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The Metaverse: The Essence, Research Streams, and Potential Applications in Marketing

Marcin Awdziej¹, Dagmara Plata-Alf², Jolanta Tkaczyk³

¹ Kozminski University, Department of Marketing, Jagiellońska 59, 03-301 Warszawa, Poland, e-mail: mawdziej@kozminski.edu.pl, ORCID: <https://orcid.org/0000-0002-9113-5896>

² Kozminski University, Department of Marketing, Jagiellońska 59, 03-301 Warszawa, Poland, e-mail: dplataalf@kozminski.edu.pl, ORCID: <https://orcid.org/0000-0003-4772-237X>

³ Kozminski University, Department of Marketing, Jagiellońska 59, 03-301 Warszawa, Poland, e-mail: jtkaczyk@kozminski.edu.pl, ORCID: <https://orcid.org/0000-0002-2110-4314>

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ABSTRACT

Objective: The objective of this article is to identify the main research streams and research gaps relating to the metaverse in management sciences, particularly in the field of marketing.

Research Design & Methods: The researchers employed a systematic analysis of the literature to achieve their objective. They reviewed and examined various sources to identify the essence of the metaverse and ascertain the areas and directions of research pertaining to this concept.

Findings: The metaverse is envisioned as a virtual universe comprising numerous 3D virtual worlds where consumers, their avatars, and brands coexist and interact. Initially, the metaverse concept emerged in computer games set in complex, closed universes. However, in 2021, major technology companies like Facebook determined that the metaverse would be the next stage in virtual environment development, resulting in heightened interest from both practitioners and researchers. Despite being the subject of research across multiple scientific disciplines for years, the conceptualisation of fundamental metaverse concepts and its essence remains in an early stage, lacking a consensus.

Implications/Recommendations: The findings of this study emphasise the need for further research and exploration in the field of management sciences, particularly within marketing, to comprehensively understand and define the metaverse. The evolving nature of the metaverse calls for collaborative efforts from both practitioners and scientists to unravel its potential implications for businesses and consumers.

Contribution: This study contributes to the existing literature by presenting a systematic analysis of the metaverse concept within the context of management sciences, focusing on marketing. By identifying gaps and highlighting key areas of investigation, the research lays the groundwork for future studies in this rapidly evolving domain.

Article type: original article.

Keywords: metaverse, marketing, systematic literature review, VOSviewer.

JEL Classification: M31, O33.

1. Introduction

Considered as a new connection platform for Web 3.0, the metaverse is predicted to fundamentally change the way consumers and companies interact, communicate, create, and capture value. There is an intensive debate, in both the academic and business world, regarding the possible applications and implications of this new, disruptive technology, as well as its directions of evolution (Ario *et al.*, 2022; Park & Kim, 2022; Tan & Salo, 2023). Like many innovations at the very early stage of development, the metaverse is subject to contradictory assessments (Shen *et al.*, 2021; Bian *et al.*, 2022; Dwivedi *et al.*, 2022; Rosenberg, 2022). Many welcome it enthusiastically as a powerful technological mega-trend, that will radically transform consumer behaviour, and as a result, marketing practice (Shen *et al.*, 2021). Others criticise it as a fad, that would eventually share the fate of its predecessors (Rosenberg, 2022; Dwivedi *et al.*, 2023). However legitimate, this scepticism seems to ignore both the fundamental differences between the current and the early (such as Second Life) versions of the metaverse, and the differences in the market conditions surrounding their introductions (Park & Kim, 2022). While in the past the early metaverse platforms were accessed through PCs, now they are accessed through mobile and virtual reality devices at any time and in any place. Current technological developments allow the generation of far more immersive virtual environments, with greater realism, and stimulation of multiple senses – offering consumers a more “natural” and seamless user experience. From the consumers’ perspective, the widespread use of social media and adoption of NFT blurred the boundaries between the real and virtual worlds, with younger generations of consumers in particular not perceiving them as being in opposition (Nokia & Ipsos, 2022). Last but not least, the COVID-19 pandemic not only proved the usefulness

of technologies facilitating non face-to-face activities, but also enforced their rapid adoption by great numbers of consumers to continue with their professional and private lives. Because of these differences, scientific studies of the metaverse are necessary, including the definition of the concept itself, consumer acceptance, motivations to use and engage with metaverse environments.

The objective of the article is to identify, based on the systematic literature review:

- 1) the research streams related to the metaverse in the context of marketing,
- 2) the main research gaps relating to the applications of the metaverse in the management sciences, particularly in the field of marketing.

