IMPACT OF IMMERSIVE TECHNOLOGIES ON GEN-Z PURCHASE DECISIONS IN INDIAN APPAREL SECTOR

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ABSTRACT

Purpose: The introduction of digital transformation technologies like chatbots, the metaverse, augmented reality, natural language processing, and artificial intelligence (AI) is causing a paradigm change in the Indian retail sector. This study investigates how these technologies affect the purchasing decisions of Generation Z (Gen-Z) customers in the Indian retail clothing industry.

Design/Methodology/Approach: Data were gathered from 220 Gen-Z respondents (aged 18–25) in Jharkhand using structured online questionnaires that used a 5-point Likert scale as part of a quantitative, descriptive, and hypothesis-testing research methodology. In addition to looking at the link between perceived brand innovativeness and customer loyalty, the study explores the effects of AI tools, AR features, NLP/chatbots, and metaverse experiences on purchase decision, shopping attitude, trust, and buy intention. One-sample t-tests and Pearson correlation were used in the data analysis, which was done with SPSS and Excel.

Findings: The findings indicate that whereas AR considerably improves shopping attitude ($p = 0.0021$), AI technologies and NLP/chatbots have no discernible effect on trust or purchase decisions, respectively. There is a growing tendency of metaverse experiences impacting purchase intention ($p = 0.0783$). There is a significant positive link between perceived innovativeness and loyalty ($r = 0.617$, $p < 0.001$).

Research Limitations: Additionally, it highlights issues like inclusion and data protection, providing room for more immersive commerce research.

Managerial Implications: The results underline the necessity for more customization in AI and chatbot engagements, as well as the significance of immersive technology in attracting Gen-Z customers.

Originality/Value: This study adds to the little body of research on Retail 4.0 in India and provides marketers with useful information for creating tech-driven, youth-focused retail experiences.

Keywords*:* Retail Marketing, GenZ, Consumer Behaviour, Marketing, Metaverse, Augmented Reality (AR)

Introduction

The retail market in India is the fourth largest globally and the third largest in Asia. As per the most recent research available on www.statista.com, the retail market in India had a value of 883 billion US dollars in 2020, a decrease from 950 billion dollars in 2018. It is anticipated that its value will exceed 1.7 trillion by 2026, which would be an increase of more than 80 percent from 2018. The Indian retail industry began to organize itself with the opening of department stores, specialty shops, strip malls, E-Trailers, arrangement killers, and so forth etc. (Sandhya and Professor,2016).

A number of recent occurrences, such as the COVID-19 pandemic, have made it possible for many companies to foster the quiet but steady progress of immersive technologies, which has increased and exaggerated interest in the community. (Zallio and Clarkson,2022)**.** Moreover, the COVID Pandemic has contributed towards the change in consumer buying behaviour in a big way. Retailers have been working hard to upgrade and innovate their product and services in the wake of the ongoing change in marketing Environment across the globe.

AI holds great potential for Indian businesses, and this potential is only growing. 50% of companies want to increase their investments in AI over the next two years, according to a Deloitte India poll, demonstrating the technology's anticipated future growth trajectory (Khatri,2023).

In recent years, the retail operations of numerous corporations, like Carrefour, Tesco, Wal-Mart, METRO Group, and others, have added to the complexity and sophistication of the market by attempting to understand and anticipate consumer demands and wants in real time. With the emergence of significant retail companies like Future Group, Reliance Retail, Shoppers' Stop, and Max Retail, among others, similar developments in the Indian retail market are unavoidable.
(Deepak and Meera, 2017).

Furthermore, the Exploratory Buying Behavior Tendency (EBBT) framework, based on exploratory information search, offers insights into how consumers explore the features and variety of brands within the Metaverse. Two aspects of exploratory buying behaviour are distinguished by EBBT: exploratory information searching (EIS) and exploratory product acquisition (EAP). EIS denotes cognitive stimulation through knowledge acquisition, whereas EAP represents the need for innovation and sensory stimulation (Kaur et al.,2023).

It is necessary to implement Omni channel retail strategies that go beyond simply merging online and offline channels and instead establish a seamless cross-channel buying experience. Retailers must consider customer preferences, technological capabilities, and operational constraints in order to satisfy consumers' expectations of an Omni channel experience. Merchants may provide cohesive and pleasurable experiences that satisfy the ever-changing needs of modern consumers by comprehending and effectively resolving these problems (Khan, 2024).

Consumer buying behaviour has been changing every-day in the wake revolution in Information technology. According to projections, the world's total data production, capture, copying, and consumption will rise quickly to 149 zettabytes by 2024 (Gkikas and Theodoridis, 2024). This development has provided with big challenge as well as opportunities for Indian Retail Marketers in understanding the psychological factors influencing consumer buying behaviour like motivation and needs (both hedonic and utilitarian needs), attitude, personality, self-concept (Real Vs Ideal self) and perception. Retail Marketers are adapting very fast to these technological development in pursuit of developing the new market offering and serving the customers with tailor-made products. This way Retail Marketers are successfully fulfilling needs like time saving, convenience, access to latest technologies, value for money, personalized pricing are concerned (Kumar Jha, 2023). Customers come to physical store to just get an in-store feel of the product, not to make the final purchase. They return back to online app and compare the discounts and offers, and finally choose the best offer and make online purchase (Digital Transformation in Retail Industry, 2022).

