



Review

Unpacking Dimensions of Metaverse Platforms to Enhance Immersive Experience and Brand Engagement Among Consumers

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Abstract

With the growing integration of AR/VR/Metaverse technologies across luxury brands, advertising has shifted to providing consumers with a personalised experience in which they can engage with brands via digital avatars. Given the considerable success of Metaverse advertising, it is apparent that organisations need to reinvent their advertising strategies to enhance consumer experience and brand engagement over digital platforms. However, this reinvention would require organisations to develop an advertising strategy that creates a coherent brand experience for consumers and provides them with an immersive brand experience on Metaverse platforms. As a result, this study undertakes a bibliometric approach to provide a comprehensive understanding of how integrating Metaverse platforms with advertising strategies can enhance brand engagement among consumers. More precisely, a keyword search strategy is formulated, and a multi-database search is performed across key databases, including Scopus, EBSCOhost, and ProQuest. In doing so, results from Scopus databases are visualised through network and overlay visualisation maps to understand how key themes/knowledge structures are associated with Metaverse advertising and brand engagement. Besides this, the study also showcases the key theoretical perspectives (i.e., psychological perspectives, value-based perspectives, technology/innovation perspectives, and social interaction perspectives) across these studies to understand how brands have well-infused Metaverse advertising to enhance brand engagement among consumers. Lastly, the study also provides a deeper understanding of the key challenges that are associated with the widespread implementation of Metaverse advertising.

Keywords: metaverse advertising; virtual worlds; metaverse; brand engagement; brand experience; brand value co-creation



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1. Introduction

With the rapid integration of technology across organisations, it is undeniable that technological tools not only allow a business to gain a competitive advantage but also allow it to achieve sustainable growth [1,2]. Advanced technologies such as artificial intelligence (AI), blockchain technology, Internet of Things (IOT), Augmented reality (AR), Virtual reality (VR) and Extended reality (ER) have all been proven to be useful for businesses to enhance consumer engagement over digital platforms [3,4]. However, recent studies argue that the Metaverse is one of the revolutionary technologies that serves as an integrated digital ecosystem with a combined essence of AR, VR, AI and Internet of Things (IOT) platforms [5,6]. Although the Metaverse is often debated as being in a nascent stage, its

widespread implementation can be visualised across some of the high-tech firms such as Microsoft, Nike, Google, Facebook, Apple and many others [7–10]. With the rising consumer interest and engagement on these platforms, it is evident that global brands are providing immersive experiences in virtual worlds (i.e., using personalised avatars) to co-create and interact in a gamified environment [11,12]. From hosting immersive product launches, companies have reinvented their advertising approaches by utilising digital avatars on Metaverse platforms to enhance brand engagement with consumers on these platforms [8,13]. Traditional advertising approaches (i.e., Print Media, Posters, Radio and TV Advertisements) were focused on a push strategy where brand advertisements were not personalised and lacked two-way interaction with consumers [14,15]. However, modern approaches to advertising showcase the integration of AR, VR and Metaverse technologies, which are being adopted to engage consumers with brands through the personalisation of digital avatars on virtual platforms [16–19]. In simpler terms, Metaverse platforms serve as a shared 3D space whereby users/consumers can either opt to access these platforms via AR/VR/XR devices or can access Metaverse platforms through various devices (i.e., Computers/Smartphones) on platforms such as Roblox, Fortnite Creative, and Decentraland [20,21]. Additionally, it is also believed that immersive experiences for consumers across Metaverse platforms are much better when accessed via AR-/VR-compatible headsets/devices.

Recent reports contend that the Metaverse market is expected to reach US\$103.6bn in 2025 globally and is anticipated to grow annually at 37.43% (i.e., CAGR 2025–30), with a market volume of US\$507.8bn by the year 2030 [22]. Besides this, industry reports from McKinsey contend that the value creation of the Metaverse could reach up to US\$5 trillion by the year 2030 [23]. More precisely, these reports argue that the Metaverse would create a drastic change in the value chain for fashion and luxury brands, whereby they will have zero production costs or supply chain issues for the maintenance of virtual assets [23]. Based on these promising signs of the Metaverse, several luxury brands have embraced this opportunity by allowing consumers to experience virtual clothing via the personalisation of avatars [24]. These unique experiences for consumers on Metaverse platforms gained immense popularity as they allowed consumers to virtually engage with a certain product and reflect their digital identities (i.e., self-expression, creativity, status) [24]. On these notions, Hsu and Chen state that the personalisation of digital avatars allows consumers to associate them with a feeling of pre-ownership of a particular luxury product. Besides this, the integration of gamified-based advertising strategies is also linked with brand loyalty, whereby consumers are triggered with positive emotions [25–27]. Several studies have also stated that the co-creation of content in virtual worlds is more engaging for consumers and builds stronger brand engagement across various advertising platforms [24–28]. As a result, this sets the stage for a deeper investigation into how integrating Metaverse platforms with advertising strategies can enhance brand engagement among consumers.

Based on the principle of duality, consumers can interact in virtual worlds via digital avatars, whereby they can co-create and have personalised experiences of various service offerings [29,30]. Existing studies on the Metaverse have identified a wide range of applications across entertainment, gaming, retail, tourism, banking, manufacturing, real estate, education, cultural heritage and healthcare systems [24,26,27,31]. However, only a few studies have looked at how integrating key theoretical underpinnings and applying them to Metaverse advertising can enhance brand engagement among consumers on Metaverse platforms. As a result, the primary aims of this study remain: (a) to understand how research studies have evolved with the integration of Metaverse advertising and consumer engagement over various platforms; (b) discerning what the underlying themes and their relationships in a knowledge structure (i.e., thematic clusters) associated with Metaverse ad-

vertising and building brand engagement are; (c) to determine the key theoretical mappings and their integration to Metaverse advertising.

