

AUGMENTED REALITY MARKETING: A BIBLIOMETRIC AND THEMATIC LITERATURE REVIEW

MARKETING PROŠIRENE STVARNOSTI: BIBLIOMETRIJSKI I TEMATSKI PREGLED LITERATURE

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Review

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Abstract

Purpose - This literature review analyzes augmented reality in marketing from 2022 to 2024, identifying trends, research gaps, and key studies through a bibliometric approach.

Design/Methodology/Approach - To address gaps in the literature, 171 scientific articles related to augmented reality published between 2022 and 2024 were curated based on relevant Web of Science categories and prestigious publishers to offer an extension of the landscape presented until 2022. These articles were systematically analyzed using VOSviewer software from two perspectives: co-authorship analysis and keyword patterns. The analysis mapped 522 authors into 133 clusters, revealing the scattered nature of augmented reality topics. On the other hand, the keyword analysis led to 40 keywords organized into four illustrative clusters.

Findings and implications - Augmented reality research in marketing has evolved significantly, highlighting trends in consumer experience and technology acceptance. Emotional connections with brands and the implications of privacy regulations such as GDPR are critical. Future studies should address gaps in frameworks and explore the role of AI in enhancing augmented reality's effectiveness across diverse audiences.

Sažetak

Svrha Pregled literature analizira proširenu stvarnost u marketingu korištenjem bibliometrijskog pristupa, identificirajući trendove, istraživačke jazove i ključna istraživanja od 2022. do 2024. godine.

Metodološki pristup Kako bi se adresirao istraživački jaz u literaturi, analiziran je 171 znanstveni članak povezan s proširenom stvarnošću, objavljen između 2022. i 2024. godine, odabran temeljem relevantnih kategorija u bazi Web of Science i prestižnih izdavača, u cilju ponude proširenog pregleda stanja predstavljenog do 2022. godine. Članci su sustavno analizirani pomoću softvera VOSviewer iz dviju perspektiva, a to su analiza suautorstva i obrasci ključnih riječi. Analiza je mapirala 522 autora u 133 klastera otkrivajući raspršenu prirodu tema proširene stvarnosti. S druge strane, analiza ključnih riječi rezultirala je s 40 ključnih riječi organiziranih u četiri ilustrativna klastera.

Rezultati i implikacije Istraživanje proširene stvarnosti u marketingu značajno se razvilo ističući trendove u potrošačkom iskustvu i prihvaćanju tehnologije. Ključni su emocionalna povezanost s markama i implikacije propisa o privatnosti, poput GDPR-a. Buduća istraživanja trebala bi adresirati istraživačke jazove u okvirima te istražiti ulogu umjetne inteligencije u poboljšanju učinkovitosti proširene stvarnosti kod različitih publika.

Limitations - The limitations of this literature review stem from the small number of articles analyzed, published only from 2022 up to 2024, and the usage of only one software – VOSviewer – for analyzing only one dataset. Including more articles and software in data analysis could enhance findings, while reducing the risk of identifying redundant trends, and also provide in-depth results.

Originality/value - Mapping thematic trends to identify research gaps through both author and keyword co-occurrence analyses for articles published from 2022 up to 2024, and analyzing occurrence and total link strength, dominant topics, and influential studies were empirically validated contributions to the originality of this literature review.

Keywords: augmented reality, marketing, literature review, bibliometric analyses

Ograničenja Ograničenja pregleda literature proizlaze iz malog broja analiziranih članaka, objavljenih samo od 2022. do 2024. godine, te korištenja samo jednog softvera, VOSviewer, za analizu samo jednog skupa podataka. Uključivanje više članaka i softvera u analizu podataka moglo bi poboljšati nalaze, smanjiti rizik od identificiranja redundantnih trendova i pružiti detaljnije rezultate.

Doprinos Analizom supojavlivanja autora i ključnih riječi za članke objavljene od 2022. do 2024. godine mapirani su tematski trendovi te identificirane istraživačke praznine. Isto tako, analiza pojavnosti i ukupne snage poveznica među dominantnim temama i utjecajnim studijama doprinosi originalnosti i vrijednosti ovog pregleda literature.

Ključne riječi: proširena stvarnost, marketing, pregled literature, bibliometrijska

1. INTRODUCTION

The use of technology in marketing has increased significantly in recent years, enabling complex shopping experiences. In 2023, global spending on digital media marketing increased by over 10%, while expenditure on traditional media declined by nearly 2% (PQ Media, 2024).

One of the emerging technologies is augmented reality, which helps consumers overlay virtual objects onto a real-time environment. As this technology was estimated to reach 1.19 billion users worldwide by 2028 (ARtillery Intelligence, 2024), marketers already started to include its capabilities into their strategy through apps like Snapfeet, L’Oreal, Ikea, and Scope augmented reality.

Due to its ability to project products into real environments, brands focused their attention on retail. The most popular product categories where augmented reality was used in online shopping, according to U.S. consumers, were furniture, clothing and accessories, and cosmetics (Bizrate Insights, 2024c). Accordingly, they used augmented reality for practical purposes, such as visualizing what products will look like in their physical space or to get an accurate representation of a product’s size, color, and style (Bizrate Insights, 2024b).

Although studies show that 74% of consumers find augmented reality versions more accurate when shopping than traditional pictures and descriptions (Bizrate Insights, 2024a), the literature is scattered among many research topics that surround this subject and lacks a cohesive approach altogether. Additionally, a comprehensive approach that would consider augmented reality’s future development and integration into the buyer stages is necessary. While recent literature reviews have systematically examined the role of mobile applications (Lázár & Szűcs, 2024) and emerging technologies such as virtual reality (Yadav et al., 2023) in marketing, augmented reality research remains relatively fragmented. This lack of consolidation emphasizes the need for a comprehensive

investigation into augmented reality’s strategic implications.

Previous literature reviews focused primarily on articles published up to 2022, such as “Augmented Reality Marketing: A Systematic Literature Review and an Agenda for Future Inquiry” (Du et al., 2022) or the more recent one on “Augmented Reality in Marketing: A Close Look at the Current Landscape and Future Possibilities” (Javeed et al., 2024). Furthermore, while bibliometric analysis software was used, there is a notable gap in defining precisely the significance of each dominant theme in the 2022-2024 landscape, which brought to the spotlight a gap covered by this article. Prioritizing relevant themes based on both popular keywords and authors’ collaboration during this period was also not approached within a structured framework. To address these gaps, this systematic literature review aims to analyze articles from 2022 to 2024 to enhance existing studies and provide a thorough analysis of the research priorities for 2024.

To build a relevant landscape spanning the period from 2022 up to 2024 in the augmented reality marketing research, the following research questions need to be addressed: RQ1 – What are the dominant themes and research trends in augmented reality marketing literature?; RQ2 – How has academic research on AR in marketing evolved over time?; RQ3 – What theoretical frameworks have been applied to study AR in marketing contexts?; RQ4 – Which industries are the most represented in AR marketing studies?