2. Definition of the Metaverse

Since 2021, when Facebook rebranded to Meta and Mark Zuckerberg (Ball, 2022) announced the decision to invest in this next iteration of the Internet, the term metaverse has received growing attention from many scientific disciplines, evidenced by the soaring numbers of publications. This created the need for a comprehensive definition, well grounded in research, and broadly accepted across diverse areas of science (Weinberger, 2022). “Metaverse” is a compound word, combining “meta” (transcendence, beyond, virtual, or abstract) with “universe” (world) (Lee & Kim, 2022). Literary endeavours have made numerous efforts to conceptualise and establish a clear definition of the metaverse (Trunfio & Rossi, 2022). One definition put forth describes it as “a virtual and augmented reality-based representation of a three-dimensional space, where individuals can utilise personalised avatars to engage in work, recreation, and synchronous communication with one another” (Trunfio & Rossi, 2022, p. 103). Weinberger (2022) conducted an extensive literature survey and, based on the findings, defined the metaverse as follows: “an interconnected web of ubiquitous worlds partly overlapping with and enhancing the physical world. These virtual worlds enable users represented by avatars to connect and interact with each other, to experience and consume user-generated content in an immersive, scalable, synchronous, and persistent environment. An economic system provided incentives for contributing to the metaverse” (Weinberger, 2022, p. 13). Following the ideas of Park and Kim (2022) and a comprehensive review of 64 scientific articles, Lee and Kim (2022, pp. 615–616) defined the metaverse as “the permanent, immersive mixed-reality world (...) where people and people, people and objects can synchronously interact, collaborate, and live over the limitation of time and space, using avatar, the immersion-supporting devices, platform, and infrastructure”. The analysis of the above allows the identification of the elements that, in our opinion, indicate the key characteristics of the current metaverse: avatar, synchronicity, interactivity, persistence, immersion, and ubiquity. The avatar element refers to users expressing themselves via virtual

avatars; synchronicity relates to experiencing the metaverse in real time; interactivity relates to the ability to manipulate objects in the metaverse; persistence refers to how the platform continues operating even when users are not active; immersion reflects how the metaverse mirrors the real world and allows consumers to immerse themselves in the metaverse. Finally, ubiquity refers to availability of the metaverse technology (access to hardware, computing power, and connectivity), the requirement that the metaverse platforms should be ubiquitously accessible from different locations and devices, and the user's virtual persona remain connected during transitions between virtual worlds and technologies. Interconnectedness and interoperability, which are the ability for different platforms to exchange information and interact, are considered important features of the current metaverse, as it includes many environments (Dionisio, Burns & Gilbert, 2013). This multiplicity of virtual universes is highlighted in the definition of the metaverse proposed by Morgado (2009), who emphasises that it is not a single world, but a plethora of interconnected worlds, an idea also stressed by Lee *et al.* (2021). An unlimited number of consumers can simultaneously experience multiple worlds within the metaverse (Hollensen, Kotler & Opresnik, 2023). The metaverse, as defined by Weinberger (2022), encompasses a variety of environments or worlds, ranging from fully virtual realms to those that intersect or mirror the physical world (Davis *et al.*, 2009). It exists parallel to the physical world, serving as a virtual or digital layer that overlays it (Weinberger, 2022). These diverse metaverse worlds converge into a collective, persistent, and interactive parallel reality (Trunfio & Rossi, 2022). This, in turn, creates an environment in which consumers can use their personal avatars for multitude of activities, including work, entertaining themselves, playing games, and communicating with each other. The immersive experience in the metaverse is delivered by new technologies such as virtual reality, augmented reality, mixed reality, artificial intelligence, and blockchain. These technologies amplify the sense of immersion and realism for avatars and residents, fostering seamless interactions with various products and brands. Within virtual worlds, avatars, assets, content, and currencies exhibit persistence, meaning they retain a permanent presence. These virtual environments continue to operate even when users are offline (Dionisio, Burns & Gilbert, 2013). The analysis of existing publications also points at the other characteristics of the metaverse, which set it apart from its predecessors such as sociality (embracing multiple economic, cultural, and legal systems) and hyper-spatiotemporality (transcending time and space boundaries) (Ning *et al.*, 2021). Although there has been a remarkable increase in the number of academic publications in 2022, the marketing literature concerning the metaverse is still in its early stages. The majority of contributions in this field are focused on the retail sector (Dwivedi *et al.*, 2023).

3. Materials and Methods

3.1. Data Collection

To identify research streams related to marketing in the literature on the metaverse, we used Elsevier's Scopus database. "Scopus is a highly reputed abstract and citation database, that contains significant publications from scholarly journals" (van Eck & Waltman, 2011, p. 2). Scopus encompasses a comprehensive collection of approximately 36,377 titles, with 22,794 active titles and 13,583 inactive titles. These titles are sourced from around 11,678 publishers, and among them, 34,346 are peer-reviewed scientific journals covering various top-level subject fields (Elsevier, 2022). Initially, we also considered the Web of Science (WoS) database, but because of Scopus's wider coverage, the WoS was excluded. As this is a relatively new research subject, we found it crucial to analyse the biggest data set available.