To address the aforementioned gaps, the current study employs a bibliometric approach to provide a comprehensive understanding of how integrating Metaverse platforms with advertising strategies can enhance brand engagement among consumers. In detail, Section 2 showcases the methodology section, whereby a keyword search strategy is formulated, and a multi-database search is conducted. In doing so, Section 3 showcases the results (i.e., cluster analysis, network visualisation and overlay visualisation) gathered from the VOS viewer, which are linked to the integration of gamified-based advertising to build brand engagement among consumers. Next, Section 4 highlights the key theoretical mapping done across these studies to understand how brands have well-infused Metaverse advertising to enhance brand engagement among consumers. Lastly, Section 5 provides a brief overview of the challenges and opportunities associated with Metaverse advertising for building brand engagement, followed by a conclusion, limitations and future research directions in Section 6.

2. Methodology

The study employs a bibliometric approach to examine key patterns, knowledge structures, and thematic linkages among theoretical notions related to Metaverse advertising, aiming to enhance brand engagement among consumers. Moreover, several studies suggest that utilising bibliometric methodology along with VOS viewer is one of the robust methods that allow us to visualise the trends, publications that have evolved over a specific period of time [32,33]. To meet the above-mentioned objectives, a keyword search was executed on 1 October 2025 across various major databases (i.e., 2020-25), including Scopus, ProQuest, and EBSCOhost, to identify studies that illuminate theoretical notions that are associated with the implementation of Metaverse-based advertising to enhance brand engagement among consumers (i.e., see Table 1 below). Moreover, the inclusion criteria consist of only peer-reviewed publications (i.e., journal articles/book chapters/conference papers) that were published in the English language within the 2020-25 period. Additionally, these inclusion criteria are designed to capture the emerging trends and technological linkages that are related to brand engagement on Metaverse platforms. Additionally, studies retrieved only from the Scopus database search were considered for deriving bibliometric interpretations (i.e., network, overlay and density visualisation) due to its comprehensive coverage and compatibility with VOSviewer (Version 1.6.19). Lastly, the exclusion criteria excluded any studies related to brand engagement on Metaverse platforms that were either research letters, guest editorials or notes. Hence, the results exported from the Scopus database, which meet the inclusion criteria (i.e., 1537 studies), are utilised for analysis that are being conducted with the help of VOS viewer.

Table 1. Keyword and search results from designated databases.

Keywords	Scopus	ProQuest	EBSCOhost
("Metaverse" OR "Virtual reality" OR "Augmented reality" OR "Mixed reality" OR "Virtual Worlds") AND (Immersive marketing OR "virtual store *" OR "virtual retail" OR "virtual event" OR "virtual showroom" OR "co-creation") AND ("Brand engagement" OR "Brand involvement" OR "Customer brand engagement" OR "consumer engagement" OR "customer engagement" OR "brand relationship") AND PUBYEAR > 2019 AND PUBYEAR < 2026 AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SUBJAREA, "BUSI"))	1548	19	48

Based on the search results gathered from the Scopus database, it can be observed that the number of studies related to Metaverse and consumer engagement on these platforms has increased over the recent years (i.e., 2023–2025) (i.e., see Figure 1 below). More precisely, these trends in an increasing number of studies depict how brands can integrate a Metaverse approach into their advertising strategies to lure consumers. The increase in studies on engagement with consumers on Metaverse platforms can be attributed to the adoption of gamified advertising by well-known brands across fashion, luxury, retail, sports, tourism, beverage and automobile sectors [11,34–36]. In detail, luxury and beauty brands Gucci (Gucci Town) [37], NARS (i.e., “Colour Quest” on Roblox) [38], Nike (RTFKT) [7], and Adidas (Bored Ape Yacht Club) [4] have already taken a step into the gamified approach of advertising through Metaverse platforms. Similarly, retail brands such as Walmart (Walmart Land) [39], IKEA (The Co-Worker Game) [40] and H&M (Looptopia) [41], and Beverage brands such as Coca-Cola [42], Heineken [42], and Absolut Vodka [43] have also sought to promote their brands over Metaverse platforms. Besides this, the trends have also seen increased attention within the automobile sectors, where notable brands such as Hyundai [44], BMW [44], KIA [45], Fiat [45] and Volvo [46] have integrated their advertising strategies through Metaverse platforms to enhance brand engagement and build immersive experiences within consumers.

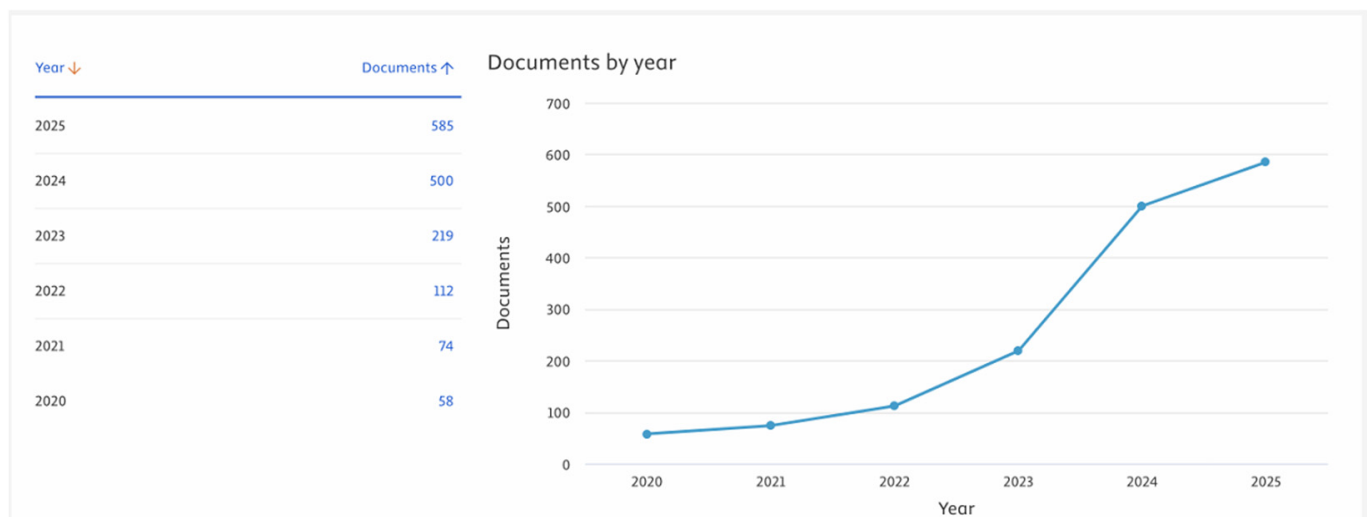


Figure 1. Documents per year-Integration of advertising through metaverse platforms to enhance brand engagement. Source—Scopus.

