

# INTERACTIVE AND IMMERSIVE ADVERTISING IN THE METAVERSE: USER PERCEPTIONS AND ENGAGEMENT COMPARED TO TRADITIONAL ONLINE ENVIRONMENTS

András Szeberényi – Soltani Akbar – Najafloo Araz – Róbert Balku

## Abstract

*Despite the growing interest in the Metaverse as a marketing platform, significant gaps remain in understanding how users perceive and engage with advertising in immersive virtual environments. While prior research has explored theoretical frameworks and business strategies for Metaverse advertising, empirical evidence from the user perspective is limited, particularly regarding comparative effectiveness against traditional digital advertising. This study addresses this gap by examining how the immersive and interactive characteristics of the Metaverse influence user engagement and brand experience compared to traditional online marketing environments. An online questionnaire was distributed in Facebook Metaverse groups between November 2024 and January 2025, collecting 252 valid responses primarily from Generation Y and Generation Z users. The survey assessed familiarity with the Metaverse, exposure to advertisements, preferred advertising formats, attitudes toward Metaverse advertising, user engagement intentions, and comparative perceptions of immersion, interactivity, personalization, social influence, and novelty. Data analysis employed descriptive statistics and one-way ANOVA to identify significant differences across demographic groups. Results demonstrate that Metaverse advertising significantly outperforms traditional online advertising across key metrics. Interactive experiences emerged as the most preferred advertising format, with 76.2% of respondents having encountered Metaverse advertisements. Users perceived Metaverse ads as more engaging, more memorable, and less intrusive than traditional online ads. Statistical analysis revealed significant age-related differences: Millennials and Generation Z rated Metaverse advertising as significantly more engaging and memorable than older users. Personalization emerged as the strongest influence factor, followed by novelty and interactivity. These findings contribute empirical evidence to the emerging field of Metaverse marketing by demonstrating quantifiable advantages of immersive advertising. Businesses seeking to leverage Metaverse platforms should prioritize interactive and personalized experiences while targeting younger, digitally native audiences. Future research should examine long-term engagement patterns and cross-cultural differences in Metaverse advertising effectiveness.*

**Keywords:** Metaverse, immersive advertising, virtual and augmented reality, user engagement, interactive marketing

**JEL:** L82, L86, M31, M37

## Introduction

The Metaverse's origins lie in science fiction, but its rise to prominence has been propelled by visionary technologists and pioneering figures in the industry who perceive it as the subsequent advancement of the Internet (Dwivedi et al., 2023). The advent of immersive virtual reality has opened up novel possibilities for user engagement, facilitating socialization, business transactions, and even virtual property ownership. These innovative interactions necessitate inventive advertising strategies that surpass conventional two-dimensional media and exploit the three-dimensional canvases offered by the Metaverse. Sci-fi author Neal Stephenson coined the word "Metaverse" in his 1992 novel "Snow Crash," depicting a 3D virtual world that individuals could inhabit (Lau,

2023). Stephenson's vision has since become a foundational reference point for understanding how virtual reality-based internet platforms might evolve, influencing both academic discourse and industry development (Dwivedi et al., 2023).

The Metaverse has emerged as a revolutionary medium that reshapes human interaction, socialization, and commerce in the ever-changing digital landscape. Research demonstrates that immersive technologies fundamentally alter consumer-brand interactions by creating a sense of presence – the psychological sensation of "being there" in a virtual environment (Hollebeek et al., 2020). This study examines the potential of the Metaverse's immersive and interactive features to transform consumer engagement and brand experience in advertising. In contrast to conventional digital marketing, which typically involves limited interactions through screens and clicks, the Metaverse provides a dynamic and multi-sensory experience that enables users to engage with brands in innovative ways. Recent empirical evidence suggests that immersive advertising creates emotional involvement and enhances brand loyalty significantly beyond what traditional formats can achieve (Kumar et al., 2025). However, challenges persist in translating these theoretical advantages into practical marketing applications across diverse industry sectors, as evidenced by sector-specific studies examining digital marketing adoption barriers (Kurucz et al., 2021).

The effectiveness of Metaverse advertising is closely tied to technological affordances such as telepresence and interactivity. Yang et al. (2024) demonstrated that augmented reality's ability to create telepresence – a user's psychological sense of being physically present in a mediated environment – significantly drives consumer engagement and purchase intention in retail contexts. Their research revealed that the vividness and interactivity attributes of AR create immersive experiences that traditional advertising cannot replicate. Similarly, Hollebeek et al. (2020) proposed a comprehensive framework illustrating how virtual reality integrates throughout the customer journey, from initial awareness to post-purchase stages, suggesting that VR's unique capacity to simulate realistic experiences offers brands unprecedented opportunities to influence consumer decision-making processes at multiple touchpoints.

A research by Eyada (2023) explores the advertising possibilities in the Metaverse, focusing on how companies can incorporate their strategies into this novel and immersive digital realm. This study follows the descriptive approach to explore the Metaverse concept, the potential of advertising in the Metaverse and the possible challenges it would face. The study examines several industries that are utilizing the Metaverse, such as retail, fashion, education, and real estate, demonstrating how these sectors are leading the way in innovation within this domain. Furthermore, it analyses several marketing tactics employed by companies in the Metaverse, including broadcast marketing, engagement marketing, and gamified experiences, with the aim of enhancing customer interaction and brand recognition. Chebab (2025) extends this work by providing comparative empirical analysis of immersive advertising effectiveness, finding that Metaverse-based campaigns generate significantly higher engagement rates and emotional responses compared to conventional digital advertising formats. This study also highlights the need for comprehending consumer behaviour and developing immersive, customized experiences to establish brand loyalty in this novel setting. The paper concludes by proposing tactics for companies to successfully interact with consumers in the Metaverse, emphasizing the need for genuineness, creativity, and a profound comprehension of consumer-brand relationships.