The search query was "TITLE-ABS-KEY (metaverse AND marketing)". This resulted in 60 documents. Next, we limited the initial results to the „business & management”, „communication”, „hospitality, leisure, sport and tourism” fields, which resulted in 52 documents. Next we focused on published articles in English, excluding editorials, reviews and so on. As a result, 42 documents qualified for further analysis. Citation and bibliographic information, abstracts, keywords, and references of the resultant 42 articles were downloaded in a comma separated file (CSV) from the Scopus database.

3.2. Data Analysis

We used Scopus "Analyze search results" tool and VOSviewer 1.6.18 to conduct a series of analyses. "VOSviewer is a freely available software developed for construction, viewing, and presentation of bibliometric maps" (van Eck & Waltman, 2011, p. 1). We used Scopus to identify the most influential authors and countries, and VOSviewer to analyse the keywords, based on their frequency of occurrence and relevance. Based on the results of the analysis of the keywords, a cluster analysis was conducted, which allowed the identification of 6 main research streams in our area of interest.

4. Results

The analysis of results from the Scopus database (Fig. 1) allowed the identification of the first publications mentioning the metaverse in the context of marketing. These early works were published in 2009, concurrent to the popularisation of the Second Life platform. The next publications appeared in 2015 and 2021, and were both devoted to retail. In the years 2022–2023 one observes a dramatic growth in the number of publications on the subject, with almost 40 papers published (works dated 2023 are already available).

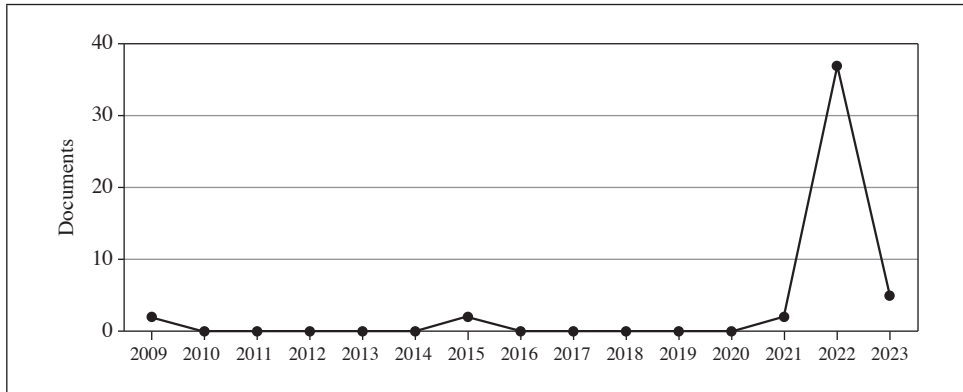


Fig. 1. Number of Documents by Year

Source: Scopus 2022.

Among the publications analysed, the most prolific author was D. Buhalis (Fig. 2), who co-authored 4 articles on the metaverse in the context of marketing. The next was P. A. Rauschanbel, who co-authored 3 articles; the other named authors published at least 2 works on the subject.

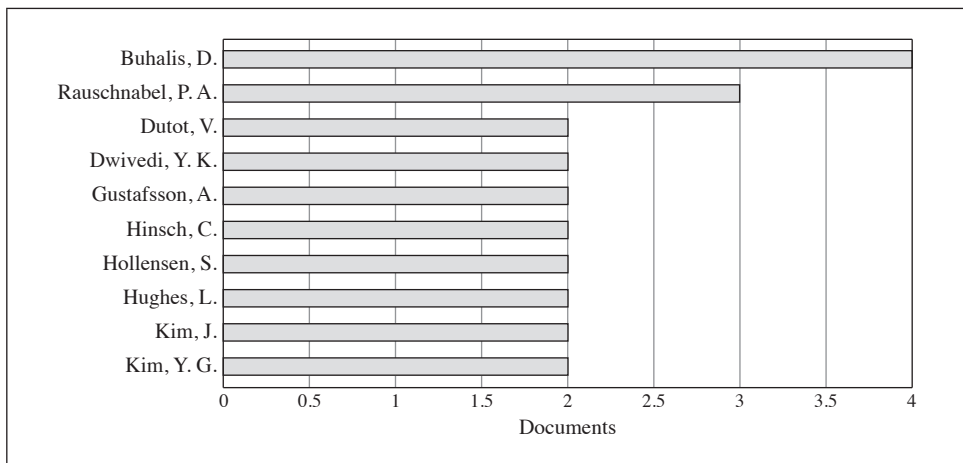


Fig. 2. Documents by Author, Comparison of the Document Counts for up to 15 Authors

Source: Scopus 2022.