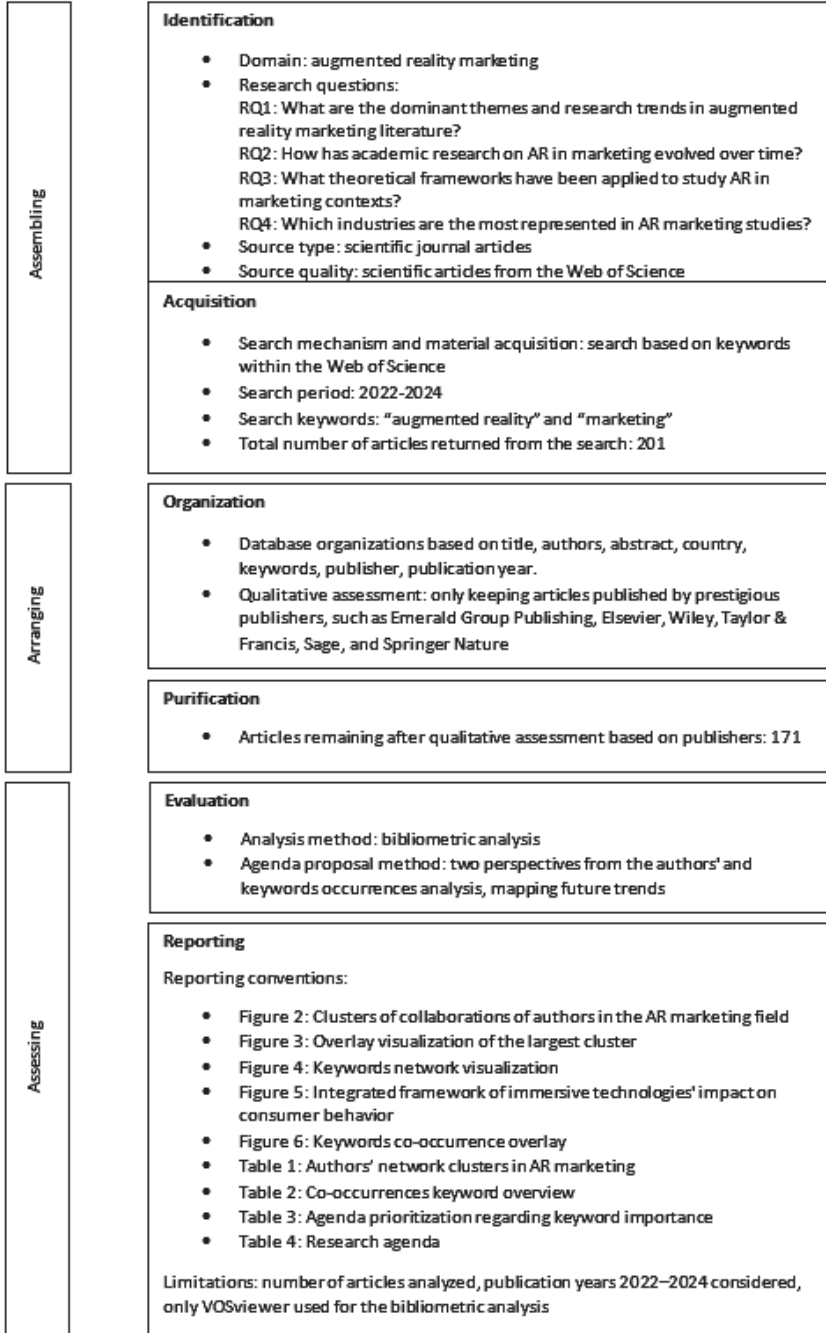
2. RESEARCH PURPOSE AND METHODOLOGICAL APPROACH

This literature review is aimed at providing a thorough and structured analysis to explain the current state of research on augmented reality in marketing and its 2022-2024 interconnections, as well as to extend the literature review landscapes. Using a bibliometric analysis approach, the review answers the research questions from

different perspectives with a view to broadening the knowledge of augmented reality usage in marketing. By mapping thematic trends and

identifying research gaps through both author and keyword co-occurrence analyses, and analyzing occurrence and total link strength,

FIGURE 1: The SPAR-4-SLR applied protocol



Source: Author's own research.

dominant topics and influential studies were empirically validated, contributing to the originality of this literature review.

Following the flow for systematic literature review proposed by Paul et al. (2021), a diagram with the methodology was designed as shown in Figure 1.

During the assembling stage, the augmented reality marketing domain and the four research questions were identified. As a starting point for the acquisition stage, 201 scientific articles dating from 2022 to 2024 containing “augmented reality” and “marketing” keywords were found in the Web of Science database as belonging to the following Web of Science categories: business, management, finance, economics, or operations research management science.

The database extracted contained title, authors, abstract, country, keywords, publisher, and publication year for each article to support the organization phase. Followed by a purification phase, a quality assessment refined the selection by choosing articles from prestigious publishers only, including Emerald Group Publishing, Elsevier, Wiley, Taylor & Francis, Sage, and Springer Nature. This process resulted in a final bibliography of 171 scientific articles.

The VOSviewer software was chosen for the evaluation stage of the SPAR-4-SLR protocol flow and to proceed with further data analysis. This innovative tool for network visualization allows researchers to systematically analyze large bibliographic databases based on connections between either authors or keywords. Previous literature reviews in marketing made use of this software in distinctive approaches either to set theoretical frameworks in the field (Sinkovics, 2016), to analyze the contributions of various marketing journals within the last decades (Valenzuela et al., 2017, Martínez-López et al., 2018), or to focus on competitor reviews (Ringel & Skiera, 2016).

In this case, VOSviewer was used for bibliometric analysis of 171 scientific articles from two

perspectives: co-authorship relations and keyword patterns, following the agenda on the proposed methods.

From an overview perspective of this systematic literature review, a map of network data based on authors' occurrences was created using all articles included in the bibliography. All 522 authors were grouped into 133 clusters, which shows the scatteredness of the AR subject matter in marketing. Afterwards, a keyword co-occurrence map was created to effectively track previous topics discussed and their evolution over time. Overall, the reporting stage included a series of tables, figures, and a descriptive analysis to systematically answer the four research questions identified with the potential of covering the previously explained literature gap.

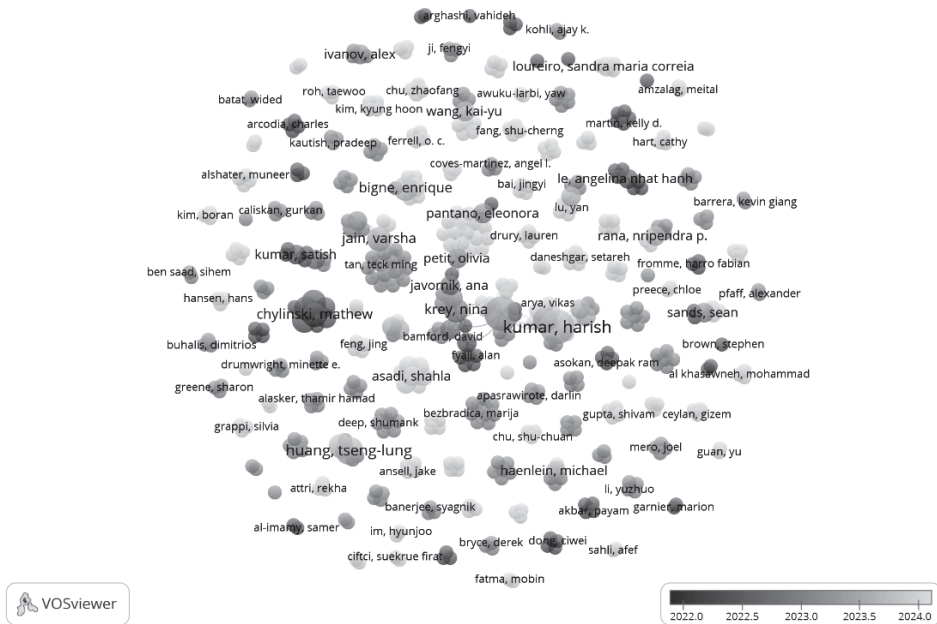
3. RESULTS

3.1. Co-authorship network overview

The co-authorship network overview was based on a VOSviewer bibliometric analysis using all 171 articles as a dataset, thus implying a co-authorship type of analysis, with a full counting method and having authors as a unit of analysis.

An overview of the co-authorship network reveals a scattered landscape in the research related to augmented reality (Figure 2). The map shows the clusters as a formation of various authors, while the publication year of the articles is depicted through colors: the newest, most recently published papers in 2024 are colored yellow; on the opposite scale, the oldest ones published in 2022 are purple. From the map, two major antagonist clusters can be spotted: the oldest cluster in purple with an average publication year of 2022, tagged in the picture with one of the main authors, Chylinski Mathew, and the latest cluster with an average publication year of 2024 in yellow, right below Pantano Eleonora's name.

FIGURE 2: Clusters of collaborations of authors in the AR marketing field



Source: Author's own research.