Augmented reality, or AR, is the integration of digital objects—such as picture images or video overlays—into the physical world through the use of devices like smartphones, desktop computers, and eyeglasses (Alam et al., 2021). By incorporating virtual processes like graphics, digital images, or feelings as a novel way to engage with the real environment, augmented reality (AR) technology enhances our experiences (Ng & Ramasamy, 2018). Many companies are starting to use augmented reality (AR) technology to communicate with their customers because of its enormous potential. AR can assist marketers in using more inventive methods to promote their goods (Ng & Ramasamy, 2018).

An intriguing and novel way for people to socialize and engage is being created by the metaverse, a digitally immersive environment where individuals connect through immersive technologies. According to projections, 25% of people will visit the metaverse daily for at least an hour by 2026 (Zallio & Clarkson, 2022).

The concept of metaverse is going to become a game changer in Retail sector of India in context with the shift in business model to formulate the marketing strategies and adapt the change in consumer buying Behaviour.

Indian Retail Sector Overview:

.Indian retail sector is expected to grow upto $2 trillion (Rs.160 Lakh crore) by 2032 from $844 billion in 2022(Naik et al., 2023). The domestic e-commerce market in India is projected to grow at a compound annual growth rate (CAGR) of 27% from 2019 to 2024, reaching US$99 billion (about INR 7 lakh crore). By 2027, it is estimated to reach INR 13,97,800 crore (US$200 billion). This expansion will be driven by the food and fashion/apparel industries, as a result of rising internet and smartphone adoption. India's e-commerce population is predicted to grow from 120 million in 2018 to 220 million by 2025.Artificial Intelligence (AI), Augmented Reality (AR), and other immersive technologies will be major drivers of this.

Retail Industry Revolution:

Retail Industry Revolution in India can be divided into four parts (Hair et al., 2022**)**. Retail 1.0 can be termed as the introduction stage, Retail 2.0 as well as Retail 3.0 explains the growth stage where as Retail 4.0 can be termed as the maturity stage of product life cycle (Kotler, 2022**).**

Retail 1.0	**Retail 2.0**	**Retail 3.0**	**Retail 4.0**
Mechanization (Mid-18th century-Mid-19th century) – Steam Engine – First Cash Register	**Electrification (Early 20th century-Late 20th century) – Mass Production Assembly Line -Electrical Energy -Credit Card**	**Automation (Late 20 th century-Early 21st century) – Use of computer and internet – Online Retail Platform (Amazon, Alibaba, Ebay, Taobao) -Online Payment System -Social Media**	**Digitization (Early 21st century-To date) -Internet of Things (IoT) -Cloud Computing – Big Data Analytical (BDA) Augmented Reality (AR) Artificial Intelligence (AI**

Figure 1: Retail Industry Overview

Key Contributors to Retail 4.0:

Artificial Intelligence (AI):

Human develops machine to perform complex tasks. Artificial Intelligence involves different systems, tools and mechanism to use tremendous patterns and algorithms to take decisions that require human intelligence (Kumar Jha, 2023)**.** The key components of Artificial Intelligence include Data mining, Machine learning and Natural Language processing.

a. Data Mining:

Data mining helps to mine current data (OLTP) and Historical data (OLAP) so that it helps in predicting future results (Kumar & Trakru, 2021)**.**

b. Machine Learning (ML):

Machine learning is a branch of artificial intelligence that involves endowing machines with the capacity to analyze and interpret data, identify novel patterns, and forecast precise results (Daqar & Smoudy, 2019). For this reason, specialized systems are developed, and adding new definitions to the database doesn't require explicit programming. For this reason, specialized systems were developed, and adding new definitions to the database doesn't require explicit programming (Alam et al., 2021). A subset of machine learning known as "deep learning" is made up of enormous neural networks and a vast array of algorithms that can simulate human intellect (Abi et al., n. d.).

Natural Language Processing (NLP)

By analyzing the subtleties of human language, natural language processing (NLP) enables AI systems to extract meaning from a wide range of sources, including product reviews, blog entries, and the billions of Tweets, Facebook posts, and status updates that are posted every day. "NLP" is incredibly helpful in marketing since it allows campaigns to be tailored depending on linguistic context from sources including emails, social media posts, customer care exchanges, and product evaluations (Abi et al., n.d.).The second major field of AI is natural language processing (NLP), which focuses on the natural language interactions between humans and computers. Studies have demonstrated that today's voice and picture searches account for over 30% of e-commerce.

Case:

Amazon's Alexa- voice assistant powered Echo speaker has already been introduced in the market through which the customer can place an order with voice commands. The advantage of Amazon lies in the vast inventory of products that is available (*Digital Transformation in Retail Industry*, 2022)**.**

Pizza Hut- has enabled a chat bot through which the customer can place an order using Twitter accounts or Facebook messenger.