Another interesting research by Li (2023) investigates the applications of advertising within the Metaverse. The study investigates the feasibility of successful implementation of conventional advertising methods in the Metaverse, taking into account its distinctive features including decentralization, shared environments, and immersion. Furthermore, it addresses the obstacles that brands

might encounter, such as concerns in safeguarding user data privacy, protecting intellectual property rights, and managing community dynamics inside the Metaverse. Prados-Castillo et al. (2024) corroborate these concerns through their examination of how the Metaverse impacts consumer behaviour and destination marketing, revealing that while immersive environments enhance user engagement, they also raise critical questions regarding data security, ethical advertising practices, and the need for regulatory frameworks that protect consumers while enabling innovation. The research offers valuable insights for companies seeking to penetrate this developing market and underscores the need for showing respect towards virtual communities and adjusting to new regulatory frameworks.

Despite the comprehensive view and insight provided by the reviewed articles, significant gaps regarding the potential of advertising tools can be seen in them. Dwivedi et al. (2023) conducted an extensive literature review and identified that while theoretical frameworks for Metaverse marketing are emerging, empirical research examining actual user perceptions, attitudes, and behavioural responses to Metaverse advertising remains scarce. In the first research conducted by Eyada (2023), a descriptive method has been used to examine the concept of the Metaverse and the potential of advertising in it and tried to examine successful virtual strategies that can be related to the real world. However, this study lacks primary research, which keeps it away from practical application. Also, in the study conducted by Li (2023), which describe a detailed insight about the successful examples of strategies based on the special natures of Metaverse, lack of primary research that can examine these strategies from the users' point of view is visible. Kumar et al. (2025) emphasize that understanding the route from immersion to emotional responses such as joy is critical for predicting advertising effectiveness, yet most existing studies focus on technical capabilities rather than user-centric evaluations. These gaps highlight the need to conduct initial and practical research in the field of investigating the potential of promotional tools in the Metaverse. By addressing this gap, the present study uses primary research by analyzing questionnaire data collected from Metaverse Facebook groups, which helps to gain important insight about the potential of advertising tools in the Metaverse and their psychological and behavioural effects, especially from the user's point of view.

The main aim of this study is to analyse the potential of Metaverse advertising tools and their application to provide actionable insights for businesses. The purpose of generating this insight is to offer complete empirical analysis that facilitates the development of more effective advertising strategies and campaigns in the Metaverse, as an advanced online environment. Specifically, this research investigates how users perceive Metaverse advertising compared to traditional digital advertising across key dimensions including engagement, memorability, intrusiveness, and the influence of factors such as immersion, interactivity, and personalization.

### ***Marketing in the Metaverse***

The Metaverse is a multi-user, highly immersive and enduring three-dimensional virtual environment that extends across many digital platforms and seamlessly integrates with the physical world. It enables individuals to engage in real-time shopping, work, play, and social activities (Ladis, 2023). The Metaverse is characterized by its persistent nature, which signifies that it exists and evolves without any interruptions or terminations, irrespective of user login status. It is a shared space among users and experiences, rendering it a cohesive and communal environment where each user engages in concurrent activities with others (Rathore, 2018).

Several prominent technology companies are embracing the Metaverse phenomenon. Nvidia Omniverse, Facebook Horizon, and Microsoft's enterprise Metaverse are among the prominent leaders in this wave. Consumer brands like Gucci and Coca-Cola are marketing their nonfungible tokens (NFTs) on Metaverse platforms, such as Decentraland (Kim, 2021). Marketing in virtual worlds increases product applicability and brand recognition. While the notion that a virtual world could be considered natural may appear implausible, in order to remain relevant as consumer behaviours and culture evolve, it is necessary to maintain an active presence on marketing platforms (Megha et al., 2023).

### ***Advertising in the Metaverse***

Utilising this dynamic and interconnected realm of virtual reality allows entities such as organisations, brands, and individuals to transcend conventional limits of engagement and interaction (Rathore, 2018b). Unlike anything else that has been possible, the Metaverse enables brands to provide customers with immersive and interactive experiences. In the Metaverse, brands can create their own virtual world or space that users can explore. This enables brands to maintain control over the customer experience and design a space that is specific to their brand (Moyers, 2023).

Advertising is the non-personal communication of information usually paid for and usually persuasive in nature about products, services, or ideas by identified sponsors through the various media platforms (Bovee & Arens, 1986). Virtual and digital advertising was already established, but, if companies want to participate in the Metaverse, a fresh strategy would be necessary that emphasizes creativity and user experience (Eyada, 2023). The unique features of the Metaverse, including its immersive nature, three-dimensional environment, digital avatars representing individuals, and interactive elements, have a significant influence on the realm of digital advertising. Furthermore, as brands venture into the Metaverse and implement their marketing strategies, it underscores the significance of tackling the matter of advertising within the Metaverse.