Answering the second research question (RQ2), a comparison of the previously mentioned clusters offers an interesting overview of the evolution of academic research in what concerns augmented reality marketing. When comparing the oldest and largest cluster, which includes 8 authors, to the newest and largest cluster of 15 authors, we see a shift in focus: while the former cluster centers on the role of technology in customer engagement, the latter emphasizes the digital transformation for experiences. Both clusters underscore the importance of understanding customer insights but they approach this from different perspectives.

The first cluster emphasizes advanced technologies, such as neuro-enhanced reality (Hilken et al., 2022a), AR (Hilken et al., 2022b), and the metaverse in improving customer experiences (Golf-Papez et al., 2022), as well as product evaluation, and purchasing behavior. It highlights the importance of understanding customer perceptions to leverage these technologies effectively.

On the other hand, the newest cluster changes the perspective, with authors covering topics on

the significant impact of digital transformation, particularly through technologies such as augmented reality and the metaverse, on consumer behavior and experiences within tourism and hospitality sectors (Huang et al., 2023; Jalilvand & Ghasemi, 2024). The research highlights how these technologies can enhance consumer engagement, mood maintenance, and overall experiences while also addressing the associated risks and challenges. Additionally, the authors emphasize the importance of adapting organizational strategies to leverage these digital tools for improved marketing and consumer empowerment (Dwivedi et al., 2022).

Taking a closer look, the biggest cluster illustrated in Figure 3 consists of 61 authors and links 9 smaller clusters connecting researchers' common ideas and perspectives that were explored and further analyzed to different stages. Of all the clusters shown in Figure 2, Figure 3 provides a closer look at the landscape of authors' alliances, highlighting the biggest group who collaborated through 2022 and 2024 in their research of augmented reality.

FIGURE 3: Overlay visualization of the largest cluster



Source: Author's own research.

A structured summary of all the 9 clusters pictured in Figure 3 is presented in Table 1, followed by a detailed descriptive analysis and comparison of clusters, providing answers to the first research question (RQ1) regarding the dominant themes studied.

The first cluster highlights the evolving landscape of marketing through innovative strategies, particularly in the context of smart destinations. Researchers emphasize the role of Destination Marketing Organizations (DMOs) in enhancing the quality of life for both tourists and residents (Sorokina et al., 2022). This cluster introduces frameworks for smart destinations that leverage technology to create engaging tourist experiences. The introduction of augmented reality marketing is showcased as a novel strategic area, differentiating it from traditional digital marketing through the newly proposed BICK (branding, inspiring, convincing, keeping) framework. This framework addresses the ethical concerns surrounding marketing practices and suggests a transformation in consumer-brand interactions.

While the first cluster lays the foundation for innovative marketing, it predominantly focuses on frameworks and strategies pertinent to tourism. This contrasts with later clusters that delve deeper into consumer engagement and behavior in various sectors, broadening the discussion beyond just tourism to encompass retail and digital interactions.

The second cluster discusses the psychological aspects of marketing, particularly through mental time travel experiences and visualization techniques, notably via augmented reality. Multiple studies converge on how these elements enhance consumer engagement and decision making (Barhorst et al., 2023; Petit et al., 2021; Rauschnabel et al., 2022; Paul et al., 2024). The emphasis here is on the interactive nature of augmented reality, which allows consumers to visualize potential future experiences related to products or services, thereby increasing their emotional connection and ultimately influencing their purchasing behavior.

TABLE 1: Authors' network clusters in AR marketing

Cluster no.	Cluster name	Authors' studies	Study theme	Common Grounds
1.	Smart tourism & ethical AR branding	Sorokina et al. (2022)	Smart destinations governance	How AR can be embedded strategically and ethically in place marketing and destination marketing organizations efforts
		Rauschnabel et al. (2022)	AR branding & ethics	
2.	AR immersion & mental simulation in decision-making	Petit et al. (2022)	Sensory and immersive AR effects on perception/memory	Psychological and cognitive effects of AR features on perception, simulation, and memory
		Barhorst et al. (2023)	Mental time travel	
		Rauschnabel et al. (2022)	Immersive brand experiences	
		Paul et al. (2024)	AR visualization and foresight in decisions	
3.	Retail digital transformation & strategic adaptation	Pantano & Willems (2022)	Role of digital tech, AI, and social media in evolving behavior	Strategic retail evolution driven by tech and external pressures
		Paul et al. (2024)	Retail transformation during digital disruption	
4.	Immersion levels & AR strategy in customer journeys	Rauschnabel et al. (2022)	Strategic AR customer journey planning	Matching AR intensity with specific marketing funnel stages
		Dieck et al. (2023)	Immersion levels and AR satisfaction	
5.	Emotional drivers & brand loyalty via immersion	Zanger et al. (2022)	Immersive AR and emotional engagement	How immersion, playfulness, and emotional drivers influence long-term branding outcomes
		Rauschnabel et al. (2024)	Immersion, features, and brand loyalty	
		Kumar et al. (2023b)	Visualization aligned with product categories	
		Wieland et al. (2024)	Psychological drivers of AR behavior	
		Dwivedi et al. (2022)	Content-context alignment in immersive environments	
		von der Au et al. (2023)	Metaverse marketing and strategic implications	

Cluster no.	Cluster name	Authors' studies	Study theme	Common Grounds
6.	Emotional closeness & brand love through familiarity	Rauschnabel et al. (2024)	Familiar brand closeness and brand love via AR	Shows spatial-emotional linkage between AR interactions and familiar brands
7	Consumer typologies & AR usage in retail	Caboni et al. (2024)	Informational, social, experiential, inspirational AR usage	Classifying user behavior and preferences in AR retail contexts
		Appolloni et al. (2023)	Typologies of e-commerce consumers under uncertainty	
8	Motivational & value-driven AR engagement	Kumar et al. (2022)	Hedonic/utilitarian motivations for AR use	Shared foundation in motivation theories and value alignment frameworks
		Kumar et al. (2023a)	Interactive AR and brand advocacy	
		Kumar et al. (2023b)	Interactivity and contextualization	
		Caboni et al. (2024)	Motivational factors behind AR engagement	
		Schultz & Kumar (2024)	Value-aligned AR strategy	
9	AR in tourism, mood & destination branding	Paul et al. (2024)	Tourism decision-making through AR	AR and the metaverse influence destination image, emotions, and travel behavior
		Huang et al. (2023)	AR's effect on consumer attitude in tourism	
		Jalilvand & Ghasemi (2024)	AR in destination branding and travel intent	
		Dwivedi et al. (2022)	Metaverse for marketing and interaction	

Source: Author's own research.

Unlike the first cluster's focus on strategic frameworks, this cluster highlights the emotional and cognitive mechanisms driving consumer engagement. It draws a connection between technology and psychology, suggesting that successful marketing not only requires innovative strategies but also a deep understanding of consumer perception.

The third cluster examines the rapid digital transformation across various sectors,

emphasizing the need for organizations to adapt to changing consumer behaviors. Key areas such as artificial intelligence and social media's integral roles in marketing strategies are highlighted (Pantano & Willems, 2022; Paul et al., 2024). This cluster illustrates the shift from traditional marketing practices to more agile, tech-driven approaches, particularly in retail, where the transition from brick-and-mortar to online sales necessitates new marketing methodologies.

This cluster complements the previous ones by illustrating the broader context of technological advancement affecting marketing strategies. While earlier clusters focus on specific marketing techniques or psychological engagement, this one places those elements within the larger framework of industry-wide transformation and adaptation.

The fourth cluster delves into the strategic value of augmented reality, detailing frameworks designed to elevate customer engagement levels. Researchers focus on how varying degrees of immersion in augmented reality experiences can dramatically influence consumer satisfaction and marketing effectiveness (Rauschnabel et al., 2022; Dieck et al., 2023). In contrast to the previous clusters, which either introduced innovative strategies or discussed broader trends, this cluster narrows the focus to explore specifically the strategic importance of augmented reality. It illustrates how technology affects consumer satisfaction directly and highlights the nuances necessary for effective augmented reality marketing.