Augmented Reality (AR):

By incorporating virtual processes like graphics, digital images, or feelings as a novel way to engage with the real environment, augmented reality (AR) technology enhances human experiences (Alam et al., 2021). The term "augmented reality" refers to the overlaying of virtual objects—such as texts, videos, or three-dimensional computer models—on top of actual images. Along with advertising, entertainment, education, engineering, medical, and industrial manufacturing, augmented reality can be used in the retail sector (Abi et al., n. d.). Using desktop computers, mobile devices, and other technology, augmented reality (AR) incorporates computer-generated items, such as video overlays and picture images, into the physical world (Bedi et al., 2021). Perceived utility, attitude, competitive pressure, customer pressure, perceived cost, and technological know-how are some of the elements that significantly impact the intention to adopt augmented reality (AR) in retail settings.

The integration of AR and VR with AI, the Metaverse, and other cutting-edge technologies is key to the future of these technologies in retail. AI-powered AR and VR technologies could completely transform customized shopping. AI, for instance, can use a customer's tastes and purchasing patterns to build personalized virtual showrooms or provide real-time product recommendations using augmented reality interfaces. 68% of merchants intend to invest in AI-enhanced AR/VR solutions in order to provide more individualized consumer experiences, according to a Deloitte (2023) survey (Celestin et al., 2025).

Lenskart has used VR capability to showcase how one would look while wearing specs or sunglasses. The customer just needs to click their photo, and then it will show in real-time how the person is looking with specs of his choice (*Digital Transformation in Retail Industry*, 2022)**.** Mobile companies like ***One Plus*** have started launching mobiles using VR capability.

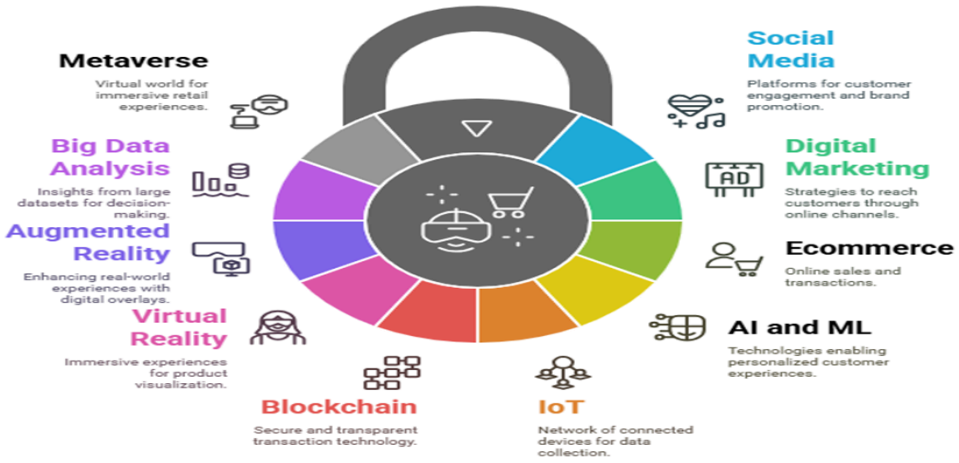


Figure 2: Key Drivers of Retail4.0

Blockchain:

Buyer trust is hard-earned and effectively lost. When an ever-increasing number of exchanges are going on in the Internet ether, figuring out how to legitimize that trust is a gift from heaven additionally. Blockchain offers a guarantee around there. A common record where every single budgetary exchange is recorded – disposing of the blunders that can happen when each party gathering in exchange keeps up its informational index for that exchange – blockchain has a developing after even in its nascence (*Digital Transformation in Retail Industry*, 2022)**.**

Internet Of Things (IOT):

Nearly all consumers have access to internet connectivity on their mobile devices these days. Data is continuously received and stored by organizations for use in strategy planning, marketing plan development, and decision-making. Developments in sensor technology are essential since these tools are used for data gathering, sharing, and processing (Digital Transformation in Retail Industry, 2022). If a business inputs their store's location into a database, virtual assistants like Alexa, Siri, and Google Assistant will notify users of the nearby retailers who offer the product they require (Bedi et al., 2021). Known by another name, Bluetooth radio transmitters, or smart beacons, are devices that can sense when customers are walking by a business and then use that information to notify them via notifications on their phones about exclusive offers, such coupons or discounts.

Metaverse:

Owing to the growing popularity of this technology and the growing interest from the industry, a number of firms have published their predictions for the future of the metaverse, including Microsoft, Nvidia, and Meta. It is simple to see the metaverse as a digital replica of the real world through a relatively simple lens (Zallio & Clarkson, 2022).

A new way for people to socialize and connect is being shaped by the metaverse, a digital immersive world where individuals interact through immersive technologies. This is the combination of Blockchain technology, Internet of Things (IOT), Big Data Analytics (BDA), and virtual reality (VR), augmented reality (AR), and mixed reality (MR).This technology will become increasingly prevalent in our day-to-day lives (Periyasami and Periyasamy, 2022).Using Cutting-Edge Metaverse Technologies, Platforms, and Models to Improve Customer Experience and Analyze Consumer Behavior.