Based on the search results, it can be stated that studies related to the Metaverse advertising to enhance brand engagement were published in the top 5 sources, such as *Journal of Retailing and Consumer Services*, *Journal of Business Research*, *International Journal of Contemporary Hospitality Management*, *Psychology & Marketing*, *International journal of consumer studies* and *Journal of Theoretical and applied electronic commerce research*, respectively (i.e., see Figure 2 below).

Similarly, it can be stated that studies related to the integration of advertising through Metaverse platforms have been debated mainly in India, China, the United Kingdom, the United States, Malaysia and South Korea (i.e., 2020–2025), respectively (i.e., see Figure 3 below).

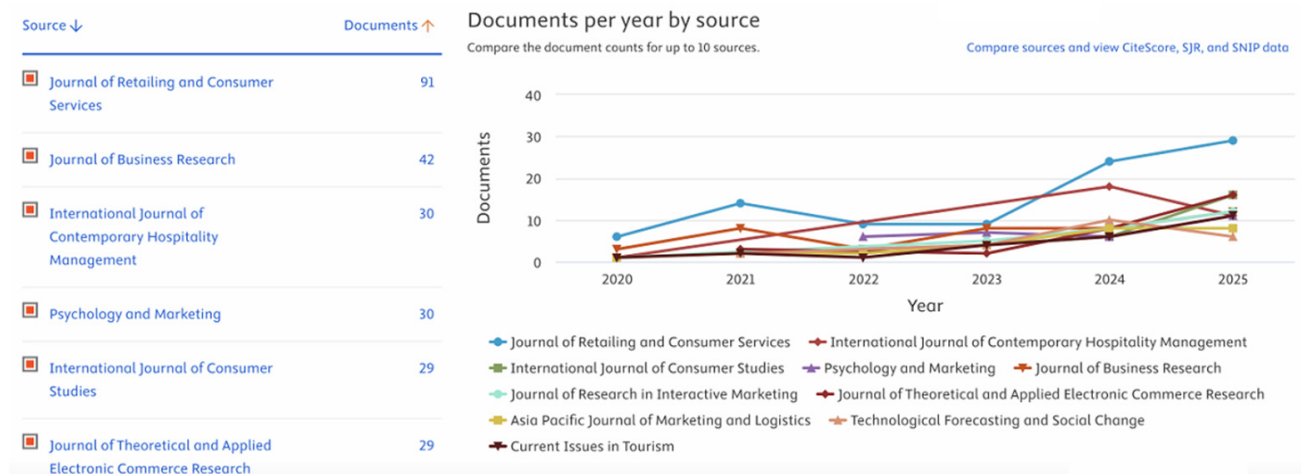


Figure 2. Documents per year by source on Metaverse advertising to enhance brand engagement. Source—Scopus.

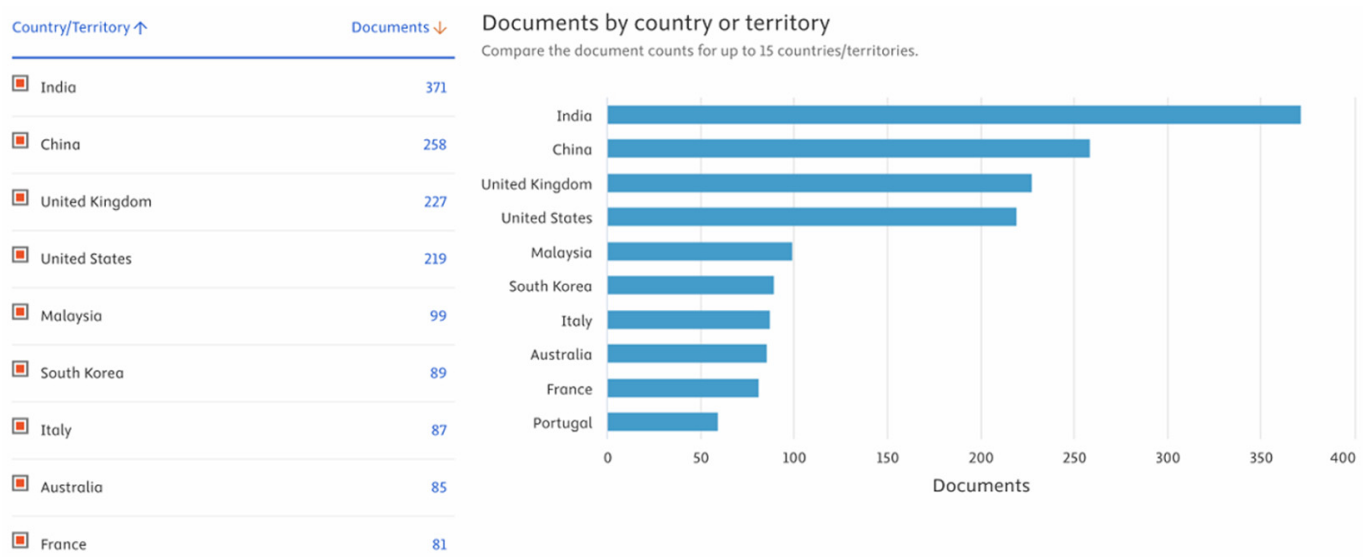


Figure 3. Documents per country on Metaverse advertising and brand engagement. Source—Scopus.