The fifth cluster expands on augmented reality's immersive capabilities, examining its impact on consumer behavior, purchase decisions, and brand loyalty. The research highlights how differing levels of immersion necessitate tailored marketing strategies that correspond to product types (Zanger et al., 2022; Rauschnabel et al., 2024; Kumar et al., 2023b). Psychological factors influencing consumer experiences are also scrutinized, suggesting that a deeper layer of understanding is required for successful augmented reality implementation.

Interestingly, this cluster also discusses the implications of metaverse for marketing strategies, underscoring the importance of contextualization in consumer experiences.

It is linked directly with the previous cluster by emphasizing the practical implications of augmented reality immersion for consumer behavior, illustrating a continuity of thought,

outlining that strategies need to be immersed in consumer psychology to be effective. It builds on the strategic foundations laid in Cluster 4 and adds layers of complexity concerning consumer decision-making processes.

The sixth cluster investigates how augmented reality can effectively bridge the physical and digital realms, enhancing brand loyalty by integrating virtual information into consumers' physical environments. Research findings suggest that augmented reality applications can strengthen perceived closeness to brands, particularly among consumers already familiar with the products (Rauschnabel et al., 2024). This cluster shifts the focus from engagement to brand loyalty, setting it apart from previous discussions that addressed consumer interactions primarily in the context of shopping experiences. It highlights the strategic importance of nurturing long-term relationships facilitated by innovative technology.

Exploring consumer behavior in retail, the seventh cluster identifies four modes of augmented reality usage, that is, its informational, social, experiential, and inspirational usage, categorized by intrinsic and extrinsic motivations (Caboni et al., 2024). The research examines the nuanced effects of augmented reality on shopping experiences and retail interactions during economically uncertain times, classifying online consumers into three distinct types: unwilling, halfback, and digital. This classification provides deeper insights into behavioral changes that arise in response to evolving market conditions (Appolloni et al., 2023).

While earlier clusters addressed broader trends and technologies, this cluster delves specifically into consumer motivations during retail interactions, highlighting the complexities of consumer behavior in the wake of digital transformation. It emphasizes how different motivations require tailored marketing approaches, reflecting a shift toward more personalized marketing strategies.

Focusing on the transformative potential of augmented reality, the eighth cluster synthesizes findings from several studies that stress interactivity and contextualization as the key drivers of user benefits (Kumar et al., 2023b; Kumar et al., 2023a; Schultz & Kumar, 2024). The studies reveal that augmented reality can support brand advocacy by providing a unique consumer experience, underlining the importance of both hedonic and utilitarian values associated with augmented reality use. This cluster stands out by analyzing the duality of augmented reality's potential – both as a tool for engagement and as a means of fostering brand loyalty and advocacy. It refers back to earlier clusters by incorporating elements of consumer experience while emphasizing the need for a value-based approach in augmented reality deployment.

The final cluster examines the substantial impact of digital transformation and AR on consumer behavior within the tourism industry and beyond. It discusses how digital transformation shapes consumer decisions, addressing both systemic factors and individual behaviors (Huang et al., 2023; Jalilvand & Ghaseemi, 2024). Additionally, this cluster highlights the metaverse's implications for brand interactions, suggesting broader societal effects that warrant further investigation (Dwivedi et al., 2022).

This final group discusses key themes from earlier sections while looking ahead at how digital transformation affects consumer behavior. It compiles various elements analyzed in earlier discussions, such as consumer engagement, brand loyalty, and psychological motivations, ultimately framing them within the context of continued evolution in marketing strategies.

The findings depicted throughout each cluster directly address the first research question (RQ1) by showing dominant themes in augmented reality marketing, such as strategic frameworks, consumer engagement,

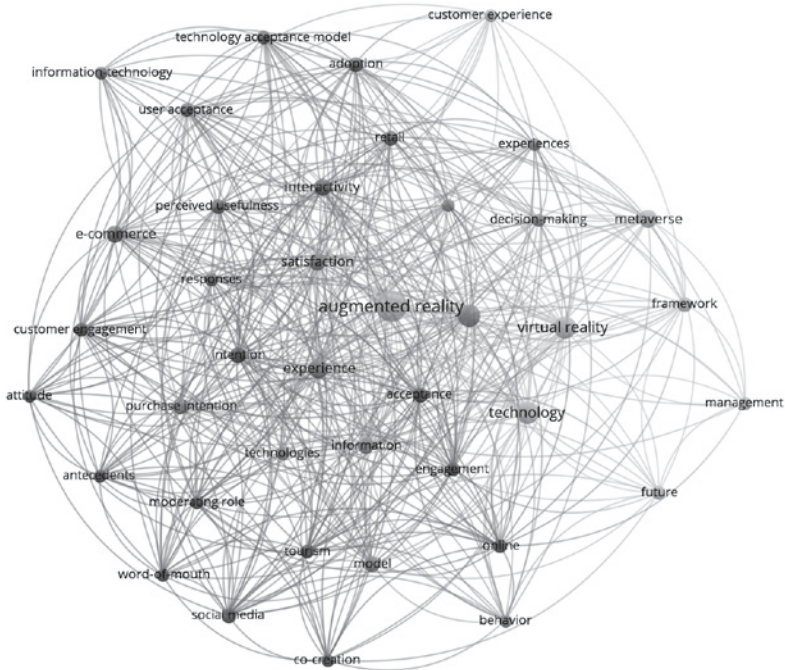
psychological influences, digital transformation, retail behavior, brand loyalty, contextualization, and metaverse immersiveness.

Collectively, these clusters provide a comprehensive view of how innovative marketing strategies, particularly augmented reality and digital transformation, reshape consumer engagement and behavior across various sectors. Each cluster connects to form a holistic narrative, spanning the topics ranging from theoretical frameworks and emotional drivers to practical applications, and the future landscape of marketing, illustrating the multifaceted nature of modern marketing in a digital age.

3.2. Co-occurrences keyword overview

A keyword co-occurrence map was created to effectively track previous topics discussed and their evolution over time, and ultimately to answer the research questions addressing the dominant themes: research trends (RQ1), academic research evolution over time (RQ2), theoretical frameworks applied (RQ3), and the most represented industries (RQ4). The dataset was standardized to ensure consistent terminology and prevent the duplication of topics expressed in different ways. For example, abbreviations such as “AR” were replaced with “augmented reality”, and “VR” was replaced with “virtual reality”. Additionally, hyphens were removed to align terms such as “artificial intelligence”, “augmented reality”, and “virtual reality”. To create the map based on bibliometric data, the dataset was imported in VOSviewer and a co-occurrence type of analysis with a counting method of “full counting”, using all keywords as a unit of analysis, was applied. As a result of analyzing keywords with a minimum co-occurrence threshold of eight, a total of 40 keywords emerged from the original 1,042, organized into four distinct clusters as presented in Figure 4.

FIGURE 4: Keywords network visualization



Source: Author's own research.

An overview of co-occurring keywords reveals four major clusters in terms of clusters' thematic name, keywords, and two metrics provided by VOSviewer: the number of occurrences and the total link strength. A summary is provided in Table 2.

Table 2 table shows key subjects discussed in the research on augmented reality in marketing over the past years, prioritizing content around the following: "digital engagement", "customer purchase behavior", "interactive shopping experiences", and "immersion technologies adoption frameworks". The understanding of the top keywords and the interrelationships between concepts in the field of augmented reality marketing is presented with the support of two parameters: occurrences and total link strength. With occurrences showing the number of times, a keyword appears and the total link strength showing how strongly the keyword is

connected across the dataset, it is notable that "augmented reality" and its "impact" are the most notorious keywords that led researchers.

Cluster 1: Digital engagement

This first cluster consists of 12 keywords with moderate co-occurrences ranging between 12 and 18, compared to the other three clusters, and total link strength values between 45 and 96. The link values suggest this cluster is a supporting theme because it has a slightly lower overall weight. Keywords such as "Intention", "social media", "acceptance", "customer engagement", and "engagement" are among the most notable keywords that set the theme of discussions most of the time, being inseparable.