People engage with brands, other people, and digital material. The Metaverse, in contrast to conventional online platforms, provides users with an immersive, three-dimensional experience that makes it difficult to distinguish between the real and virtual worlds. Because users are able to make avatars, explore virtual worlds, interact with others, and take part in a variety of activities, marketers can try out creative approaches there. Businesses hoping to take advantage of the Metaverse's potential must comprehend it as a distinct ecosystem.

Literature Review:

In essence, this technology is filling the gap between a consumer's Ideal Self and Real Self as seen by themselves. Other than psychological elements like attitude, motivation, learning, and personality, this is one of the most important factors influencing each consumer's purchasing behavior. This idea is evolving quickly and has the potential to drastically change the way we live, work, and play. According to research, by 2026, people would spend at least an hour each day (Har et al., 2022) The metaverse serves as a technological melting pot. Additionally, research indicates that there will be a galaxy of metaverses rather than simply one. Artificial intelligence, augmented reality, virtual reality, mixed reality, blockchain, internet of things, cloud computing, and big data analytics will all be included in its own matrix within each metaverse (BDA).

The metaverse is a revolution that is changing how companies and consumers interact, not just a technical breakthrough. This study offers a thorough examination of the ways in which companies might use the metaverse to increase client loyalty.

It is predicted that the metaverse will have an influence of $5 trillion by the year 2030. Understanding how businesses and customers are beginning to interact in this new arena is essential to long-term planning (Gomes et al.,2024).

Businesses may confidently traverse the changing digital landscape by implementing efficient techniques for enhancing customer relationship management, service, engagement, satisfaction, and overall experience (Rane et al.,2023).

The impact of virtual reality (VR) on Gen Z's purchasing experiences in India is examined by Bhargava & Shrivastava (2023). Immersion experiences have been shown to improve engagement and have a favorable impact on purchasing decisions. Young people who are tech-savvy view virtual reality as reliable and enjoyable.

The influence of Augmented Reality (AR) on customer engagement is evaluated by Chatterjee et al. (2022). They attest that AR improves brand perception, contentment, and trust—particularly among younger Indian consumers. The focus of the study is on how online shopping may be redefined through experiential marketing. The Deloitte (2023) report describes how Indian brands are interacting with Gen Z using the metaverse. It draws attention to the need of consumers for immersive, gamified, and personalized experiences, implying that digital-first tactics are necessary for competitiveness in the future.

A multidisciplinary approach to AI and immersive technology is taken by Dwivedi et al. (2021), who observe how these technologies alter customer expectations and behavior. The authors make the case for a strategic linkage of user-centric retail experiences and digital advancements, which is especially pertinent to Gen Z preferences.

Kapoor and associates (2022) explains how AR and VR change the customer journey with a focus on the Indian retail industry. According to the report, the main advantages influencing Gen Z's adoption of immersive technology are personalization, emotional connection, and experiencing value.

The shift to "phygital" (physical + digital) retailing in India is examined in a report published by KPMG India in 2023. In addition to outlining how Gen Z wants smooth interactions across digital and physical platforms, including AR/VR and virtual storefronts, it offers data on consumer movements toward hybrid experiences.

In their empirical study, Lin & Bautista (2022) assess the impact of telepresence and trust on Gen Z's acceptance of virtual retail settings. It demonstrates how important perceived authenticity, immersive design, and interaction are to gaining the trust of digital natives.

The potential economic worth of the metaverse in retail is estimated in a 2023 McKinsey & Company analysis, which also emphasizes how ready Gen Z consumers are for immersive product exploration and gamified brand interactions. In order to stay competitive, it promotes early adoption.

An Indian-focused study by Prasad & Sinha (2023) documents the transition from mobile-first to immersive commerce. In order to satisfy Gen Z's demands for uniqueness and personalization, it emphasizes how merchants are experimenting with virtual avatars, 3D shopping environments, and artificial intelligence.

An Indian-focused study by Prasad & Sinha (2023) documents the transition from mobile-first to immersive commerce. In order to satisfy Gen Z's demands for uniqueness and personalization, it emphasizes how merchants are experimenting with virtual avatars, 3D shopping environments, and artificial intelligence.

Examples of actual Indian brands implementing AR/VR in retail, such as those in the furniture, fashion, and beauty industries, are provided by PwC India (2022). It highlights how Gen Z values immersive storytelling's ability to increase brand loyalty and decrease product returns.

Roy & Roy (2021) look into how AR affects Indian fashion retail. According to the study, Gen Z values AR since it allows for trial experiences and decision-making assistance, which lowers uncertainty while making purchases online. In order to increase participation, the study suggests broader AR integration.

Statistical trends on the deployment of immersive technology in Indian e-commerce are provided by the Statista Research Department (2024). It supports the idea that digital-native customers are pushing metaverse-ready retail experiences and demonstrates a sharp increase in AR/VR adoption among Gen Z.

Gen Z's digital commerce behaviours are mapped by Varma & Narula (2022), who emphasize gamification, personalization, and trust. It demonstrates how immersive technologies meet Gen Z's desire for autonomy and interaction during the purchasing experience.