3. Results Gathered from Bibliometric Analysis

To gather detailed insights, results that meet the inclusion criteria are exported from the Scopus database (i.e., 1537 studies) and then analysed with the help of VOS viewer to showcase the key thematic clusters and overlay visualisation related to enhancing brand engagement through Metaverse advertisements [47,48]. VOSviewer is one of the user-friendly pieces of software that is argued to have the capacity to analyse large datasets effectively and derive bibliometric interpretation via Network, Overlay and Density visualisation representations [48,49]. As a result, a co-occurrence analysis was conducted using VOS viewer, which is in accordance with the methodology stated by Gandasari et al. [50] and Hudha, Hamidah, Permanasari, Abdullah, Rachman and Matsumoto [48].

More precisely, the co-occurrence analysis is conducted within VOS viewer by selecting the author's index keywords, and a full-counting approach is undertaken where a minimum occurrence of 15 is set to gather relevant re-occurring themes that showcase how Metaverse/AR/VR provides immersive platforms for consumers to engage with brands across product and service contexts [49,50]. Later, the synonyms are identified, and a thesaurus file is created and integrated into VOSviewer for generating network visualisation

and overlay visualisation maps. Based on the above thresholds and counting method, 38 constructs were retained for analysis, which was conducted in VOSviewer. Later, the results are interpreted through network visualisation maps and cluster analysis, which showcase five key clusters (i.e., Red, Blue, Green and Yellow) and their interlinkages with the AR/VR/Metaverse technologies to enhance brand engagement across multiple domains of business (Marketing, Tourism, Retail, etc.) (see Figure 4). Each cluster represents the themes or knowledge structure in which studies within a specific theme are mapped and closely connected to one another in the Scopus database.

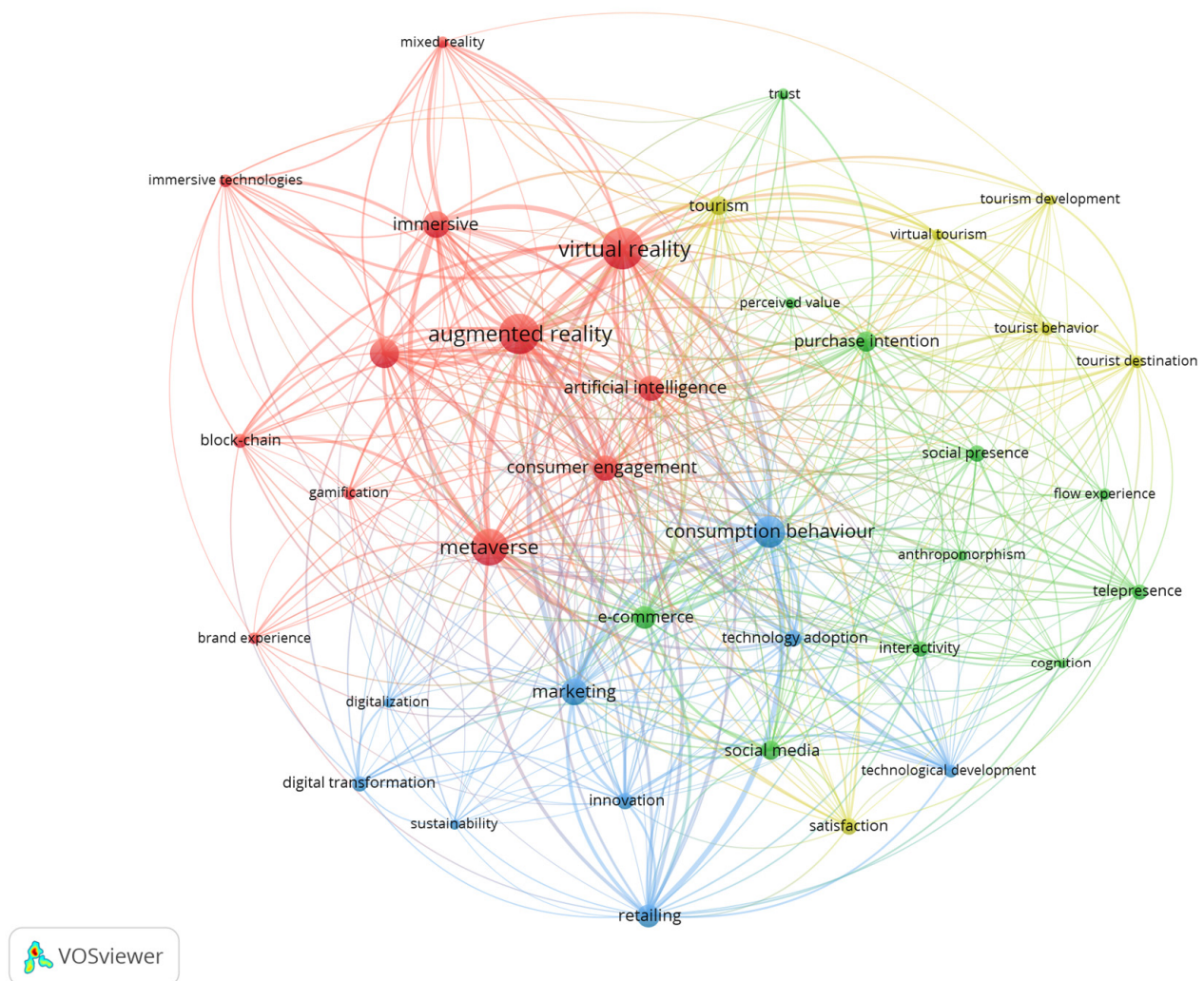


Figure 4. Network visualisation.

Findings from the VOSviewer indicate that Metaverse systems are seen to be well-linked to the fields of marketing, advertising and tourism (see Figure 4). Besides this, it also showcases linkages to studies that showcase the role of gamification strategies on purchase intention, perceived value and consumer experiences in various sectors of the economy. To begin with, the Red cluster showcases the studies that are related to how the integration of technological foundations such as AI and Blockchain across Metaverse/AR/VR and Mixed reality platforms enables a consumer to have a personalised and immersive experience. Besides this, these studies also showcase how the key literature is linked to the implementation of gamification techniques across Metaverse/AR/VR and Mixed reality platforms to enhance brand engagement levels across these platforms. Moreover, the Green clusters depict how the psychological aspects such as anthropomorphism, social presence, flow experience, perceived value and interactivity can enhance engagement and trust levels of a

consumer, leading to a higher purchase intention over Metaverse platforms. Additionally, these studies are also linked with how individuals build emotional connectivity with brand advertisements through virtual try-ons over Metaverse platforms. In addition, the Blue clusters showcase the key literature that is linked to how innovation, technological adoption of Metaverse across marketing and retailing sectors can lead towards a higher consumption, engagement levels among consumers and provide them with sustainable brand experiences. Lastly, the Yellow clusters showcase the key literature clusters on how the integration of Metaverse not only provides immersive experiences in tourism experiences for consumers but also influences their satisfaction levels.

