly	Monthly
P31	22	Junior Consultant	Advanced	Weekly	Weekly
P32	25	Business Analyst	Advanced	Weekly	Monthly

A.2:. Interview questions

1. Can you describe your first experience using VR for shopping? How did it compare to your expectations?
2. What motivated you to shop in a virtual reality retail environment?
3. What personal information do you usually share when shopping online or in VR?
4. What are the main benefits of using virtual reality for shopping compared to traditional methods?
5. Have you ever felt uncomfortable or unsure about any features or data collection methods during your VR shopping?
6. Did you feel your privacy was at risk during your VR shopping experience? Why or why not?
7. How do you typically decide whether to trust an online or VR retailer?
8. How much trust do you have in VR retailers when handling your data?
9. What role do reviews or recommendations from others play in your trust towards VR shopping platforms?
10. Have you ever hesitated to provide personal information during a VR shopping experience? What caused that hesitation?
11. How do you feel VR shopping affects your sense of control over your data?
12. How should VR retailers balance personalization and privacy protection?
13. Are there any features or safeguards you wish VR retailers would implement to protect your privacy better?
14. In your opinion, what ethical concerns should VR retailers address when collecting consumer data?
15. How could VR shopping be improved to enhance user experience and privacy protection?
16. Have you noticed any privacy policies or practices differences between VR retailers and traditional online stores?
17. How important is transparency from VR retailers about how your data is used?
18. Do you think your VR shopping behavior changes depending on the device or platform you use? Why?
19. Have you ever stopped using a VR retail platform due to privacy or ethical concerns? Can you describe what happened?
20. How do you generally feel about the trade-off between the benefits of VR shopping (e.g., convenience, personalization) and the potential privacy risks?

A.3:. Number of 1-star, 2-star, and total reviews on Trustpilot per selected retail using VR

Company	1-star review	2-star review	Reviews Downloaded	Pre-processed (n, % of downloaded)	Analysed (n, % of downloaded; % of pre-processed)
Amazon	23,093	2,147	36,446	1,512 (4.15 %)	426 (1.17 %; 28.17 %)
Alibaba	2,802	226	25,485	968 (3.80 %)	278 (1.09 %; 28.72 %)
eBay	11,862	492	14,292	545 (3.81 %)	151 (1.06 %; 27.71 %)
IKEA	19,709	1,423	26,011	882 (3.39 %)	205 (0.79 %; 23.25 %)
Total	—	—	**102,234**	**3,907 (3.82 %)**	**1,060 (1.04 %;27.13 %)**

A.4:. Number of posts, comments, and followers on Instagram per selected retail using VR

Company	Followers	Posts	Comments Downloaded	Pre-processed (n, % of downloaded)	Analysed (n, % of downloaded; % of pre-processed))
Amazon	5,400,000	592	13,888	1,043 (7.51 %)	290 (2.09 %; 27.79 %)
Alibaba	12,000,000	576	14,894	1,189 (7.99 %)	318 (2.14 %; 26.74 %)
eBay	1,200,000	357	2,010	140 (7.97 %)	45 (2.24 %; 32.14 %)
IKEA	1,600,000	323	4,752	280 (5.89 %)	99 (2.08 %; 35.36 %)
Total	—	—	**35,544**	**2,652 (7.46 %)**	**752 (2.12 %; 28.27 %)**

A.5:. Distribution of the used quotes per company and data source

Company/Data source	Trustpilot reviews	Instagram comments	Total
Amazon	3	5	8
Alibaba	3	3	6
eBay	4	2	6
IKEA	2	2	4
Total	**12**	**12**	**24**

Data availability

Data will be made available on request.

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