The subject of the metaverse attracted most attention from scholars in South Korea, the US, and the UK (Fig. 3).

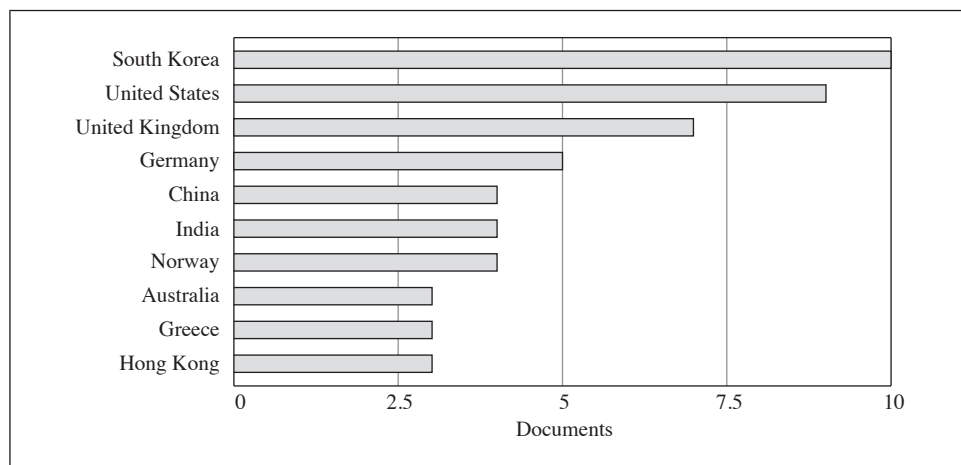


Fig. 3. Documents by Country/Territory

Source: Scopus 2022.

Next, we conducted an analysis of keywords which appeared in the titles and abstracts at least 5 times. 1,657 keywords were analysed, out of which, 63 met the requirements of this study. The assessment of each qualifying keyword's occurrence and relevance involved a specific calculation. Relevance was established by analysing the distribution of (second order) co-occurrences among all noun phrases, which was then compared to the overall distribution of co-occurrences among noun phrases. The Kullback-Leibler distance measured the discrepancy between these distributions, with a larger difference indicating higher relevance for a given noun phrase. Essentially, noun phrases with low relevance, such as "paper", "interesting result", and "new method", which have a general meaning, demonstrated a relatively even distribution of their (second order) co-occurrences (van Eck & Waltman, 2011). 40 keywords with highest relevance were selected for further analysis and grouped with VOSviewer into six clusters (Fig. 4):

- 1) trust, loyalty and engagement in virtual worlds (7 articles),
- 2) conceptualisation of the metaverse and other immersive, extended, augmented, virtual, and mixed realities (8 articles),
- 3) marketing strategy and new generations (10 articles),
- 4) adoption of the metaverse in different contexts and sectors (8 articles),
- 5) hospitality and tourism management (3 articles),
- 6) the concept of metaverse marketing (6 articles).

Cluster 1 (Table 1) includes publications focusing on the presentation of the results of empirical studies of trust, loyalty, emotional and behavioural engagement of users of the metaverse platforms, and blockchain based networks.

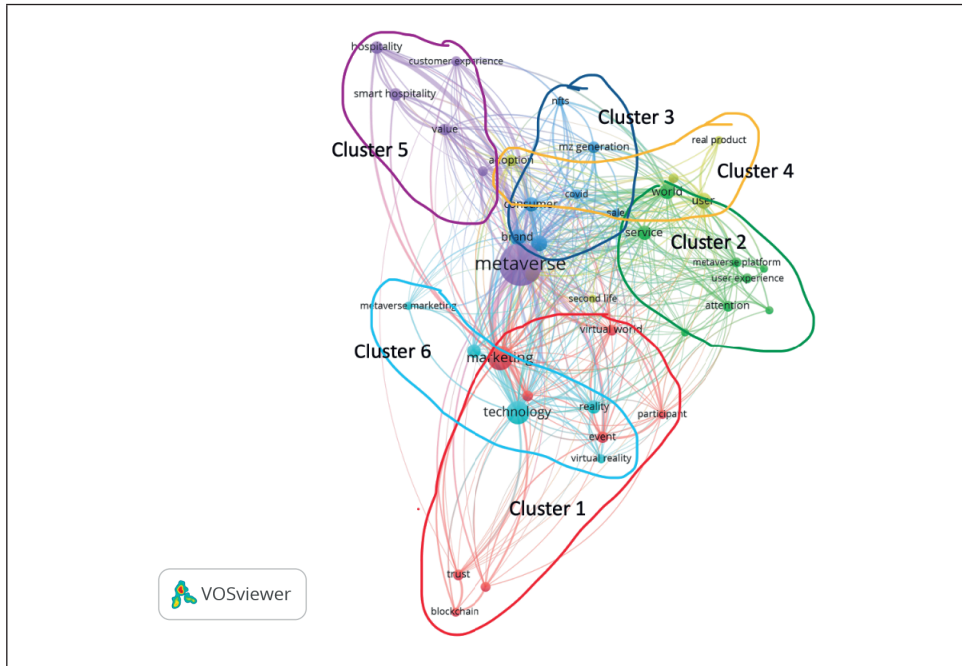


Fig. 4. The Results of Cluster Analysis of the Keywords with VOSviewer
 Source: the authors.