### ***Emerging Metaverse Advertising Tools***

Advertising in Metaverse can be conducted in diverse ways, leveraging its distinctive features and tools to enhance effectiveness and cost-efficiency. Here, we will outline the characteristics and tools of advertising in the Metaverse:

*Immersive and interactive advertising:* Immersive advertising is an advertisement (or ad) format that allows consumers to interact with a product or marketing idea directly within the ad, in real time (Kahn, 2023). Interactive ads allow viewers to actively engage with your brand. Consumers are encouraged to take specific action to uncover information revealed in the ad or to visit your website's landing page. Interactive ads attract attention and prompt viewers to pause and interact with engaging content that is both entertaining and beneficial (Von Der Osten, 2023). Interactive ads are created to be dynamic, immersive, and tailored to the consumer's preferences or actions (DevX, 2023). Cross-cultural research on e-advertising has demonstrated that consumers' attitudes toward online advertising are significantly influenced by factors such as informativeness, credibility, and privacy concerns, with entertainment value emerging as a universally positive predictor of engagement regardless of cultural background (Vellayil & Keller, 2020).

*Virtual Storefronts and Product Demos:* Virtual storefronts and product demos offer a creative way for brands to interact with retail buyers and market products using an online platform. They provide an alternative to traditional physical showrooms and trade shows, obviating the necessity for

physical space and samples to showcase new collections (Petkov, 2023). By presenting the products in a three-dimensional format, such as placing them in a showcase or stand, users are afforded the chance to interact with and comprehend the products more effectively, thereby enabling them to make more informed purchasing decisions.

*Virtual Influencer:* A virtual influencer is a computer-generated character produced using computer graphics software. Subsequently, this character is assigned a distinct personality and will consistently engage on social media platforms as though they are influencers (Molenaar, 2024). Virtual influencers are primarily utilized in industries such as luxury, fashion, cosmetics, equipment, tourism, and retail. These industries necessitate stringent management of their public image and adhere to highly specific protocols (Allal-Chérif et al., 2024).

*Targeting and Personalization:* AI-powered personalization in advertising has become a crucial factor in modern marketing strategies. A comprehensive meta-analysis of 114 studies encompassing 11,786 participants confirms that personalized advertising significantly outperforms generic, non-personalized advertising across multiple persuasion metrics (Boerman et al., 2025). The research demonstrates that perceived relevance serves as the primary driver of personalization effectiveness, positively influencing consumer attitudes and behavioral intentions. It works by collecting as much data on customers as possible and then using it to serve ads that are relevant to their interests and needs (Vicente, 2021). Using personalized advertising offers numerous advantages. Primarily, it enables companies to target consumers and specific interest groups with pertinent messages. This enhances the likelihood of responding favourably to the advertisement and being more inclined to make a purchase (Boerman et al., 2025; Teepapal, 2025). Recent empirical research further confirms that advertising strategies incorporating relevant content significantly enhance brand recognition and consumer engagement, with content relevance serving as a critical mediator between advertising design and brand building outcomes (Sharma et al., 2025).

## Materials and methods

This study employed a quantitative research design using an online survey to examine user perceptions and engagement with Metaverse advertising. The primary research approach involved distributing an online questionnaire within Facebook Metaverse groups.

### *Sample and Sampling Strategy*

The study primarily targeted members of Generation Y (born 1981-1996) and Generation Z (born 1997-2012), as these two generational groups represent the most active and engaged users of Metaverse platforms (Dwivedi et al., 2023). However, in the case of Generation Z, only participants born between 1997-2006 were included in the final analysis to ensure all respondents were 18 years or older at the time of data collection. This age-based restriction ensured the reliability and ethical validity of the data collection process but also constitutes a limitation of the present study, as younger individuals potentially active in Metaverse environments were not represented. A convenience sampling method was employed due to the emerging nature of the Metaverse and the need to reach early adopters and interested users. The questionnaire was distributed through Facebook groups dedicated to Metaverse discussions and communities, where members actively engage with virtual reality platforms and related technologies.

## ***Data Collection and Measurement***

The data collection process was conducted between November 2024 and January 2025, providing sufficient time to gather responses from a diverse and relevant participant pool. The survey consisted of 30 questions and collected information from 252 participants regarding their demographics, level of familiarity with the Metaverse, advertising exposure experiences, attitudes toward Metaverse advertisements, and behavioral responses when exposed to such advertisements. Participation was voluntary, and respondents provided informed consent by completing the questionnaire. No personally identifiable information was collected, ensuring anonymity. Respondents could withdraw at any time by closing the survey.

The questionnaire comprised seven main sections aligned with the research questions:

1. Demographics – Age range categorized by generational groups (Generation Y, Generation Z, None of above);
2. Familiarity with Metaverse – 5-point Likert scale ranging from "Not at all familiar" to "Extremely familiar";
3. Frequency of Exposure to Metaverse Advertisements – 5-point Likert scale ranging from "Never" to "Very often";
4. Preferred Advertising Formats – Ranking of five formats, including Interactive experiences (games, challenges), Virtual billboards or displays, Product placement within the environment, Sponsorships of events or locations, Avatar customization items;
5. User Attitudes Toward Metaverse Advertising – Three dimensions (More engaging, Less intrusive, More memorable) measured on 5-point Likert scales comparing Metaverse advertising to traditional online advertising;
6. User Engagement Intentions – Three behavioral intentions (Interact with advertisement, Recall advertisement later, Develop positive feelings toward brand) measured on 5-point likelihood scales;
7. Comparative Influence Factors – Five dimensions (Immersion, Interactivity, Personalization, Social Influence, Novelty) measured on 5-point Likert scales assessing the perceived advantage of Metaverse advertising over traditional formats.

The questionnaire items were developed based on established marketing scales and adapted to the Metaverse context, informed by prior literature (Kumar et al., 2025).