A thorough study by Verhoef et al. (2021) suggested that digital transformation, in particular immersive technologies, can improve the consumer experience. For younger audiences in particular, it emphasizes the importance of design, data, and digital integration as success elements in future retail ecosystems.

Immersive technologies like virtual reality (VR), augmented reality (AR), and metaverse platforms are greatly influencing the digital transformation of retail in India. Particularly for Gen Z, a group that loves gamification, personalization, and interaction, these tools are transforming consumer engagement (Chatterjee et al., 2022; Kapoor et al., 2022). Immersion experiences improve Gen Z shoppers' trust, emotional connection, and intent to buy, according to studies (Bhargava & Shrivastava, 2023; Varma & Narula, 2022). According to industry sources, Indian merchants are delivering hybrid experiences by utilizing phygital tactics and AR/VR (KPMG India, 2023; PwC India, 2022).According to Deloitte (2023) and McKinsey & Company (2023), the metaverse offers new opportunities for experiential commerce and brand storytelling. All things considered, research shows that immersive technologies are essential for influencing Gen Z's purchasing habits and changing the direction of Indian retail.

Evolution & Technological Disruption in the Indian Retail Sector:

Theme/Topic	**Author/Year**	**Key Findings**	**Relevance to Research**
Indian Retail Market Growth	Statista (2020–2026), Kapuria & Nalawade (2021)	Indian retail market valued at $883B in 2020, projected to reach $1.75T by 2026	Indicates robust market potential for tech-led retail transformation
COVID-19 Impact on Retail & Technology Adoption	Zallio & Clarkson (2022)	Pandemic accelerated immersive tech and altered consumer preferences	Highlights shift in consumer behavior and retailer strategies
Entry of Global and Indian Organized Retailers	Deepak & Meera (2017)	Firms like Wal-Mart, Tesco, Reliance Retail are shaping retail sophistication	Shows structural shift towards modern trade formats in India

Rise of AI in Indian Business	Khatri (2023)	50% of firms to invest more in AI in the next 2 years	Validates AI's increasing integration in retail for consumer engagement
Omnichannel Retail Strategy	Khan (2024)	Need for seamless online-offline integration, operational agility and personalization	Supports development of omnichannel touchpoints in Indian retail
Digital Data & Consumer Psychology	Gkikas & Theodoridis (2024), Kumar Jha	Big Data growth influences consumer understanding—motivation, personality, and self-concept	Key for behavioral modeling in tech-driven retail strategies

Theme/Topic	**Author/Year**	**Key Findings**	**Relevance to Research**
Role of Augmented Reality (AR) in Retail	Alam et al. (2021); Ng & Ramasamy (2018)	AR boosts product interaction; smartphones are key touchpoints	Critical for enhancing customer experience and product visualization
Virtual Reality (VR) for Customer Trials	Digital Transformation (2022)	Used by Lenskart , OnePlus to simulate real-life product usage	Demonstrates practical implementation of VR in Indian retail
AI Components: Data Mining, ML, NLP	Kumar & Trakru; Abi et al. (n.d.)	ML & NLP help predict demand, personalize offers, and enhance search	Establishes foundational AI tools in Retail 4.0 applications
Smart Assistants in E-commerce	Digital Transformation (2022)	Use of Alexa, chatbots for voice and text-based product ordering	Enhances convenience and engagement in AI-powered retail

Blockchain in Retail	Digital Transformation (2022)	Builds trust, ensures data accuracy, transparency in transactions	Crucial for secure payment and supply chain management
Internet of Things (IoT) and Smart Beacons	Bedi et al. (2021); Digital Transformation	Use of sensors, location data to push promotions and connect consumers to stores	Enables contextual and hyper-local retail marketing
The Metaverse and Immersive Commerce	Gomes et al. (2024); Rane et al. (2023); Periyasamy	Metaverse will reshape brand-consumer interaction and psychological engagement	Indicates next-gen retail engagement through digital avatars and personalized worlds
Exploratory Buying Behavior (EBBT) in Metaverse	Kaur et al. (2023)	EIS and EAP are key to understanding tech-based consumer engagement	Applicable to VR/AR and Metaverse-based retail platforms

GenZ's Interaction with immersive technologies:

Author(s) & Year	**Theme/Topic**	**Key Findings**	**Relevance to Theme**
Bhargava & Shrivastava (2023)	VR & Gen Z in Indian retail	VR boosts engagement and purchase intention among Indian Gen Z	Shows VR's impact on Gen Z's online shopping preferences