Table 1. Trust, Loyalty and Engagement in Virtual Worlds

Cluster 1	Publications			
Keywords	Authors	Title	Year	Journal
Avatar	Heo, J. <i>et al.</i>	Examining Participant’s Perception of SPICE Factors of Metaverse MICE and Its Impact on Participant’s Loyalty and Behavioral Intentions	2023	<i>Studies in Computational Intelligence</i>
Blockchain	de Brito Silva, M. J. <i>et al.</i>	Avatar Marketing: A Study on the Engagement and Authenticity of Virtual Influencers on Instagram	2022	<i>Social Network Analysis and Mining</i>
Economy	Panagiotakopoulos, D. <i>et al.</i>	Digital Scent Technology: Toward the Internet of Senses and the Metaverse	2022	<i>IT Professional</i>
Event	Jeon, J.-E.	The Effects of User Experience-based Design Innovativeness on User – Metaverse Platform Channel Relationships in South Korea	2021	<i>Journal of Distribution Science</i>

Table 1 cont'd

Cluster 1	Publications			
Keywords	Authors	Title	Year	Journal
Marketing	Tan, T. M., & Saraniemi, S.	Trust in Blockchain-enabled Exchanges: Future Directions in Blockchain Marketing	2022	<i>Journal of the Academy of Marketing Science</i>
Participant	Tan, T. M., & Salo, J.	Ethical Marketing in the Blockchain-based Sharing Economy: Theoretical Integration and Guiding Insights	2023	<i>Journal of Business Ethics</i>
Trust Virtual world	Jeon, Y. A.	Reading Social Media Marketing Messages as Simulated Self within a Metaverse: An Analysis of Gaze and Social Media Engagement Behaviors within a Metaverse Platform	2022	<i>Proceedings – 2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, VRW 2022</i>

Source: the authors, based on VOSviewer.

Cluster 2 (Table 2) consists of articles focusing on presenting the experience of customers of various platforms and technologies aiming at total immersion, which includes augmented reality, virtual reality, extended reality, and a broader conceptualisation encompassing various realities and the metaverse.

Table 2. Conceptualisation of Metaverse and Other Immersive, Extended, Augmented, Virtual and Mixed Realities

Cluster 2	Publications			
Keywords	Authors	Title	Year	Journal
Attention	Ario, M. K. <i>et al.</i>	Towards an Implementation of Immersive Experience Application for Marketing and Promotion through Virtual Exhibition	2022	<i>Software Impacts</i>
Augmented reality	Wagner, R., & Cozmiuc, D.	Extended Reality in Marketing – a Multiple Case Study on Internet of Things Platforms	2022	<i>Information (Switzerland)</i>
Metaverse platform	Rauschnabel, P. A. <i>et al.</i>	What Is Augmented Reality Marketing? Its Definition, Complexity, and Future	2022	<i>Journal of Business Research</i>
Service Social media post	Shim, B. K. <i>et al.</i>	A Study on Software Proposals for Optimization of Augmented Reality Glasses	2022	<i>Communications in Computer and Information Science</i>

Table 2 cnt'd

Cluster 2	Publications			
Keywords	Authors	Title	Year	Journal
Social	Park, S.-M., & Kim, Y.-G.	A Metaverse: Taxonomy, Components, Applications, and Open Challenges	2022	<i>IEEE Access</i>
User experience	Buchholz, F., Oppermann, L., & Prinz, W.	There's More Than One Metaverse	2022	<i>i-com</i>
UXBDI	Dwivedi, Y. K. <i>et al.</i>	Metaverse beyond the Hype: Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy	2022	<i>International Journal of Information Management</i>
World	Havele, A. <i>et al.</i>	The Keys to an Open, Interoperable Metaverse	2022	<i>Proceedings – Web3D 2022: 27th ACM Conference on 3D Web Technology</i>

Source: the authors, based on VOSviewer.

Cluster 3 (Table 3) includes publications focusing on various aspects of marketing strategy in the context of the metaverse, for example brand development, marketing communications strategy (with particular focus on advertising, and content marketing to Z Generation consumers (so called digital natives), considered as the target audience of activities using VR and the metaverse).