## ***Data Analysis***

The use of a quantitative methodology facilitated the identification of behavioral patterns and attitudes by collecting data from diverse perspectives. This approach provided valuable insights into the potential and effectiveness of advertising tools in the Metaverse. Data analysis and the preparation of visual figures were conducted using Microsoft Excel and IBM SPSS Statistics 27 software. Descriptive analyses included frequency distributions, percentages, means (M), and standard deviations (SD) for all variables. One-way Analysis of Variance (ANOVA) was conducted to examine differences in user engagement and attitudes across age groups and familiarity levels. The F-statistic, degrees of freedom (df1 for between-groups, df2 for within-groups), and p-values were calculated to determine statistical significance. Post-hoc tests (Tukey HSD) were applied where significant differences were detected. Statistical significance was set at  $\alpha=0.05$ .

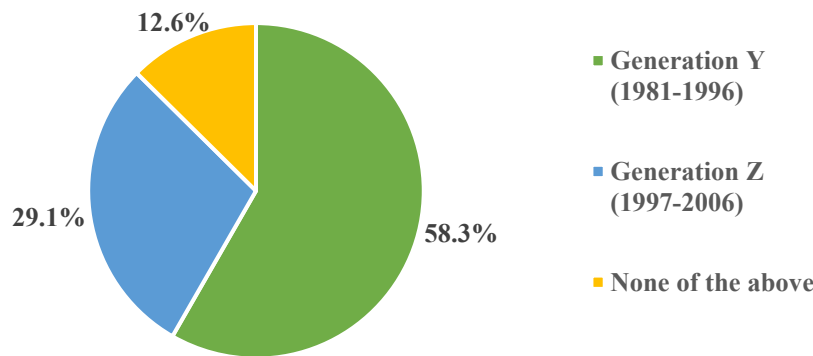
## Research Questions

The research questions guiding this study were as follows:

- RQ1: How does the unique immersive and interactive nature of the Metaverse influence consumer engagement and brand experience in advertising compared to traditional digital marketing environments?
- RQ2: What are the key psychological and behavioral factors affecting user responses to Metaverse advertising?
- RQ3: How do these responses compare to those observed in traditional online environments?

## Results

This section presents the empirical findings derived from the quantitative analysis of 252 valid questionnaire responses. The results are organized according to the research questions, beginning with demographic characteristics and progressing through user familiarity, exposure patterns, advertising format preferences, attitudes, engagement intentions, and comparative influence factors. Understanding the age composition of the participants allows for a more accurate assessment of how generational differences may influence perceptions and attitudes toward advertising in the Metaverse. As the Metaverse primarily attracts younger users who are more technologically adept and open to novel digital experiences, analysing the age distribution offers valuable insight into the representativeness of the sample and the generalizability of the results. Figure 1 presents the age distribution of respondents who participated in the survey.

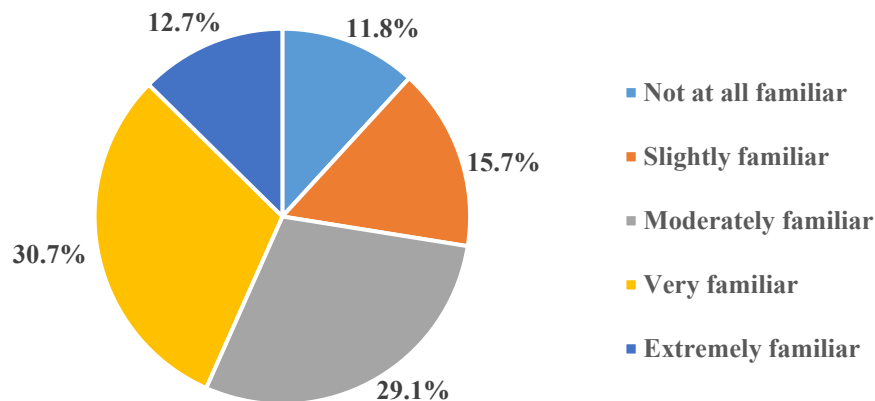


**Figure 1. Age Distribution of Respondents**

*Source: Own edited figure based on primary research, 2025*

As demonstrated in Figure 1, the majority of participants (58.3%) belong to Generation Y (Millennials, born 1981-1996), while 29.1% represent Generation Z (born 1997-2006), and 12.6% selected "None of the above." This distribution aligns with existing research indicating that Millennials and Generation Z constitute the primary user base of Metaverse platforms (Dwivedi et al., 2023), validating the sample's suitability for examining Metaverse advertising effectiveness. The predominance of younger, digitally native users ensures that respondents possess sufficient familiarity with immersive technologies to provide informed evaluations.

In addition to age distribution, the respondents' level of familiarity with the concept of the Metaverse represents a crucial factor in interpreting their attitudes toward Metaverse-based advertising. Since prior knowledge and experience significantly influence how individuals perceive and evaluate immersive environments, measuring familiarity allows for a more accurate understanding of user behaviour and cognitive engagement. Assessing this variable also ensures that the responses reflect informed opinions rather than speculative attitudes. Figure 2 illustrates the degree to which participants reported being familiar with the Metaverse.