Besides this, the overlay visualisation shows how trends in studies have shifted from the integration of AR/VR into retail/tourism sectors to the role of Metaverse advertising in enhancing user-experience/brand engagement among consumers (see Figure 5). Moreover, the colour (i.e., Purple, Blue, Green, Yellow) represents the clusters and the average no. of studies that are published in the Scopus database with the associated keyword.

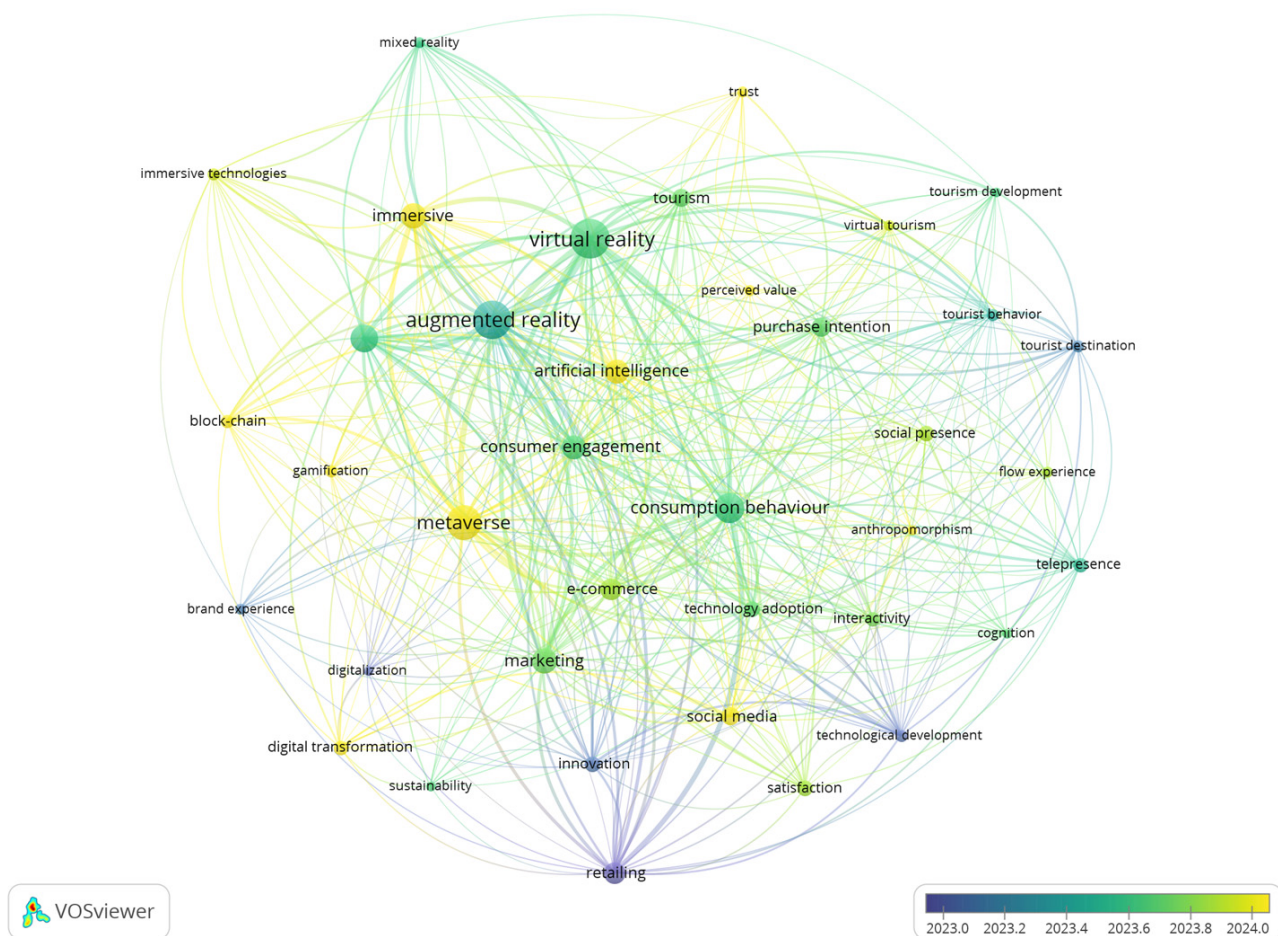


Figure 5. Overlay visualisation.

From the overlay visualisation, it can be argued that clusters in Purple/Blue (i.e., Early till 2023) colour represent mature/established themes which are related to how AR/VR have been widely utilised in Tourism and Retail industries to enhance consumer experience. Similarly, the clusters in Green represent the trends in the literature (i.e., 2023–2024), which state how integrating technologies (i.e., AR/VR) with gamification techniques can provide interactivity/telepresence/flow experience, enhance user experience on social platforms, subsequently leading to a higher purchase intention of a consumer. Lastly, the Yellow clusters showcase how emerging themes, such as gamification (i.e., 2024 onwards) and the

integration of blockchain-enabled security measures, are shaping the future trajectory of Metaverse advertising and providing sustainable strategies to enhance immersive experience and brand engagement for consumers. Besides this, recent studies on Metaverse platforms are also seen to be linked to the notion of Metaverses, which integrates the holistic approach of multiple immersive platforms (i.e., Roblox, Decentraland, Zepeto, Fortnite) and blockchain technologies to ensure the platforms are ethically safe for brand engagement among consumers [34,51]. Moreover, it can be stated that AR/VR have been well-implemented in certain industries (i.e., retail, tourism). However, growing studies also debate how Metaverse platforms can gain wider adoption among consumers and be utilised as sustainable advertising. Based on the key literature gathered from the Scopus database, the upcoming sub-section showcases the integration of key theoretical mapping that is done to enhance brand engagement through Metaverse advertisement. Lastly, to strengthen the theoretical perspectives and interpretation, studies that contribute towards the theoretical grounding of brand engagement on Metaverse platforms and are highly cited are included.