This cluster's topic can be summarized in a couple of words – "digital engagement", being one of the most dominant themes of 2022-2024 research into augmented reality and contributing to answering RQ1.

TABLE 2: Co-occurrences keyword overview

Cluster no.	Cluster name	Keywords	Occurrences	Total link strength
1.	Digital engagement	intention	18	96
		social media	15	66
		acceptance	14	71
		customer engagement	12	62
		engagement	12	53
		online	11	57
		tourism	11	60
		word-of-mouth	9	45
		antecedents	8	46
		attitude	8	47
		co-creation	8	31
		moderating role	8	45
2.	Customer purchase behavior	impact	48	234
		satisfaction	20	106
		information	18	91
		model	18	80
		purchase intention	17	93
		technologies	10	30
		behavior	9	45
		decision-making	9	42
		augmented reality marketing	8	50
		experience	8	44
3.	Interactive shopping experiences	e-commerce	21	96
		interactivity	20	95
		adoption	14	63
		perceived usefulness	13	73
		retail	13	76
		user acceptance	12	68
		technology acceptance model	11	58
		responses	10	44
		information-technology	8	30
4.	Immersive technologies adoption frameworks	augmented reality	128	501
		virtual reality	49	205
		technology	44	211
		metaverse	25	85
		framework	14	61
		future	12	36
		customer experience	9	37
		management	8	18

Source: Author's own research.

Online engagement has captured the attention of many researchers, particularly regarding the use of augmented reality in marketing. This cluster gathers studies that consist of any digital engagement, from social media and co-creation approach with the users' help and need for inclusion (Wang et al., 2023) to online interaction used for tourism purposes (Yung et al., 2022).

Most studies in this cluster focus on customer engagement through augmented reality applications, continuing the exploration of engagement in various forms. The spotlight is solely on user engagement and the features that impact the augmented reality experience.

Engagement is often introduced, besides the traditional utilitarian and hedonic motivations, as a feature providing significant attributes in augmented reality that offer users both functional and enjoyable values (Kumar et al., 2022). Focusing on customer perceptions of augmented reality's interactivity significantly impacts attitudes toward augmented reality mobile applications and virtual products, with engagement being a crucial mediator that translates these perceptions into behavioral intentions (Ganesan & Kumar, 2024). Further exploring augmented reality's engagement implications, researchers found that augmented reality apps enhance brand engagement, resulting in increased brand love and co-creation, especially among highly engaged users (Khan & Fatma, 2024). Meanwhile, other papers highlight the social aspect, revealing that social AR fosters customer relationships through shared experiences, thus creating a sense of community and identity (Wang et al., 2023).

Other studies explore even more thoroughly the role that this engagement has and analyze particularly how augmented reality filters in social media are correlated with the engaged users. Filters act as a tool that makes users happy by providing entertainment and interaction, supporting their hedonic motivations. Besides this, the importance given to curiosity and compatibility offers a holistic approach to increasing

the level of engagement through augmented reality (Ibáñez-Sánchez et al., 2022).

Niche studies on engagement related to different industries or certain demographics have been on the rise, showing the impact of augmented reality and supporting the central topic of this cluster. It has been demonstrated that augmented reality positively influences customer engagement dimensions, which, in turn, boosts purchase intentions in e-banking among a sample of customers in India (Mukerjee, 2024). When it comes to segmentation based on demographic criteria, researchers tend to focus on the young segment of users. Studies show that Generation Z female consumers are positively impacted by technologies such as augmented reality and AI chatbots, which enhance body image, self-esteem, and purchasing behavior. While trust in social media celebrities boosts engagement, addictive social media use has minimal effects when it comes to social media usage as a technology, among others (Ameen et al., 2022).

Papers that examine engagement through the lens of self-exploration were also an important topic of discussion included in this cluster, both from a positive and negative perspective. Researchers demonstrated that virtual try-on (VTO) technology enhances self-explorative experiences in the fashion and beauty sectors, where increased self-presence during VTO leads to higher self-explorative engagement and improved brand attitudes through cognitive processing (Lavoye et al., 2023). Another study introduces customer "technostress" arising from negative interactions with modern technologies, identifying negative factors that impact engagement. It proposes that customer "technostress" mediates the relationship between new technologies and engagement, suggesting that reducing "technostress" through marketing efforts and familiarity can enhance customer experiences (Kumar et al., 2022).

Cluster 2: Customer purchase behavior

The second cluster is a dominant and central cluster with keywords that serve as major hubs in the network. The “impact” keyword dominates with 48 occurrences and a total link strength of 234, acting as a central term. Keywords such as “satisfaction”, “information”, “model” and “purchase intention” also have high occurrences, bringing the topic of discussion to the cluster’s content. Results for the total link strength are consistently high compared with other cluster keywords, reflecting this cluster’s high internal connectivity and importance.

Considering all keywords included, the core theme of this cluster can be titled “Customer purchase behavior”. This cluster adds depth to answering RQ1 and contributes to addressing the main topics discussed in augmented reality during 2022 and up to 2024.

The study of consumer behavior plays an important role in relation to the use of augmented reality in marketing. Researchers concentrated on various stages of the buyer journey, highlighting decision-making, purchasing intent, and satisfaction after using augmented reality as an informative tool.

The utilization of augmented reality technology has been observed to enhance consumer satisfaction levels while simultaneously increasing purchase intention (Xue et al., 2022). In retail, four distinct consumer segments exhibit varying attitudes towards using augmented reality as a shopping tool. These segments are AR Averse, AR Hesitant, AR Open, and AR Enthusiastic. It is important to note that consumers’ attitudes toward augmented reality are influenced by their perception of decision confidence (how much AR enhances their ability to make informed choices). Furthermore, the potential for augmented reality to over-stimulate shoppers by providing an excess of information, along with the experiential value derived from engaging with augmented reality, also plays a role in shaping consumer attitudes towards this technology (Romano et al., 2022).

According to a 2022 study conducted within the cosmetic industry, the utilitarian motive underlying the theory of planned behavior is a key driver behind the value perceived by consumers in using an augmented reality-enabled mobile app, as compared to a hedonic motive. This finding suggests that the practical benefits of such technology have a more significant reach over consumers’ purchasing decisions than more indulgent motivations (Trivedi et al., 2022). Researchers from the United Kingdom also support the idea that AR technology can enhance consumer satisfaction and increase purchase intention in shopping, specifically in the fashion industry. However, they observed that entertainment is not a significant factor in deciding to use augmented reality technology while shopping (Xue et al., 2022).

On the other hand, the previous statement is in partial contradiction with research by Holdack and his team (2022) who found that how much pleasure someone feels regarding the usage of augmented reality directly affects their interest in a product or service. This feeling is not affected by how informative they find the product. Also, enjoyment is a better predictor of a person’s attitude and commitment than how useful they think the product is.

The debate regarding hedonic and utilitarian motives continues among researchers even within this cluster. Studies revealed that perceived augmentation plays a key role in promoting decision comfort through both utilitarian and hedonic paths. Notably, these effects were found to be less pronounced among younger users, and haptic imagery only had a utilitarian impact (Ivanov et al., 2022).

Cluster 3: Interactive shopping experiences

With a total of eight keywords with mid-range occurrences and total link strength values compared to the other three clusters, this third cluster presents a complementary subject and a sub-theme of the second cluster. Keywords such as “e-commerce”, “interactivity”, and “adoption” are among the top three in terms of

occurrences whereas, in terms of link strength, “e-commerce”, “interactivity” and “retail” take the podium.

Summarizing all keywords’ significances, their occurrences and link strength, the third cluster can be named “Interactive shopping experiences” because it consists of topics related to e-commerce, retail, and augmented reality adoption. Furthermore, as its theme suggests, this cluster supports the study in answering RQ4 and emphasizing retail as the main industry in which augmented reality marketing is predominantly represented.

Due to the ability of augmented reality technology to overlay virtual objects onto a real-time environment, its applicability to retail comes naturally, and so is the case with studies that follow to help marketers use this as a tool in retail to provide better shopping experiences (Hapsari et al., 2024).