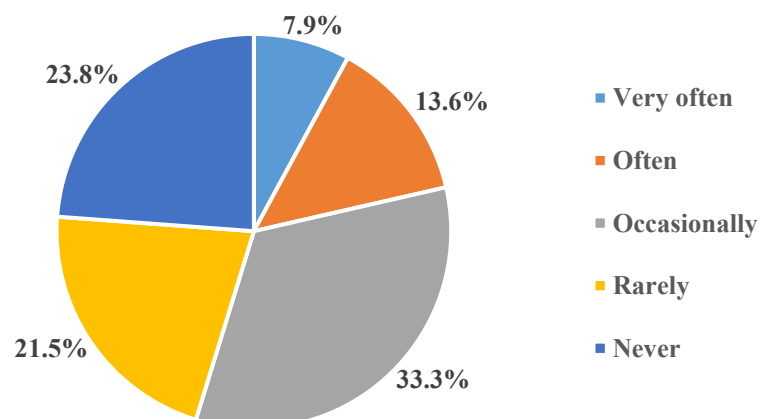


**Figure 2. Respondents' Familiarity with the Concept of the Metaverse**

*Source: Own edited figure based on primary research, 2025*

Understanding respondents' familiarity with the Metaverse was essential to ensure data quality and relevance. As illustrated in Figure 2, most respondents demonstrated at least moderate familiarity with the Metaverse concept. Specifically, 12.7% reported being extremely familiar, 30.7% were very familiar, and 29.1% indicated moderate familiarity. A smaller proportion (15.7%) reported slight familiarity, while 11.8% indicated no familiarity at all. Collectively, 72.5% of participants possessed moderate to extreme familiarity, suggesting that the majority of survey participants had sufficient knowledge to provide meaningful insights regarding Metaverse advertising.

This research examines advertising in the Metaverse as well, necessitating an evaluation of the degree to which users familiar with the Metaverse have encountered advertisements (Figure 3).



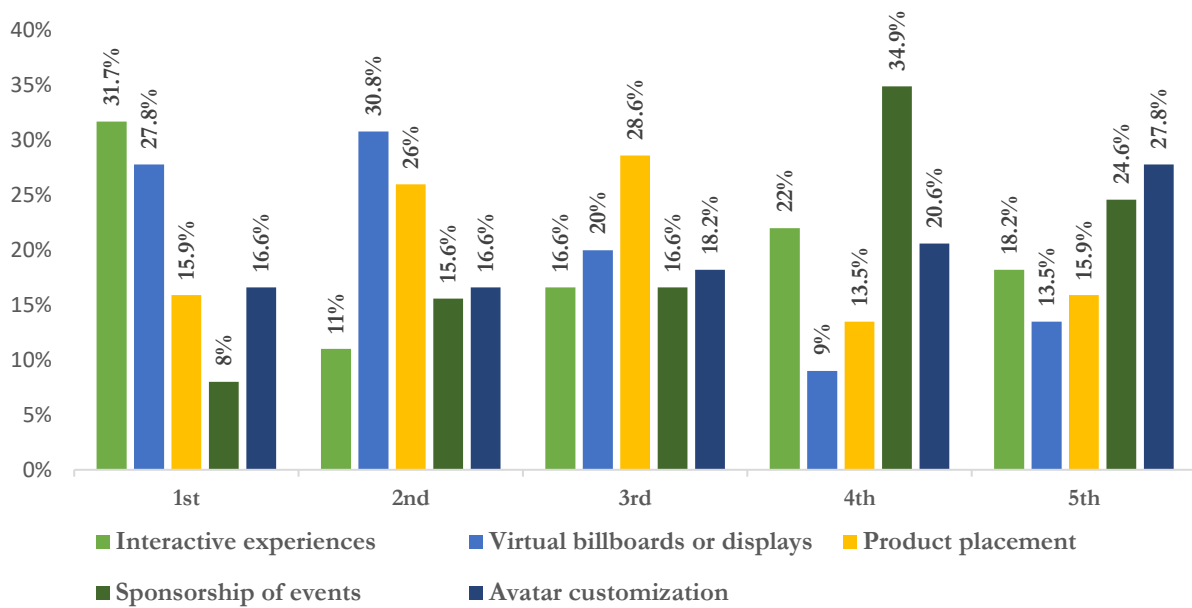
**Figure 3. Frequency of Exposure to Advertisements in the Metaverse**

*Source: Own edited figure based on primary research, 2025*



Respondents were asked about their frequency of exposure to advertisements within Metaverse environments. Figure 3 reveals that 23.8% of the participants reported that they never encountering Metaverse advertisements, while 76.2% had been exposed at least once. Among those with exposure, 21.5% rarely encountered ads, 33.3% occasionally, 13.6% often, and 7.9% very often. These findings indicate that while Metaverse advertising is not yet ubiquitous, a substantial majority of users have experienced commercial content in virtual environments, demonstrating the growing presence of marketing activities in these spaces.

To examine the potential of advertising tools in the Metaverse, it was essential to identify which formats and tools users find more effective and impactful. Respondents were asked to rank their preferred formats in order of preference (Figure 4).