4. Theoretical Integration of Metaverse Advertising to Enhance Brand Engagement

Digital advertising is one of the indispensable ways of publicity for most businesses in the current scenario [52–54]. With the growing pace of time, digital advertising has reshaped its dimensions in multifaceted ways [52,55]. Currently, we live in a millennium where content and connections are two crucial aspects of communications that allow businesses to find the targeted audience, which further leads towards profitability and sustainability [56]. However, the recent introduction of artificial intelligence in digital advertising has fused new ways of personalised advertising (i.e., Metaverse advertising), which is seen to bias the attitudes of a consumer when making decisions [7,10,11,16,57]. Metaverse is one of the most debated topics, as it provides immersive experiences for users and allows them to interact within the virtual worlds [57]. To begin with, the term “metaverse” is a fusion of the prefix “meta,” which means “beyond,” and the word “universe,” which refers to a parallel or virtual environment associated with the physical world [6,20,58,59]. However, from a technological standpoint, Metaverse is a 3D virtual space that combines both technologies, such as AR (i.e., augmented reality) and VR (i.e., virtual reality) [5,60,61]. Moreover, studies argue that various platforms (i.e., Second Life, Sandbox, and Decentraland) provide consumers with access to the Metaverse systems, where they can create realistic avatars and engage with various brands in an immersive manner [5,20,60].

With the growing number of consumers on virtual platforms, Metaverse advertising has allowed brands to develop personalised ads that meet customer needs and their buying intentions [24,42]. Moreover, recent studies suggest that the adoption of realistic avatars with anthropomorphic characteristics on Metaverse platforms can lead towards higher brand engagement and purchase intentions of consumers [34,62]. These personalised advertisements (i.e., Metaverse advertising) are primarily used to elicit emotions and induce cognitive appraisal among consumers so that they can have immersive experiences and have enhanced brand engagement over these platforms [7,63]. Due to this flow and immersive experience on Metaverse platforms (i.e., virtual events, self-expression, creativity, co-creation), consumers are usually seen to have a triggered effect of positive emotions that enhances brand engagement over these platforms [64]. On these notions, several studies have provided theoretical frameworks that showcase how Metaverse advertising is linked to brand engagement and enhanced consumer experience. However, a comprehensive theoretical overview on how Metaverse advertising can not only enhance brand engagement but also provide consumers with an immersive brand experience remains fragmented in the

academic literature. Hence, based on the studies gathered through the search strategy and relevant literature, this study provides a brief review of how various theoretical frameworks and their relevant constructs influence brand engagement among consumers and elicit positive emotions, thereby enhancing the consumer experience. By integrating these key theoretical notions, the study provides a comprehensive understanding of the constructs and variables linked to brand engagement and an enhanced consumer experience.

More precisely, the theoretical perspectives related to Metaverse platforms and consumer engagement are categorised into (a) psychological perspectives, (b) value-based perspectives, (c) technology/innovation perspectives, and (d) social interaction perspectives. In doing so, the psychological identity perspectives showcase how consumers are deeply involved and engaged with Metaverse platforms by relating their self-image/identity via digital avatars [12,64,65] (i.e., see Table 2 below). Similarly, the value-based perspectives showcase how not only utilitarian, but also hedonic motivations allow consumers to fulfil their intrinsic motivations when engaging with brands on Metaverse platforms [28,63,66–69]. Likewise, the technological and innovation perspectives highlight the reasoning behind consumers' adoption of Metaverse technologies and how innovative technologies drive higher consumer engagement [7,70,71]. Lastly, the social interaction perspectives showcase how social cohesion and community-belonging aspects drive higher brand engagement on Metaverse platforms [12,72–74].

Table 2. Theoretical integration of Metaverse advertising to enhance brand engagement.

Theoretical Framework	Theoretical Explanation	Key Factors Investigated	Linkages with Brand Engagement/User Experience	Relevant Studies
Psychological Identity Perspectives of Brand Engagement Through Metaverse Platforms				
Elaboration Likelihood Theory	The elaboration likelihood theory states that consumers can engage with brand experiences via the Central and Peripheral routes of persuasion, which shape their purchase intentions and attitudes towards a brand.	Central route (information & accuracy). Peripheral route (Vividness), Actual self-congruence, Idea Self-congruence, Metaverse experience, Buying intention, Continuing intention.	Metaverse brand engagement/experience via central and peripheral routes of persuasion and its influence on buying and continuing consumer attention.	Balakrishnan, Das, Alalwan, Raman and Dwivedi [65]
Self-Concept Theory	Based on the self-concept theory, a user tends to represent themselves in two ways (i.e., actual self and ideal self) across Metaverse platforms via Avatars (i.e., Similarity & Wishful identification)	Similarity identification, Wishful identification, Self-presence, Emotional closeness, Perceived appropriateness, Purchase intention.	Consumer interaction on Metaverse platforms via avatar customisation to showcase their digital identities, which develops emotional closeness among consumers and enriches their brand experiences.	Kim, Oh, Choi and Jung [64], Javornik et al. [75]
Luxury Consumption Theory	The luxury consumption theory states the reasoning behind a consumer's purchase intention and ownership of luxury brands.	Brand warmth, brand competence, cognitive engagement, affective engagement, behavioural engagement, consumer engagement, social value, and luxury brand attachment.	Consumer engagement with Luxury brands on Immersive Platforms and its influence on Brand attachment.	Arya, Sethi and Hollebeek [12]

Table 2. Cont.