Chatterjee et al. (2022)	AR in customer engagement	AR enhances satisfaction and trust, especially for young Indian users	Validates AR as a key tool for immersive marketing
Deloitte (2023)	Metaverse strategy for Indian brands	Gen Z expects gamification and personalization in the Metaverse	Highlights strategic need for immersive engagement with Gen Z
Dwivedi et al. (2021)	AI and immersive tech integration	Calls for strategic alignment of tech with user-centric design	Supports use of immersive tech for tailored Gen Z experiences
Kapoor et al. (2022)	Immersive tech in Indian retail	Emotional engagement and experiential value enhance brand connection	Identifies emotional triggers key to Gen Z engagement
KPMG India (2023)	India's shift to phygital retailing	Gen Z prefers seamless digital-physical retail experiences	Supports shift to hybrid immersive models
Lin & Bautista (2022)	Virtual shopping & trust among Gen Z	Interactivity and telepresence increase Gen Z trust	Explains how VR design builds consumer trust
McKinsey & Company (2023)	Metaverse value in retail	Immersive, gamified experiences offer strong value to Gen Z	Advocates early adoption of metaverse in retail
Pantano et al. (2020)	Retail response to digital shift during COVID-19	Pandemic accelerated digital-first retail strategies	Sets foundation for immersive retail transformation

Prasad & Sinha (2023)	Mobile-first to metaverse in India	Virtual avatars and 3D stores appeal to Gen Z's desire for novelty	Shows digital evolution aligning with Gen Z expectations
PwC India (2022)	AR/VR case studies in Indian retail	Reduces returns, boosts loyalty, and enhances storytelling	Real-world examples of immersive tech driving results
Roy & Roy (2021)	AR in fashion retail (India)	AR improves confidence and decision-making for Gen Z	Reinforces importance of trial experiences in immersive commerce
Statista Research Dept. (2024)	AR/VR adoption statistics in India	High usage among Gen Z; strong growth in immersive commerce	Quantitative support for immersive trend among Indian youth
Varma & Narula (2022)	Gen Z's digital buying behavior in India	Gen Z values gamification, trust, personalization	Maps immersive tech preferences to Gen Z motivations
Verhoef et al. (2021)	Customer experience & digital transformation	Emphasizes tech integration and design for enhanced CX	Sets research agenda for immersive CX in retail

Problem Statement/Research Gap:

Even while cutting-edge technologies like chat-bots, AI, AR, and the Metaverse are revolutionizing e-commerce, their cumulative effect on customer behaviour is still unclear. There is a knowledge gap in the Indian context because most of the existing research are focused on developed markets and frequently concentrates on individual instruments. More empirical studies are required on important topics such how these technologies impact loyalty, trust, and buying decisions, particularly among Gen-Z customers in developing regions like India. By investigating how perceived innovativeness and

digital tools affect consumer involvement and purchasing behaviour in India's changing retail ecosystem, this study seeks to close that gap.

Hypotheses:

H1: Use of AI tools positively impact purchase decision of GenZ consumers.

H2: AR tools have positive impact on shopping attitude in E-commerce.

H3: Usage of NLP/ Chabot positively influences the trust among GenZ cohort.

H4: Metaverse have positive impact on purchase intention of GenZ consumers.

H5: Perceived innovativeness increases loyalty among GenZ consumers.

Research Methodology:

Research Design: The research design used in this study is quantitative and descriptive in Nature. The goal is to evaluate the ways in which different digital transformation tools—such as artificial intelligence (AI), augmented reality (AR), chatbots, natural language processing (NLP), and metaverse experiences—affect Gen-Z consumers' purchasing decisions in the contemporary Indian retail landscape, particularly in the apparel industry.

Population and Sampling:

Gen-Z consumers (those between the ages of 18 and 25) living in India make up the study's demographic, with a concentration on Jharkhand respondents. Structured questionnaires disseminated online were utilized to gather data using a non-probability convenience sampling technique. According to the data sheet that is included, the final sample size is N = 220.

Data Collection Instrument:

A structured questionnaire with 5-point Likert scale items—1 being strongly disagree and 5 being strongly agree—was used to gather primary data. The tool included parts that measured brand innovativeness, loyalty, Metaverse purchasing experiences, NLP/chatbots, AR features, usage and perceptions of AI technologies, and basic demographics.

Variables and Measurement:

The study measured the following key constructs:

- AI Tools (independent variable for H1)
- AR Features (independent variable for H2)

- NLP/Chatbots (independent variable for H3)
- Metaverse Interactions (independent variable for H4)
- Brand Innovativeness and Loyalty (variables in correlation for H5)
- Purchase Decision, Shopping Attitude, Trust, and Purchase Intention (dependent variables).

Statistical Techniques:

The data were analysed using the following statistical methods:

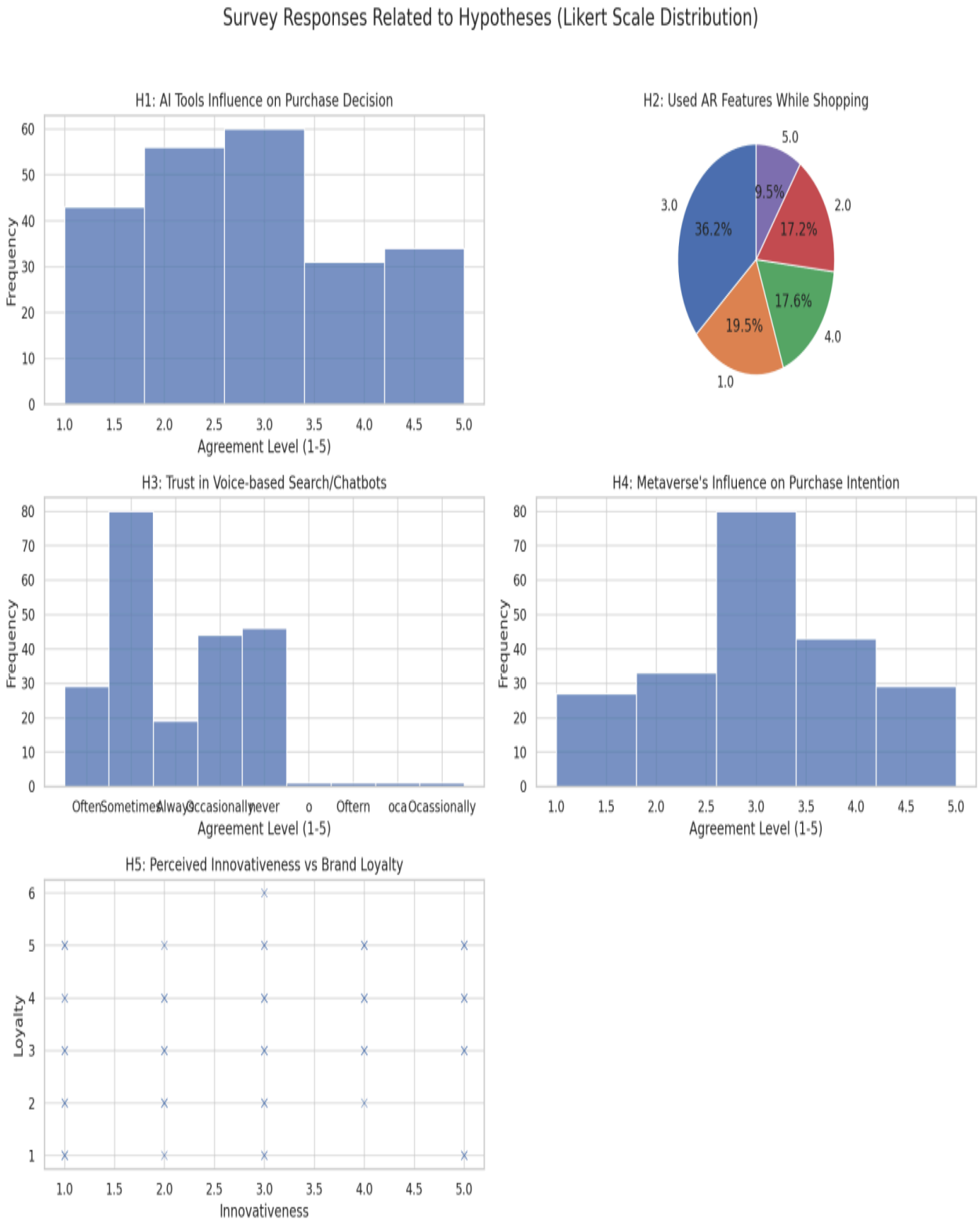
- One-sample t-tests for H1–H4 to determine if the means significantly differ from the neutral value (3.0).
- Pearson Correlation Analysis for H5 to examine the relationship between perceived brand innovativeness and loyalty.
- SPSS and Excel were the primary tools used for data analysis.

Ethical Considerations:

Participation in the survey was voluntary, and informed consent was obtained from all respondents. Anonymity and confidentiality of responses were assured.

Limitations:

- The use of non-probability sampling limits generalizability.
- Self-reported data may be subject to response biases.
- The results reflect Gen-Z consumers' perceptions in a specific geographic region (primarily Jharkhand).


Survey Responses Related to Hypotheses (Likert Scale Distribution)
H1: AI Tools Influence on Purchase Decision
Frequency
Agreement Level (1-5)
H2: Used AR Features While Shopping
5.0
9.5%
2.0
17.2%
3.0
36.2%
17.6%
4.0
19.5%
1.0
H3: Trust in Voice-based Search/Chatbots
Frequency
Agreement Level (1-5)
H4: Metaverse's Influence on Purchase Intention
Frequency
Agreement Level (1-5)
H5: Perceived Innovativeness vs Brand Loyalty
Loyalty
Innovativeness

Hypothesis	Variable Focus	Mean / Correlation	t / r value	p-value	Supported?
H1	AI tools → Purchase Decision	Mean = 2.79	t = –2.445	p = 0.992	Not supported
H2	AR tools → Shopping Attitude	Mean = 3.25	t = 2.894	p = 0.0021	Supported
H3	NLP / Chatbot → Trust	Mean = 2.83	t = –2.22	p = 0.986	Not supported
H4	Metaverse → Purchase Intention	Mean = 3.12	t = 1.422	p = 0.0783	Trend exists
H5	Innovativeness ↔ Loyalty	r = 0.617	—	p ≈ 0.000	Strongly supported

Results Summary

Results and Discussion:

H1: AI Tools and Purchase Decisions

The result of the hypothesis testing indicates that, despite widespread use, respondents' purchasing decisions were not much influenced by AI-generated recommendations; this could be because of scepticism, a lack of personalization, or an overload of AI recommendations.