Table 3. Marketing Strategy and New Generations

Cluster 3	Publications			
Keywords	Authors	Title	Year	Journal
Brand	Ricoy-Casas, R. M.	The Metaverse as a New Space for Political Communication	2023	<i>Smart Innovation, Systems and Technologies</i>
Consumer	Lee, J., & Kwon, K. H.	Sustainable and Safe Consumer Experience NFTs and Raffles in the Cosmetics Market after COVID-19	2022	<i>Sustainability (Switzerland)</i>
COVID	Bousba, Y., & Arya, V.	Let's Connect in Metaverse. Brand's New Destination to Increase Consumers' Affective Brand Engagement & Their Satisfaction and Advocacy	2022	<i>Journal of Content, Community and Communication</i>

Table 3 cnt'd

Cluster 3	Publications			
Keywords	Authors	Title	Year	Journal
MZ generation	Enriquez, D. R. <i>et al.</i>	Algorithm for Identification and Analysis of Targeted Advertising Used in Trending Topics	2022	<i>Proceedings of the LACCEI International Multi-conference for Engineering, Education and Technology</i>
NFTs	Koay, K. Y. <i>et al.</i>	Social Media Influencer Marketing: Commentary on the Special Issue	2022	<i>Journal of Internet Commerce</i>
Sale	Kim, Y., & Jung, H.	Beauty Industry's Strategic Response to Metaverse Evolution: Focused on Generation MZ	2022	<i>Proceedings – 2022 IEEE/ACIS 7th International Conference on Big Data, Cloud Computing, and Data Science, BCD 2022</i>
Strategy	Chen, C., & Yao, M. Z.	Strategic Use of Immersive Media and Narrative Message in Virtual Marketing: Understanding the Roles of Telepresence and Transportation	2022	<i>Psychology and Marketing</i>
	Patil, K., Bharathi, S. V., & Pramod, D.	Can Metaverse Retail Lead to Purchase Intentions among the Youth? A Stimulus-Organism-Response Theory Perspective	2022	<i>2022 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems, ICETSYS 2022</i>
	Lee, H.-K., Park, S., & Lee, Y.	A Proposal of Virtual Museum Metaverse Content for the MZ Generation	2022	<i>Digital Creativity</i>
	Lee, H. J., & Gu, H. H.	Empirical Research on the Metaverse User Experience of Digital Natives	2022	<i>Sustainability (Switzerland)</i>

Source: the authors, based on VOSviewer.

Cluster 4 (Table 4) includes publications concentrating on the possibilities for the adoption of metaverse technology in selected sectors and contexts, such as health-care, product (furniture) design, retailing and logistics in various countries.

Table 4. Adoption of the Metaverse in Different Contexts and Sectors

Cluster 4	Publications			
Keywords	Authors	Title	Year	Journal
Adoption	Musamih, A. <i>et al.</i>	Metaverse in Healthcare: Applications, Challenges, and Future Directions	2022	<i>IEEE Consumer Electronics Magazine</i>
Person	Arikan, O. U. <i>et al.</i>	Conceptualization of Meta-servitization: 3D Case Study from Furniture Industry	2022	<i>ISMSIT 2022 – 6th International Symposium on Multidisciplinary Studies and Innovative Technologies, Proceedings Proceedings of the International Conferences on e-Health 2015, EH 2015, e-Commerce and Digital Marketing 2015</i>
Product	Hassouneh, D., & Bregman, M.	Metaverse Retailing: Are SVW Users Ready to Buy Real Products from Virtual World Stores?	2015	<i>Proceedings of the International Conferences on e-Health 2015, EH 2015, e-Commerce and Digital Marketing 2015</i>
Real product	Bourlakis, M., Papagiannidis, S., & Li, F.	Retail Spatial Evolution: Paving the Way from Traditional to Metaverse Retailing	2009	<i>Electronic Commerce Research</i>
Second Life	Spivey, W. A., & Munson, J. M.	Mot: Technology Entrepreneurs in Second Life	2009	<i>PICMET: Portland International Center for Management of Engineering and Technology, Proceedings</i>
User experience	Njoku, J. N. <i>et al.</i>	Prospects and Challenges of Metaverse Application in Data-driven Intelligent Transportation Systems	2022	<i>IET Intelligent Transport Systems</i>
	Chinie, C., Oancea, M., & Todea, S.	The Adoption of the Metaverse Concepts in Romania	2022	<i>Management and Marketing</i>

Table 4 cont'd

Cluster 4	Publications			
Keywords	Authors	Title	Year	Journal
	Bian, Y., Leng, J., & Zhao, J. L.	Demystifying Metaverse as a New Paradigm of Enterprise Digitization	2022	<i>Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)</i>

Source: the authors, based on VOSviewer.