Theoretical Framework	Theoretical Explanation	Key Factors Investigated	Linkages with Brand Engagement/User Experience	Relevant Studies
Value-Based Perspectives of Brand Engagement Through Metaverse Platforms				
User & Gratification Theory	The theory states how individuals visualise themselves as per social and psychological needs and then gauge differently on Metaverse platforms based on their preferred choice.	Usability (Ease of Navigation, Comfort level, Intuitive interface, Accessibility features), Interactivity (Meaningful Interactions, Sense of Presence, Level of Control, Real-time Interaction), Personalisation (Avatar customisation, Sense of ownership, Content customisation)	Metaverse Experiences & Brand Engagement	Kumar et al. [76]
Self-Determination Theory	Self-determination theory explains how intrinsic motivation and psychological needs (i.e., autonomy, competence and relatedness) drive higher engagement among consumers.	Perceived immersion, Brand self-connection and Brand love	Perceived immersion (i.e., Metaverse platforms) positively enhances brand self-connection and brand love.	Ahmad, Yanping, Abbasi, Khan, Waheed and Qayyum [28], Boccacini, Patrizi, Vernuccio and Pastore [63], Kaman and Deshmukh [66], Bai and Liu [67], Aslam et al. [77], Naveen Kumar et al. [78]
Hedonic Motivation Model & Consumption Value Theory	Drawn from a psychological perspective, the Hedonic Motivation Model showcases how curiosity, joy and perceived usefulness can create a flow experience and encourage consumers to purchase luxury products through Metaverse platforms.	Joy, Curiosity, Perceived usefulness, Flow Experience, Functional, Social Consumption, Willingness to pay.	Unlike Utilitarian Motives, consumers seek hedonic motivations that drive them towards an enriched user experience and lead towards their willingness to pay on Metaverse platforms.	Ramanathan, Pramod and Patil [68]
Value Attitude Behaviour Theory	The theory states how consumers understand luxury NFTs and engage with brands on Metaverse platforms. In turn, these perceived values are supposed to influence not only their attitudes but also their behavioural outcomes.	Authentic, Scarcity, functional value, hedonic value, social value, Epistemic value, Brand attitude, Resistance to negative information, Brand purchase intention.	Use of non-fungible tokens (NFTs) in Metaverse platforms to influence consumer attitudes, behaviours and brand purchase intentions.	Cho and Cho [69]
Technology/Innovation Perspectives Related to Metaverse Platforms & Consumer Engagement				
Stimulus Organism Response framework (SOR)	The SOR framework states how external/environmental stimuli, along with psychological mechanisms and behavioural factors, enhance consumer engagement.	Entertainment, trendiness, intimacy, trendiness, interactivity, Brand satisfaction, brand hedonic value, brand utilitarian value, word of mouth, purchase intention, brand loyalty, brand engagement.	Studies showcase how various aspects of marketing stimuli influence organism factors, which leads to brand loyalty and higher purchase intention.	Al-Adwan, Yaseen, Alkhawaldi, Jafar, Fauzi and Abdullah [7], Ghali, Rather and Khan [70], Payal et al. [79], Muhammad Sohail Jafar et al. [80], Roh et al. [81]
Unified Theory of Acceptance & Use of Technology 2 (UTAUT2) Framework	Building upon the key concepts of UTAUT (i.e., performance expectancy, effort expectancy, social influence and facilitating conditions), the theory also captures the role of hedonic motivation, price value, and habit in understanding the key drivers behind Metaverse platforms.	Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit.	Integration of the UTAUT2 framework with demographic variables to understand intentions to use Metaverse platforms and derive consumer engagement across these platforms.	Sritong, Sawangproh and Teangsompong [71], Wang et al. [82]

Table 2. Cont.

Theoretical Framework	Theoretical Explanation	Key Factors Investigated	Linkages with Brand Engagement/User Experience	Relevant Studies
Technology/Innovation Perspectives Related to Metaverse Platforms & Consumer Engagement				
Media Richness Theory	Based on media richness theory, consumers can interact across media depending on the ability to provide a sense of realness and feedback in these platforms.	Consumer engagement, consumer satisfaction, consumer experience, social presence, consumer orientation, communication and visualisation.	Sense of realness, along with immersion, enhances Brand Engagement & experience levels among consumers.	Bakeshloo, Agnihotri and Mohammadzadeh [3], Kim et al. [83], Zhong et al. [84]
Token Adoption & Valuation Theory	To build a sustainable economic model, this theory states how economic transactions in a decentralised metaverse economy can create value for virtual goods across digital platforms.	Exchange markets, economic actors, assets, scarce resources, Metaverse government	The development of a sustainable economic model through the Metaverse government, whereby the interplay between economic actors and the exchange rate allows for the design of a Metaverse economy.	Hanneke et al. [85]
Innovation Diffusion & Flow Theory	The innovation diffusion theory explains how consumers adopt a certain innovative platform (Metaverse platform) for consumer engagement by integrating with the characteristics of innovation. Besides this, the flow experience states that consumers are fully engaged with focused attention, intrinsic enjoyment and higher engagement across virtual platforms with reduced distractions.	Characteristics of Innovation (Relative advantage, compatibility, complexity), Self-control, Technostress, flow, impulsive buying and compulsive buying	Integration of perceived characteristics of innovation to Metaverse platforms and their influences on how consumers experience via flow, which in turn drives impulsive and compulsive purchases.	Kumar et al. [86], Xu et al. [87], Zhan et al. [88]
Social Interaction Perspectives Related to Metaverse Platforms & Consumer Engagement				
Social Identity Theory (SIT)	The social identity theory states that consumers are more likely to link themselves to groups they favour the most (In-group discrimination) and would distance themselves from the ones they dislike (Out-group discrimination).	Social presence dimension (autonomy, brand community, haptic effect, immersion, interactivity, personalisation). Customer brand engagement, purchase intention, User-avatar identification, User loyalty	Social presence dimensions not only influence a consumer's level of brand engagement but also impact their purchase intentions across Metaverse platforms.	Teng, Dennis and Dennis [72], Agnihotri, Chaturvedi, Swarup, Mathur, Tripathi and Singh [73], Attri, Korayim, Alshaghda, Galgotia and Walsh [74]
Social Presence Theory	The social presence theory states that individuals can develop interaction and connect with each other in social environments.	Gamification in Metaverse, Entertainment, Interaction, Trendiness, Intimacy, Novelty, Brand Love, Brand Engagement in Metaverse Platforms	Users are able to immerse themselves in Metaverse platforms and develop brand value meaningfully.	Arya, Sambyal, Sharma and Dwivedi [4], Arya, Sethi and Hollebeek [12], Oberoi et al. [89]
Game Theory & Prospect Theory	Based on the combined perspective of Game theory & prospect theory, it is stated how an individual tends to assess their decision in making product purchases through NFT Luxury brand fashion products.	Metaverse Appearance importance, social values of NFTs, Economic values of NFTs, Luxury brand NFT Authenticity, Luxury brand NFT Scarcity, Anticipated Gains/Losses in Buying/Not Buying Luxury NFTs, Luxury brand purchase intentions in Reality/Metaverse, Self-image congruence in Metaverse	Psychological estimations are done by a consumer to purchase a luxury brand NFT on Metaverse platforms based on associated gains/losses and its convergence with their self-image on reality/Metaverse platforms.	Kim, Oh, Choi and Jung [64], Sung et al. [90]