Most studies focus on the positive impact that augmented reality has on the shopping experience. Incorporating this technology helps customers experience a heightened sense of immersion, which can positively influence their likelihood of making a purchase. Research has shown that the quality of decision-making plays a mediating role in this process, while privacy concerns serve as a moderating factor (Sengupta & Cao, 2022).

When it comes to adoption, besides privacy concerns, trust in augmented reality applications is a significant factor in determining both usage intention and the intention to be a patron of online/offline stores (Kang et al., 2022).

Another important aspect, when discussing a niche such as the food industry, is that augmented reality enhances consumers’ cognitive ability to simulate the experience of consuming a food item depicted in a picture. This heightened level of mental simulation subsequently increases the desire and likelihood of purchasing the food product at hand (Fritz et al., 2023).

Hilken et al. (2022b) have presented a different perspective on the advantages of augmented reality technology regarding the self-relatable aspect of the content. As per their findings, this technology can enhance customer purchases by improving their self-image, leading to a seamless connection between the customer and the point of sale. As a result, this creates a captivating and immersive shopping experience, ultimately elevating sales and customer contentment.

Findings by Vo et al. (2022) indicate that the level of immersion experienced by users has a significant impact on their attitude and intention to adopt mobile augmented reality applications. On the other hand, another study among 297 Turkish respondents yielded an intriguing finding that a high level of “wow” factor does not necessarily enhance the effectiveness of AR apps. In fact, it can have the opposite effect of diminishing consumer motivation to utilize AR apps for shopping and making purchases (Arghashi, 2022).

Previous research led with the following statement: incorporating augmented reality technology to provide consumers with access to product information has the potential to enhance their understanding and overall shopping experience. However, a 2022 study revealed that combining detailed and controllable information at the point of sale can bring out negative reactions from shoppers in a hypermarket setting (Hoffmann et al., 2022). As such, it was emphasized how important it is to consider the potential consequences of this approach before implementing it in a retail environment.

Contrary to the challenges faced by using augmented reality in hypermarket settings, the integration of augmented reality in e-commerce promises to generate positive outcomes. Research suggests that those who interacted with augmented reality e-commerce experienced higher levels of perceived effectiveness in the purchasing process, as well as reduced psychological distance and perceived risks when

compared to those who used conventional web-based e-commerce (Uhm et al., 2022).

Cluster 4: Immersive technologies adoption frameworks

The fourth cluster is the most dominant and densely linked. The “augmented reality” is overwhelmingly central, as expected, with 128 occurrences and a link strength of 501, strongly influencing the structure of the map. The other keywords, such as “virtual reality”, “technology”, “metaverse”, “framework”, and “future”, are still relatively strong and several record more than 10 occurrences. This cluster captures the main topic or research domain focus, the conceptual anchor of the dataset.

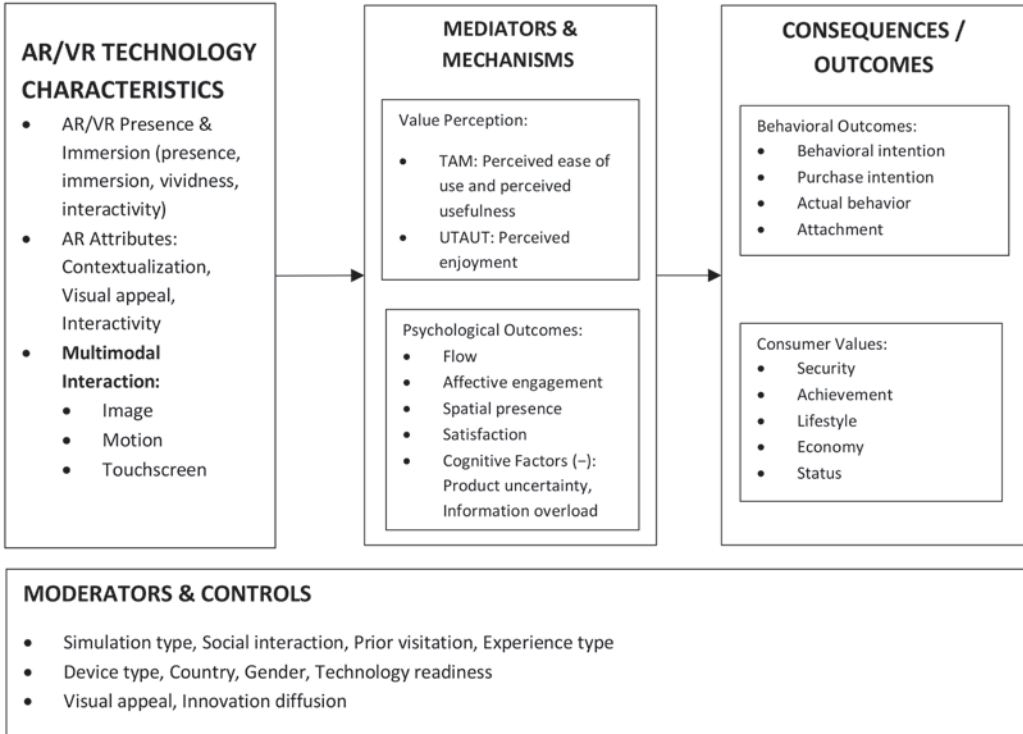
A significant part of the discussion in the analyzed literature focused on frameworks that

can be implemented for adopting immersive technologies, whether related to the metaverse in general or specific immersive technologies such as augmented reality and virtual reality.

As the name of the cluster suggests, the insights provided by researchers assist in answering RQ3 about the theoretical frameworks applied to study augmented reality marketing.

To synthesize insights from three AR/VR consumer behavior frameworks, an integrated diagram combining key constructs across technology, psychology, and marketing was developed and is illustrated in Figure 5. The models examined AR/VR presence and immersion by Fan et al. (2022), sensory interaction and cognitive outcomes by Chen et al. (2023), and AR product

FIGURE 5: Integrated framework of immersive technologies’ impact on consumer behavior



Source: Author’s own research.

attributes tied to consumer values by Kumar et al. (2023b).

The framework was divided into four layers: Technology characteristics, Mediators & Mechanisms, Outcomes, and Moderators, following a structure that reflects a stimulus-organism-response logic. Using this, Figure 4 shows how AR/VR features, such as immersion, customization, and multimodal inputs, drive both positive (e.g., flow, satisfaction) and negative (e.g., information overload) psychological mechanisms. These, in turn, influence behavioral outcomes (e.g., purchase intention, attachment) and deeper consumer values like lifestyle or status. Moderators such as device type, gender, and prior experience were kept to account for differences across contexts. This approach combines research, theory, and marketing strategies, creating a single tool for analyzing or designing engaging consumer experiences.

Individually, each paper brings new perspectives to the extant literature. Studies show that immersive technologies, especially augmented reality, can significantly enhance user experiences in different areas, such as marketing and tourism. Kumar et al. (2023b) explore how specific features of augmented reality – for instance, its ability to provide context and interactivity – benefit consumers by improving their decision making and reducing feelings of regret after a purchase. They propose a structured framework (SEAD and SALES) to show how these augmented reality features help users achieve their goals. This study highlights that businesses can create better strategies for adopting this technology by understanding how users interact with augmented reality.

In the studies by Chen et al. (2023) and Fan et al. (2022), the focus shifts to how immersive technologies impact shopping in the metaverse and tourism experiences. Chen et al. (2023) point out that different interactions in augmented reality can increase users' willingness to buy by reducing uncertainty about products. This suggests that effective adoption

frameworks should consider how users experience technology on a sensory level. Fan et al. (2022) identify "presence" as a key element in augmented reality / virtual reality experiences in tourism. This affects how much value users perceive and how they emotionally respond. Studies indicate that to adopt and implement immersive technologies successfully, it is important to understand both the sensory experiences they provide and the psychological effects they have on users.