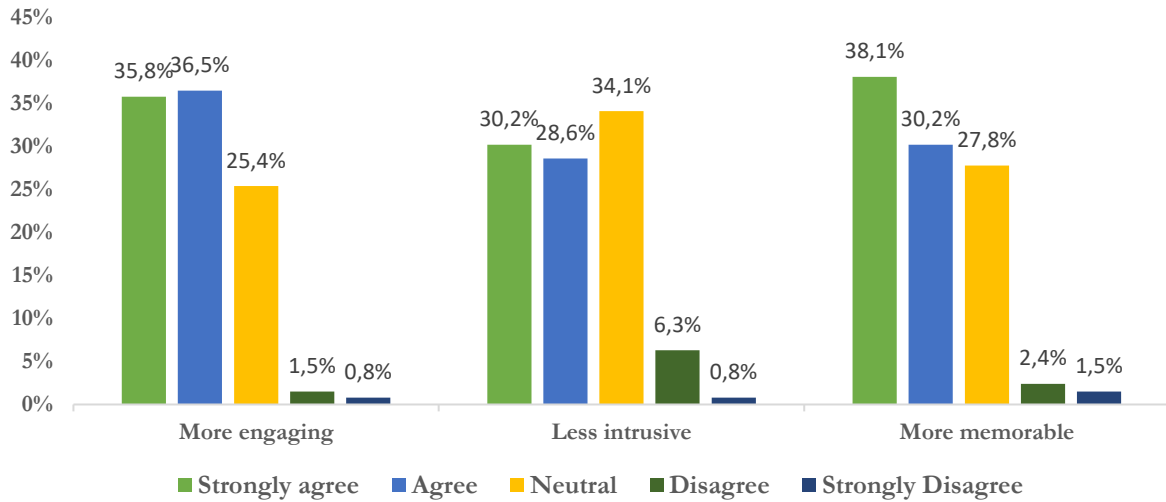


**Figure 4. Preferred Advertising Formats in the Metaverse**

*Source: Own edited figure based on primary research, 2025*

To identify which advertising formats resonate most with users, respondents ranked five types of Metaverse advertisements. Figure 4 displays the aggregated preference scores. Interactive experiences (games and challenges) emerged as the most preferred format, receiving the highest first-choice rankings and the strongest overall preference score. Virtual billboards or displays ranked second, followed by product placement within the environment, sponsorships of events or locations, and avatar customization items. This preference hierarchy underscores the importance of interactivity and user participation in Metaverse advertising strategies, consistent with theoretical frameworks emphasizing immersive engagement.

In the realm of advertising, especially in digital environments, it is essential to evaluate the effectiveness of these advertisements in fostering engagement while reducing intrusiveness. Additionally, the memorability of the advertisement is another key consideration. Respondents evaluated Metaverse advertising compared to traditional online advertising across three attitudinal dimensions: engagement, intrusiveness, and memorability. Figure 5 illustrates the distribution of responses on 5-point Likert scales where 1 means „strongly disagree” and 5 means „strongly agree”.



**Figure 5. User Attitudes Toward Metaverse Advertising Compared to Traditional Online Advertising**

*Source: Own edited figure based on primary research, 2025*

As Figure 5 shows the result, respondents believe that Metaverse advertising offers higher engagement levels, lower intrusiveness, and greater memorability than traditional online advertising. We can see how this revolutionary platform can be effective in the field of advertising. The corresponding statistical results supporting these findings are presented in Table 1.

**Table 1. One-Way ANOVA Result Differences in the Case of User Attitudes Toward Metaverse Advertising**

Variable	Overall Mean	SD	Gen Y (means)	Gen Z (means)	None of the above (means)	F	p-value	Significance
More engaging	4.05	0.87	4.18 (0.79)	4.11 (0.97)	3.31 (0.60)	7.366	0.001	p<0.001
Less intrusive	3.81	0.97	3.88 (1.04)	3.86 (0.95)	3.38 (0.50)	1.869	0.159	not sig.
More Memorable	4.01	0.95	4.11 (0.92)	4.08 (0.98)	3.38 (0.81)	4.286	0.016	p<0.05

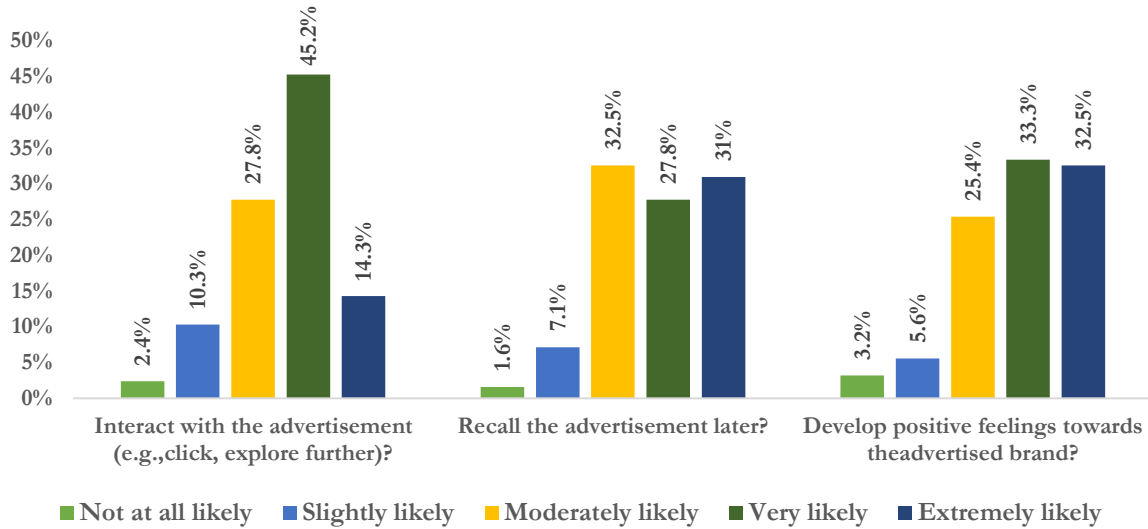
*Note: Values in parentheses are standard deviations. not sig.=not significant. Gen Y=Generation Y (1981-1996), Gen Z=Generation Z (1997-2006). Statistical significance set at  $\alpha=0.05$*