H2: AR Tools and Shopping Attitude

- There is a strong positive correlation proving that AR experiences (such virtual try-ons) enhance user sentiments.
- This shows that AR boosts confidence in product visualization, which is particularly important for the fashion and cosmetics industries.

H3: NLP / Chatbots and Trust

- Results indicate no significant effect of voice-based chatbots on user trust.
- Possibly, consumers still prefer human interaction or find bots less reliable for detailed queries.

H4: Metaverse and Purchase Intention

- Despite not being statistically significant at $p < 0.05$, the pattern points to a possible impact of immersive surroundings on buying. By improving online buying, brands may profit from this.

H5: Innovativeness and Loyalty

- A significant association ($r = 0.617$, $p < 0.001$) indicates that customers are more inclined to recommend and stick with firms they believe to be creative.
- Brand equity and engagement are increased through technological leadership.

Conclusion of Research:

This study investigates how Generation Z customers' purchasing decisions in India's retail clothing industry are impacted by cutting-edge digital transformation technologies, including artificial intelligence (AI), augmented reality (AR), natural language processing (NLP), and the metaverse. The results show that by facilitating immersive and interactive experiences—which are essential for visual-centric items like clothing—AR dramatically improves purchase attitudes. On the other hand, AI tools and chatbots driven by natural language processing (NLP) now have little impact on trust and purchase choices, suggesting the need for more customization and better user experience. A rising trend among tech-savvy Gen-Z customers is the Metaverse's promising capacity to influence purchasing intention.

Crucially, there is a substantial correlation between consumer loyalty and perceived brand innovativeness, highlighting the strategic importance of technical innovation in retail branding. This emphasizes how crucial it is for Indian retailers to include and use immersive technology in order to satisfy Gen-Z's demands for engagement, customisation, and smooth omnichannel experiences.

Overall, this study closes a significant gap by offering empirical insights into the combined effects of many Retail 4.0 technologies in the Indian context, a market that is rapidly adopting digital technology but has received little attention from academics. For retailers, marketers, and legislators looking to leverage technology innovation to boost expansion, cultivate client loyalty, and maintain competitiveness in the changing retail sector, the report provides insightful advice. To fully realize the potential of these technologies in influencing customer behavior, future studies may examine longer-term impacts and more intricate customisation techniques.

Implications for Retail Marketers of India:

Opportunities:

Metaverse is an inclusive and accessible technology which is going to be the future of Indian Retail sector. This is very much helpful for marketers in understanding the consumer buying behaviour, particularly self-concept (Real and Ideal self), attitude, motivation and other psychological factors influencing their buying behaviour and develop market offering to fulfil their hedonic as well as Utilitarian needs.

Organizations such as H & M, Zara, Adidas, Crate & Barrel, Gucci, and Walmart use the metaverse to leverage shopping technology for competitive advantage. Additionally, Indian businesses like Flipkart, Amazon, Masaba, Tanishq, and Senco Gold & Diamonds. Both e-commerce websites and actual retail locations offer metaverse shopping. E-commerce websites' metaverse platforms are where e-commerce metaverse shopping occurs (Pillai et al., 2024).

Researches indicates clearly that Metaverse is very soon going to be the new normal in the marketing field, especially in retail sectors. Already many marketers like Lenskart, OnePlus, Meta, Microsoft, to name a few have started getting benefitted by this advancement in technology**.** The global marketing environment is changing very fast in terms of adapting to the technological advancement, be it Artificial Intelligence (AI), Augmented reality (AR), Virtual Reality (VR), Mixed Reality (MR), Internet of Things (IOT), Big data Analytics (BDA), Cloud computing and immersive technologies like Metaverse .This is posing a big challenge as well as the opportunities . Indian Retail sector must be very keen on observing the forthcoming challenges in global marketing scenario. The sooner the retail marketers adapt to the technological innovation the better they will grow and diversify. The metaverse has the potential to raise awareness and bring businesses closer to the kind of products and services that real people would like to use (Zallio & Clarkson, 2022)**.**

Challenges:

However there are some major challenges in adopting the latest innovation in technology during retail 4.0. Major challenges include Peoples safety and wellbeing, personalization, Data Privacy and Integrity, Accessibility, Social Equity and Diversity (Zallio & Clarkson, 2022). Marketers will have to understand the threats underlying the adoption of these innovation to ensure their sustainability and diversification under the prevailing circumstances arising out of these technological advancements.

Future Scope of Study:

Retail sector of India is just crack open to adaptation of these latest technologies like AR, VR and Metaverse. In the wake of the vast geographical as well as psychological landscape of Consumer buying behaviour it's becoming very challenging for Indian Players to survive .Big Bazar, Pantaloons are some of the examples. These new technologies can be adapted in all most all segments/product categories like Jewellery, Apparel, shoes, cosmetics, and other daily use items. Very few research work has been done in these areas to open up the gateway to growth and diversification of Indian Retail sector.

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