As independent studies, each and every one provided valuable, yet distinct, perspectives on how augmented reality and virtual reality influence consumer behavior, psychology, and values. Fan et al. (2022) take a broad and inclusive approach, integrating both augmented reality and virtual reality technologies. Their study focuses on how presence – a psychological state fostered by immersive technologies – drives downstream consumer responses. Chen et al. (2023) narrow the focus to augmented reality specifically, analyzing how particular sensory and interactive features influence users' cognitive and affective states, and how these in turn drive purchase intention. A study by Kumar et al. (2023b) is also AR-specific but, instead of exploring psychological responses, it zooms in on the marketing perspective, linking augmented reality product attributes to consumer-perceived benefits and ultimately to core personal values.

While Fan et al. (2022) help researchers and strategists understand how immersive technologies affect users psychologically and behaviorally across multiple contexts, Chen et al. (2023) assist UX designers and product managers in refining augmented reality features based on emotional and cognitive reactions. In addition, the framework proposed by Kumar et al. (2023b) is ideal for marketers and branding professionals seeking to align augmented reality experiences with deeper consumer motivations and segmentation strategies.

Just as their scope and contributions to literature differ, so do their methods and strengths

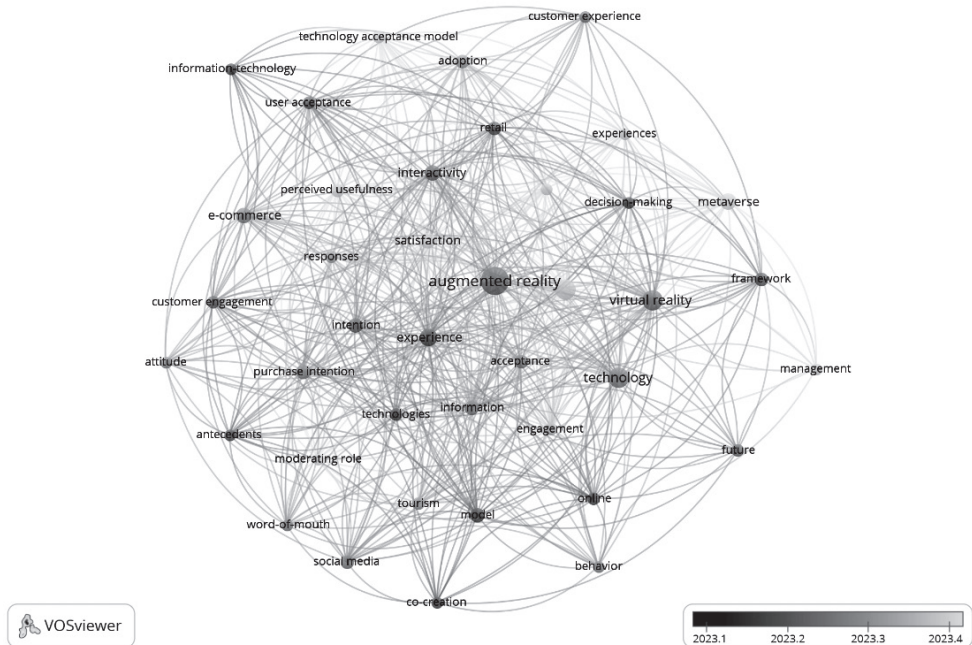
of approach. The strength of the model proposed by Fan et al. (2022) lies in its comprehensiveness and structure. This layered, testable model accommodates various technological inputs from AR/VR characteristics such as presence, telepresence, immersion, vividness, and interactivity, mediating mechanisms through the technology acceptance model and perceived enjoyment, and moderators including simulation type, social interaction, prior visitation, and experience type. Meanwhile, Chen et al.'s (2023) approach strength is its empirical clarity and specificity, providing direct design insights based on measurable augmented reality features as well as statistical validation. From a practical perspective, the study by Kumar et al. (2023b) derives strength from its marketing applicability. By aligning augmented reality features with customer values in this case, it becomes a powerful tool for brand strategists, advertisers, and experienced designers.

4. TRENDS AND FUTURE AGENDA

Trends become easily identifiable by examining the chronological overlay of co-occurring keywords, presented in Figure 6. This layout of the bibliometric analysis supports the study in answering the first research question (RQ1) concerning the research trends. Notably, research has increasingly focused on topics such as the “metaverse”, the “technology acceptance model”, immersive “experiences”, “management” decisions, and customer “satisfaction” regarding the usage of augmented reality in marketing.

Besides major literature reviews on the metaverse, such as the one conducted by Hajja et al. (2024), the topic of “metaverse” was also discussed through practical research, including using augmented reality to design comprehensive experiences.

FIGURE 6: Keywords co-occurrence overlay



Source: Author's own research.

Recent research draws attention to the role of augmented reality in transforming consumer experiences within the metaverse. Studies identify key modes of augmented reality usage, highlighting how these dimensions facilitate deeper engagement in immersive digital environments (Caboni et al., 2024). Research shows that augmented reality effectively connects users to brands through emotional engagement, which is essential for building close relationships in the future metaverse perspective (Rauschnabel et al., 2024).

Other researchers found that the interactive elements and contextual information of augmented reality help consumers make better decisions using the immersive tools applied to metaverse shopping experiences (Kumar et al., 2023b). Meanwhile, Chen et al. (2023) highlight the importance of multimodal sensory interactions in augmented reality, which help address common online shopping challenges, notably product uncertainty and information overload.

Besides the role of augmented reality as an immersive tool for a potential future complex metaverse, researchers have recently conducted studies focusing on the transformative effects of the metaverse on marketing and services. Studies examine how the metaverse redefines customer experiences, calling for service scholars to reassess existing theories and explore new research opportunities (Gleim et al., 2023). Other perspectives are brought up by introducing the Metaverse Engagement Model, which combines technological advancements with consumer behavior to enhance brand engagement and loyalty, utilizing augmented reality, virtual reality, and artificial intelligence (Bilgihan et al., 2024).

A shift toward the “technology acceptance model” is understandable, considering that this technology is relatively recent. While all previous studies rely on similar acceptance models that emphasize user perceptions, they differ in their focus on demographic factors, social

influences, and the specific aspects of user experience related to augmented reality and the metaverse.

Findings show that whereas first-time augmented reality users focus on usefulness, regular users enjoy the experience more, with vividness influencing the emotions of new users (Söderström et al., 2024). As the focus on demographic data of the samples and its implications changes, Schultz and Kumar (2024) point out that convenience and information are important for adopting augmented reality, especially for women who value emotional experiences. Segmenting the audience based on generations, researchers reveal that both logic and feelings influence Gen Z-s choice to use augmented reality when shopping online, with perceived value playing a significant role in augmented reality adoption (Lai et al., 2024).

Research applying the technology acceptance model for augmented reality in tourism explains that perceived ease of use and usefulness improve electronic word of mouth (e-WOM) among Jordanian tourists using the Jannah Jo app, although augmented reality has little effect on e-WOM (Madi et al., 2024).

Switching the perspective from the overlay layout using only the period of time differentiator between rising trends and old content-based studies, a prioritization using the occurrences and link strength can be adopted for a structured agenda to add more depth to a complex answer of RQ1. As the data is skewed, using the median to split the database in half for both parameters (occurrences and link strength) was the approach that helped design a four-quadrant layout presented in Table 3. The high occurrences are considered the ones above or equal to the median of 12, and the high total link strength (TLS) is considered for scores above or equal to the median of 61. All keywords with a score below the median are presented in their respective quadrants.

TABLE 3: Agenda prioritization regarding keywords importance

Category	High occurrence (scores of 12-128)	Low occurrence (scores of 8-11)
<p>High TLS (scores of 61-501)</p>	<p>Mature core topic – stable: intention, social media, acceptance, customer engagement, impact, satisfaction, information, model, purchase intention, e-commerce, interactivity, adoption, perceived usefulness, retail, user acceptance, augmented reality, virtual reality, technology, metaverse, framework</p>	<p>High-potential emerging node: no keyword matches this criterion</p>
<p>Low TLS (scores of 18-60)</p>	<p>Isolated buzzword – low impact: engagement, future</p>	<p>Weak signals, low priority: online, tourism, word-of-mouth, antecedents, attitude, co-creation, moderating role, technologies, behavior, decision-making, augmented reality marketing, experience, technology acceptance model, responses, information technology, customer experience, management</p>

Source: Author’s own research.