*Source: Own edited figure based on primary research, 2025*

Table 1 presents the overall descriptive statistics for all measured variables. The analysis reveals that respondents exhibited highly positive attitudes toward Metaverse advertising across all dimensions. User attitudes showed strong agreement that Metaverse advertisements are more engaging ( $M=4.05$ ,  $SD=0.87$ ), more memorable ( $M=4.01$ ,  $SD=0.95$ ), and less intrusive ( $M=3.81$ ,  $SD=0.97$ ) compared to traditional online advertising. All three dimensions scored above the midpoint of the 5-point scale, indicating favorable perceptions. Significant age group differences emerged for five variables. User attitudes regarding engagement showed highly significant variation ( $F=7.366$ ,  $p<0.001$ ), with Millennials and Gen Z rating Metaverse advertising as significantly more engaging

than the comparison group. These generational differences align with broader research demonstrating that Generation Z exhibits distinct patterns of conscious consumer behavior and values-based decision-making, particularly in digital consumption contexts (Garai-Fodor, 2021). Memorability also differed significantly across age groups ( $F=4.286$ ,  $p=0.016$ ). No significant differences emerged for perceived intrusiveness ( $F=1.869$ ,  $p=0.159$ ).

Given the importance of advertising's interactive nature, especially in immersive environments like the Metaverse, respondents were asked about various aspects of engagement, including interaction with advertising, recalling them later, and fostering a positive perception of the advertised brand. The results of this question are presented in Figure 6.



**Figure 6. User Engagement with the Advertisement in the Metaverse**

*Source: Own edited figure based on primary research, 2025*

According to Figure 6, most respondents believe that if they encounter advertising in the Metaverse, they are more likely to interact with it. They also believe that they will remember the advertisement later, which shows the memorability of Metaverse advertisements. Finally, a significant number of responses show that users have positive feelings towards the advertised brand when they encounter advertisements in the Metaverse. The corresponding statistical results supporting these findings are presented in Table 2.

**Table 2. One-Way ANOVA Result Differences in the Case of User Engagement Intentions**

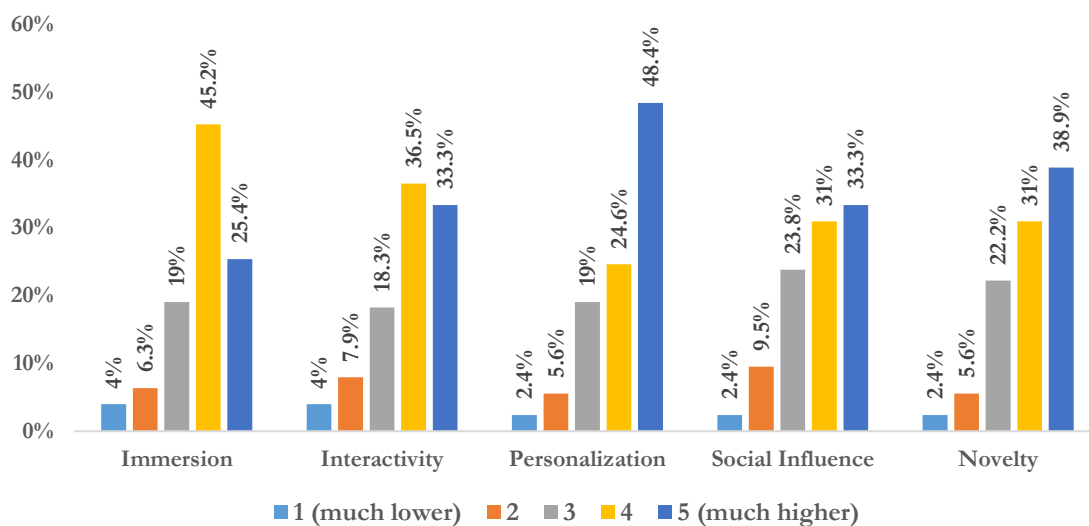
Variable	Overall Mean	SD	Gen Y (means)	Gen Z (means)	None of the above (means)	F	p-value	Significance
Interact with Advertisement	3.59	0.94	3.68 (0.94)	3.62 (1.04)	3.06 (0.44)	3.003	0.053	not sig.
Recall Advertisement	3.79	1.01	3.95 (1.07)	3.81 (0.97)	3.06 (0.44)	5.320	0.006	$p<0.01$
Positive Feelings	3.87	1.04	3.99 (1.07)	3.86 (1.06)	3.31 (0.60)	2.846	0.062	not sig.

*Note: Values in parentheses are standard deviations. not sig.=not significant. Gen Y=Generation Y (1981-1996), Gen Z=Generation Z (1997-2006). Statistical significance set at  $\alpha=0.05$*

*Source: Own edited figure based on primary research, 2025*

Regarding user engagement intentions in Table 2, respondents demonstrated moderate to high likelihood of interacting with Metaverse advertisements ( $M=3.59$ ,  $SD=0.94$ ), recalling them later ( $M=3.79$ ,  $SD=1.01$ ), and developing positive feelings toward advertised brands ( $M=3.87$ ,  $SD=1.04$ ). These scores suggest that users are receptive to engaging with commercial content in virtual environments. Among engagement intentions, advertisement recall demonstrated significant age-related differences ( $F=5.320$ ,  $p=0.006$ ). Post-hoc comparisons indicated that Gen Y exhibited the highest recall likelihood ( $M=3.95$ ), significantly exceeding the "None of the above" group ( $M=3.06$ ). The observed generational disparities in engagement and recall patterns reflect established findings in value-based consumer behavior research, which demonstrates that Generations Y and Z employ fundamentally different cognitive processing mechanisms when evaluating marketing stimuli (Garai-Fodor & Csiszár-Kocsir, 2018).