5. Key Opportunities and Challenges Associated with Metaverse Advertising

Metaverse advertising is one of the transformative ideas that has the potential to empower organisations to transform their business model and provide consumers with immersive experiences by minimising operational expenses. Besides this, recent studies showcase that integration of NFTs in Metaverse advertising platforms can not only open revenue streams for businesses but also engage consumers through loyalty/rewards programmes. Additionally, it could be understood that gaining a competitive advantage for organisations could be easier, with a higher scope for collaborations and reduced operational costs.

However, despite the several benefits associated with Metaverse advertising, several studies have showcased that there are several concerns and practical challenges in its widespread implementation. Moreover, to ensure that Metaverse platforms are secure and sustainable for organisations, it is of higher importance to address the issues related to a lack of data privacy, content moderation and cyberbullying, as well as phishing attacks on these platforms. Additionally, it could also be understood that integration of Metaverse-based advertising could lead towards the creation of a digital divide among consumers. Hence, it would be worthwhile to consider how Metaverse-based advertising could be well-infused with various regulatory frameworks, data protection policies, and made accessible to everyone. Although Metaverse advertising has been implemented across major luxury brands, there is a pressing need for companies to upskill their employees to equip themselves with the technical competencies and expertise required for designing advertising strategies over Metaverse platforms. Besides this, a snapshot of some of these key challenges is showcased in Table 3 below.

Table 3. Challenges associated with Metaverse advertising.

Challenges Associated with Metaverse Advertising	Related Studies
Metaverse Design & Architecture—Lack of Governance & Standardised Regulations	[91–93]
Issues with Interoperability Across Cross-Platforms	[91,94]
Regulatory Concerns—Transparency on Ownerships of Virtual Assets and Payment Through NFTs	[42,77,85,95,96]
Lack of Data Privacy and Content Moderation over Metaverse Platforms	[97–99]
Avatar Authentication & Identity Theft	[95,100,101]
Risks of Digital Fatigue	[102,103]
User Safety—Cyberbullying, Harassment & Phishing Attacks, Ethics of Personalisation	[93,101,104]
Issues with Infrastructure Requirements	[92,93]
Lack of Regulatory Compliance with Various Legal Frameworks across different countries	[92,93,105]

6. Conclusions, Limitations and Future Research Directions

Although the Metaverse is still in its infant stages, it can be argued that it has reshaped the ways in which brands can effectively enhance brand engagement and consumer experience. Although the current study gathers ideas from some of the major databases (i.e., Scopus), it could be argued that studies present in other major databases (i.e., PubMed, Web of Science, and EBSCOhost) could offer significant ideas towards the understanding

of enhancing brand engagement across Metaverse platforms. Secondly, the use of search strings is a limitation of this study, as it is difficult to capture all relevant terms at once and obtain consistent results across various databases. Thirdly, the VOS viewer utilised in the study could be considered as a limitation, as it may exaggerate the conceptual linkages of certain themes and could also lead towards ignorance of less noticeable themes despite their theoretical importance.

To address these limitations, it is suggested that future studies should incorporate multi-database searches to ensure that comprehensive ideas and findings on brand engagement across Metaverse platforms are captured effectively. Besides this, future studies could also focus on refining and updating the search strings to ensure a continuous update is reflected in the latest developments across this domain. Moreover, future research studies could also consider how brand engagement across Metaverse platforms can be done effectively by incorporating cultural norms across various national and cultural settings. Additionally, it can be understood that an individual's emotional state (i.e., Happiness, Sadness and Anger) and their perception towards Metaverse-based advertising play a vital role in brand engagement among consumers [64]. Hence, future studies should investigate these factors to better understand how they could contribute to brand engagement across Metaverse platforms. Lastly, this study has undertaken various theoretical perspectives to provide linkages to advertising done across Metaverse platforms and consumer engagement. However, future studies should consider undertaking a resource-based view and capability-based perspective to understand how resource integration, technological infrastructure, and employee training could be embedded across an organisation to enhance brand consumer relationships over Metaverse platforms.

Aside from this, the study offers several contributions such as: (a) presenting an outline on what factors should brands include to enhance brand engagement across Metaverse platforms; (b) highlighting how different demographic groups (i.e., Gen Z, Millennials) can be provided with tailored Metaverse experiences that offer social cohesion and community-belonging aspects to enhance brand engagement over Metaverse platforms; (c) showcasing the importance of the shift in consumers from a storytelling approach to a story-experiencing approach (i.e., enhance flow experience on Metaverse platforms) in various scenarios in Metaverse platforms; (d) presenting how brands can associate luxury advertising to NFTs and provide digital ownership for users to enhance brand loyalty and engagement; and (e) identifying the key factors that contribute towards strategic planning for brands and creating sustainable Metaverse platforms.

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