Cluster 5 (Table 5) predominantly includes review articles, focusing on applications of the metaverse in tourism and hospitality, with emphasis on identification of future trends and developments.

Table 5. Hospitality and Tourism Management

Cluster 5	Publications			
Keywords	Authors	Title	Year	Journal
Customer experience	Buhalis, D., O'Connor, P., & Leung, R.	Smart Hospitality: From Smart Cities and Smart Tourism towards Agile Business Ecosystems in Networked Destinations	2022	<i>International Journal of Contemporary Hospitality Management</i>
Future Value	Buhalis, D., Lin, M. S., & Leung, D.	Metaverse as a Driver for Customer Experience and Value Co-creation: Implications for Hospitality and Tourism Management and Marketing	2022	<i>International Journal of Contemporary Hospitality Management</i>
Hospitality Metaverse platform, smart hospitality	Gursoy, D., Malodia, S., & Dhir, A.	The Metaverse in the Hospitality and Tourism Industry: An Overview of Current Trends and Future Research Directions	2022	<i>Journal of Hospitality Marketing and Management</i>

Source: the authors, based on VOSviewer.

Cluster 6 (Table 6) consists of publications that analyse the concept of metaverse marketing in the most comprehensive way, presenting it as a new environment for marketing activities and innovative approaches to consumer research.

Table 6. The Concept of Metaverse Marketing

Cluster 6	Publications			
Keywords	Authors	Title	Year	Journal
Internet	Gao, S.	Research on the Innovation of the Internet of Things Business Model under the New Scenario of Metaverse	2022	<i>ACM International Conference Proceeding Series</i>
Metaverse marketing	Sartamorn, S., & Oe, H.	Metaverse Marketing for Community Development: Revitalization of Traditional Industrial Sectors in Thailand	2022	<i>Springer Proceedings in Business and Economics</i>
Reality	Rosenberg, L.	Marketing in the Metaverse and the Need for Consumer Protections	2022	<i>2022 IEEE 13th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference, UEMCON 2022</i>
Technology	Hollensen, S., Kotler, P., & Opresnik, M. O.	Metaverse – the New Marketing Universe	2022	<i>Journal of Business Strategy</i>
Virtual reality	Giang Barrera, K., & Shah, D.	Marketing in the Metaverse: Conceptual Understanding, Framework, and Research Agenda	2023	<i>Journal of Business Research</i>
	Dwivedi, Y. K. <i>et al.</i>	Metaverse Marketing: How the Metaverse Will Shape the Future of Consumer Research and Practice	2022	<i>Psychology and Marketing</i>

Source: the authors, based on VOSviewer.

5. Opportunities for the Application of the Metaverse in Marketing

Both marketing scholars and practitioners are currently engaged in intense debates regarding the marketing implications that may arise from the potential mainstream adoption of the metaverse. Most of the assessment of possible applications of the metaverse to marketing practice is currently found in professional publications. Their authors assume that the adoption of the metaverse by the mainstream would be similar to the Internet (Deloitte, 2022). The wide adoption of the metaverse by companies and their customers, and its eventual technological maturity should allow the full exploitation of the marketing opportunities it offers (Shen *et al.*, 2021). McKinsey & Company (2022) forecasts that the value of direct product sales could reach \$54 billion. The pioneers of marketing in the metaverse are fashion and luxury companies, such as Gucci, which use metaverse platforms to

interact with and engage consumers, as well as for testing it as a new sales channel for virtual products. In a rather fragmented discourse one can identify a few key areas of marketing practice in which the most transformative opportunities are expected. These can be broadly related to product strategy, marketing communications, branding, retail, hospitality and tourism, and marketing research (Dwivedi *et al.*, 2022).

Considering product strategy, the most promising opportunities are expected in the area of product development. This includes not only development of the offerings impossible in the physical world, like new ranges of virtual products, but also improved opportunities for detailed concept and product testing. For example, companies would use the metaverse to quickly test and effectively cost multiple variants of new products, streamlining the process of commercialisation of new products. As for marketing communications, the metaverse is considered a new environment for digital marketing. Companies could test new forms of more personalised and interactive digital advertising – with content and features surpassing currently available media, and customised to a single user. Avatars and virtual influencers in the metaverse could be considered to be the next stage in the evolution of influencer marketing. The metaverse offers seemingly unlimited opportunities for engaging consumers via virtual events such as concerts. To leverage sales, companies could deploy sales promotion activities in the metaverse, such as scavenger hunts and team games. Branding opportunities include using the metaverse to achieve greater awareness and visibility of brands through various promotional activities. The metaverse can serve as either the sole, or an additional brand development and communication environment, depending on the nature of the brand. Specific features of the metaverse, such as 3D, are expected to impact implementation of branding tactics, such as brand content development. Last but not least, the metaverse’s social nature promises more flexible and creative opportunities for development of brand communities – a critical area to build consumer loyalty. From the perspective of retail, the metaverse constitutes a new sales channel with possibilities to test engaging sales formats such as virtual pop-up stores. In the metaverse hospitality and tourism are expected to be a powerful trend (for example events and conferences), building on growing demand and immersive experiences. The metaverse technology permits the possibility to transform hospitality experiences into digital formats, which could be more affordable, “digitally stored”, transferred and sold, surpassing the limitations of service perishability. For industry, it offers not only access to a new sales channel, but also a platform to build entirely new, unique metaverse products. An area which merits particular attention is marketing research. The immersive features of the metaverse should provide enhanced tracking and monitoring opportunities, and allow access to increasingly dense streams of consumer data in real time. Examples include tracking attention, gathering data about physical reactions to various