The future agenda should consolidate core themes as presented in the first quadrant. Even if studies have been conducted to establish frameworks for the metaverse and its immersive technologies, such as augmented reality and virtual reality, gaps arise from unanswered questions regarding how the presented frameworks applied to augmented reality can surpass the traditional methods and optimize costs, as well as how they can be applied to different target audiences due to access to a multitude of criteria with the help of the online environment. Also, the current

socio-economic landscape offers new perspectives as new technologies emerge and help compile a better usage of augmented reality, such as improving it using artificial intelligence. Moreover, privacy policies such as the EU’s GDPR or California’s CPRA are becoming increasingly subject to debate in view of the fact that online marketing collects private information regarding prospects and uses it in its strategies of targeting and segmentation. Important research topics are summarized and presented in Table 4.

TABLE 4: Research agenda

Topic	Proposed questions	Methods	Theoretical lenses
Conceptual foundations of immersive marketing	How can we adjust traditional marketing models for new immersive environments?	Conceptual analysis, literature review, expert interviews	<ul style="list-style-type: none"> • Service-Dominant Logic (Vargo & Lusch, 2004) • Experiential Marketing Theory (Schmitt, 1999)
Segmentation and personalization in AR/VR	<ul style="list-style-type: none"> • How can segmentation act as a moderator in immersive marketing? • How can AR/VR experiences be personalized using behavioral and contextual data? 	User testing, A/B personalization trials, data-driven design studies	<ul style="list-style-type: none"> • Personalization Theory (Tam & Ho, 2006) • Consumer Decision Journey Models (Court et al., 2009) • Market Segmentation Theory (Smith, 1956)
Technological convergence and governance	How will the combined use of AI, blockchain, and immersive tech change marketing strategies for AR/VR?	Scenario analysis, expert panels, trend analysis, data analysis based on survey responses	Innovation Diffusion Theory (Rogers, 2003)
Ethics and privacy in Immersive marketing	<ul style="list-style-type: none"> • What ethical challenges arise in collecting biometric and behavioral data through AR/VR? • How should privacy and consent mechanisms be designed in immersive ad experiences? 	Policy analysis, consumer surveys	Ethical Decision-Making Models (Ferrell & Gresham, 1985)

Source: Author's own research.

The selection of theoretical lenses for each topic was guided by the relevance of each framework to the specific research questions. For the “conceptual foundations of immersive marketing”, Service-Dominant Logic and Experiential Marketing Theory were chosen due to their emphasis on value creation and consumer experience, which are central to immersive environments. In the case of “segmentation and personalization in AR/VR”, theories related to personalization, market segmentation, and the consumer decision journey were selected to address how behavioral and contextual data can shape tailored user

experiences. For “technological convergence and governance”, Innovation Diffusion Theory was identified as the most suitable lens, as it has the potential to explain how emerging technologies such as AI, blockchain, and AR/VR can be adopted and integrated. Lastly, “ethics and privacy in immersive marketing” draws on Ethical Decision-Making Models to frame the considerations around data collection, user consent, and privacy in immersive settings. Each theoretical framework was selected for its ability to support further search within the agenda’s topics.

5. CONCLUSIONS

Researchers have increasingly focused on critical themes such as the metaverse, technology acceptance, immersive experiences, management decisions, and customer satisfaction concerning the use of augmented reality in marketing. As these technologies continue to evolve, they are likely to shape the future of retail and consumer interactions significantly, hence research approaches to this topic need to be considered.

This paper offers a comprehensive bibliometric and thematic literature review of augmented reality marketing, aimed at identifying the topics discussed, the evolution of research, and future directions of this dynamic research domain. By employing a bibliometric approach to analyze both keyword co-occurrence and author collaboration networks, the study advances the field in several aspects.

From a methodological point of view, the review integrates dual-perspective analysis, combining semantic keyword-based and social author-based bibliometric mapping. By proceeding with this approach, the article provides a novel and multidimensional approach to literature synthesis in augmented reality marketing.

Not only are the two perspectives in bibliometric analysis discussed regarding the research advancements and discoveries but are also used as a starting point in a bid to map trends with their overlay view, which indicates the average publication year for each cluster. Moreover, metrics provided for the overlay views, such as keyword occurrences and total link strength, support the development of a prioritization system in trends using keywords; these range from core topics such as adoption frameworks to low-priority topics such as word-of-mouth due to low occurrences and weak link strength. Even though this method is a more in-depth one than using only the average publication year of the cluster, the results from both perspectives complement one another and support a better

understanding of the evolution and future of augmented reality in research.

This bibliometric literature review supports researchers with a comprehensive synthesis of the landscape of augmented reality marketing research as the main theoretical contribution. The review identifies thematic clusters specific to the augmented reality marketing research between 2022 and 2024, offering an updated and relevant picture of the field's conceptual development.

As dominant themes, the literature covered in the paper highlights augmented reality marketing as a balance between strategic design and immersive consumer experiences. Clusters identify key themes discussed in the literature, including digital engagement, customer purchase behavior, interactive shopping experiences, and frameworks for adopting immersive technologies.

Departing from the study of engagement in correlation with augmented reality marketing usage to industry-focused approaches, as in retail, where Appolloni et al. (2023) suggest that different augmented reality strategies should be applied based on consumers' digital readiness, the themes illustrate a dynamic interplay between digital engagement and purchasing behavior.

Tracking the shifts in perspective from the thematic overview up until 2024, augmented reality research in marketing has evolved from scarce topics such as neuro-enhanced reality (Hilken et al., 2022a) to complex frameworks that bring new perspectives in implementing marketing strategies. Recent research shows important trends in how augmented reality and the metaverse improve consumer experiences and technology acceptance. Building strong emotional connections with brands, vital for customer loyalty in the metaverse (Rauschnabel et al., 2024), or focusing on the usefulness of technology is debated in 2024 (Söderström et al., 2024).

Another theoretical contribution this paper makes is the development of a structured thematic agenda that not only maps existing future research opportunities but also identifies key conceptual lenses through which augmented reality marketing research can be further expanded. Topics such as conceptual foundations of immersive marketing, segmentation and personalization in AR/VR, technological convergence and governance, ethics and privacy in immersive marketing are accompanied by theoretical lenses such as service-dominant logic (Vargo & Lusch, 2004), experiential marketing (Schmitt, 1999), market segmentation (Smith, 1956), or innovation diffusion (Rogers, 2003) theories. This provides reliable grounds for theoretical advancement and cross-disciplinary integration.

As both a theoretical and practical contribution, the review proposes an integrated framework of the impact of immersive technologies on consumer behavior. It links thematic findings to behavioral constructs, offering a basis for theoretical advancement, empirical exploration opportunities, and practice opportunities in industries such as retail. The framework consists of four phases: technology characteristics, mediators & mechanisms, outcomes, and moderators,

all aligned with a stimulus-organism-response logic. The flow of the framework follows AR/VR characteristics, mediators, and mechanisms through TAM, UTAUT theories, and psychological outcomes, and then leads to desired behaviors. The outcome easily illustrates and synthesizes the mechanism of AR/VR adoption or other behaviors, such as purchase intention, attachment, or actual behavior. Finally, this framework helps in implementing augmented reality effectively across different sectors and user interactions.

Although a thorough analysis was conducted to design a detailed literature review on augmented reality marketing, there are several limitations. The small number of scientific articles analyzed, and the decision to select only those dating from a short period between 2020 and 2024, restrict this study to just a small segment of a larger pool of research that includes the initial debates and discussions surrounding this technology. Furthermore, only one software, VOSviewer, was used to analyze the dataset, which may limit the comprehensiveness of the results. Utilizing additional software tools, such as Pajek and Bibliometrix, could provide a broader perspective in this review.

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