marketing stimuli, and responses to interactions with objects. As the metaverse should allow for the collection, storage, and processing of real-time big data, it could facilitate the tracking of changes in demand and consumer preferences. The AI technologies could be applied to predict consumer behavioural patterns, and to personalise offers and marketing communications. Availability of granular participant data about behaviours of consumers should result in better consumer insights. The metaverse is considered to be equally well suited for conducting qualitative and quantitative marketing research, enhancing the effectiveness of traditional techniques of data gathering and allowing development of the new, innovative ones. In fact, new measures and data gathering methods should be developed to suit the specific characteristics of the metaverse (Dwivedi *et al.*, 2022). An example of such a novel method is immersive netnography (Kozinets, 2023).

6. Challenges

Regardless of the fundamental question whether the metaverse is just another fad or the next iteration of the Internet, there are many challenges that must be addressed at the very early stage of its development. In our opinion, the first one is to understand the motivations of consumers to use the new technology, and to identify the obstacles to its adoption. This would allow companies (platform owners and their business customers) to overcome the likely technical issues, such as easy to use hardware and software, and user-friendly interfaces. The availability and affordability of VR and AR headsets, and accessories are crucial to mainstream adoption of the metaverse, allowing companies to quickly capitalise on the marketing opportunities it is supposed to offer (Pośpiech, 2022). Another crucial factor is the quality of the metaverse experience itself, including its visual reality and capacity for sensory stimulation without causing sensory or cognitive overload. Without attractive content, enhancing or surpassing the already existing alternatives, as well as a seamless user experience, the adoption of the metaverse by consumers may be slower than envisioned by marketing professionals and scholars. There is widespread agreement that the metaverse, creating new avenues for gathering consumer data, generates considerable threats to consumer privacy, and there is a high likelihood of unethical use of this data. On a more abstract level, the metaverse presents the possibility of not only eliminating the constraints of time and space but also challenging social norms, potentially leading to unregulated actions and anarchy (Dwivedi *et al.*, 2022). With easy creation of a multitude of identities, consumers may use the metaverse to express their frustrations and desires controlled in the real world. Hence, hypothetically, the metaverse can spur the Proteus effect, with their real-life behaviours affected by their digital avatars (Yee, Bailenson & Ducheneaut, 2009).

7. Conclusion

Based on a systematic review of the literature, we have identified six main research streams, within which we have identified research gaps that future work might investigate. Research on the metaverse should address gaps in understanding consumer motivations and adoption barriers, optimising the quality of user experience, addressing privacy and ethical concerns, exploring its impact on social norms and behaviour, and developing innovative methods for consumer research.

Understanding consumer motivations for adopting the metaverse and the obstacles they may encounter, including factors such as ease of use, affordability of hardware, quality of experience, and comparison with existing alternatives, necessitates delving deeper into consumer psychology and behaviour through research.

Assessing the quality of the metaverse experience is essential for understanding its potential appeal to consumers. This includes aspects such as visual realism, sensory stimulation, and user experience design. Research could focus on optimising these factors to ensure a compelling and enjoyable experience for users.

The metaverse presents new challenges in terms of consumer privacy and ethical use of data. Research is needed to explore the potential threats to privacy and ways to mitigate them, as well as ethical guidelines for collecting and using consumer data in the metaverse.

The metaverse has the potential to challenge social norms and influence consumer behaviour in both virtual and real-world settings. Research could investigate how interactions in the metaverse shape attitudes, beliefs, and behaviours.

As the metaverse offers new possibilities for gathering consumer data, research could explore innovative methods for conducting marketing research in this environment. This includes developing new measures and data gathering techniques tailored to the unique characteristics of the metaverse, as well as integrating AI technologies for data analysis and personalisation.

Authors' Contribution

The authors' individual contribution is as follows: Marcin Awdziej 40%, Dagmara Plata-Alf 20%, Jolanta Tkaczyk 40%.

Conflict of Interest

The authors declare no conflict of interest.

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