The Metaverse is a novel environment that holds significant potential for advertising. In this regard, respondents were asked about the impact of its key features – such as immersion, interactivity, personalization, social influence, and novelty – on users compared to traditional online advertising. The findings are presented in Figure 7.



**Figure 7. Comparative Influence of Metaverse Ads vs. Traditional Online Ads**

*Source: Own edited figure based on primary research, 2025*

Regarding the results of Figure 7, it can be stated that Metaverse advertising has the potential to be more impactful than traditional online advertising due to factors like increased immersion, interactivity, and personalization. The novelty of Metaverse itself also plays a role in making these ads stand out. Users perceive Metaverse advertising to be significantly more immersive than traditional online advertising. This aligns with the general understanding of Metaverse as a more immersive virtual environment. Metaverse advertising is seen as more interactive than traditional online advertising. Interactive ad formats like games or challenges can be more engaging than static banner ads. The data suggests Metaverse advertising has the potential for more personalization than traditional online ads. Metaverse platforms might allow for targeted advertising based on user avatars, preferences, or locations within the virtual world. The corresponding statistical results supporting these findings are presented in Table 3.

**Table 3. One-Way ANOVA Result Differences in the Case of Comparative Influence Factors**

Variable	Overall Mean	SD	Gen Y (means)	Gen Z (means)	None of the above (means)	F	p-value	Significance
Immersion	3.82	1.02	3.86 (1.06)	3.86 (1.03)	3.50 (0.73)	0.895	0.411	not sig.
Interactivity	3.87	1.09	3.95 (1.17)	4.00 (0.97)	3.25 (0.77)	3.140	0.047	p<0.05
Personalization	4.11	1.05	4.29 (1.06)	4.03 (1.07)	3.50 (0.73)	4.029	0.020	p<0.05
Social Influence	3.83	1.07	3.95 (1.00)	3.76 (1.23)	3.50 (0.97)	1.272	0.284	not sig.
Novelty	3.98	1.03	4.11 (1.12)	3.81 (0.91)	3.81 (0.75)	1.300	0.276	not sig.

*Note: Values in parentheses are standard deviations. not sig.=not significant. Gen Y=Generation Y (1981-1996), Gen Z=Generation Z (1997-2006). Statistical significance set at  $\alpha=0.05$*

*Source: Own edited figure based on primary research, 2025*

Based on Table 3, comparative influence factors revealed that personalization received the highest rating (M=4.11, SD=1.05), followed by novelty (M=3.98, SD=1.03), interactivity (M=3.87, SD=1.09), social influence (M=3.83, SD=1.07), and immersion (M=3.82, SD=1.02). All five dimensions scored above 3.8, indicating that each factor plays a substantial role in differentiating Metaverse advertising from traditional formats. No significant differences emerged for immersion (p=0.411), social influence (p=0.284), or novelty (p=0.276), indicating these perceptions were relatively consistent across age groups.

## Discussion

According to the presented results, it is clear that advertising tools in Metaverse can provide special opportunities and also significant effectiveness compared to traditional online advertising. These tools provide the opportunity for brands and individuals to provide immersive and personalized experiences to their audience. Metaverse is a new area and its future is unknown, but it will be a valuable tool for companies trying to reach new markets and find new advertising methods.

The first research question – (RQ1) “How does the unique immersive and interactive nature of the Metaverse influence consumer engagement and brand experience in advertising compared to traditional digital marketing environments?” – was answered successfully. The Metaverse represents a novel domain and provides valuable new opportunities for companies seeking innovative advertising methods and access to emerging markets. The immersive and interactive features of Metaverse advertising enable deeper consumer engagement and enhance brand experiences, outperforming conventional online advertisements in terms of audience involvement and personalization (Nagarajan et al., 2023). The popularity of the interactive advertising format clearly shows that Metaverse advertising can be more interactive than traditional online advertising because it engages the user well. This feature of the Metaverse is very important because it somehow removes the limitations. This issue creates great power to implement all kinds of advertisements and use advertising tools. The most important issue that is currently being discussed is the novelty of

Metaverse, which means that it currently has fewer users than the current online platforms and is not a cost-effective choice for advertising, even though it is completely superior in the field of advertising tools.

The second and third research questions – (RQ2) “What are the key psychological and behavioral factors affecting user responses to Metaverse advertising?” and (RQ3) “How do they compare to responses in traditional online environments?” – were successfully answered as well. Metaverse advertisements tend to be less intrusive than those found on conventional websites and social media platforms. Furthermore, the immersive and interactive nature of Metaverse advertisements fosters more positive emotional responses and increases persuasiveness and memorability, leading to greater user engagement compared to traditional online advertisements (Eyada, 2023). It can be because of the interactivity, immersion, and personalisation features of the Metaverse, which allow users to have high engagement with ads, especially those that offer discounts or rewards and are relevant to their interests. the effect of personalisation on increasing the interaction with the advertisement and even recalling the advertisement after seeing it is very important in this context. We need to consider that these ads could be intrusive and annoying if there is no strong regulation to define the rules related to advertising.

## **Implications and recommendations**

The Metaverse’s novelty makes people excited, and currently, people are trying to join the Metaverse because it’s a new area and a new experience, or they can play a game while the main concept of the Metaverse is more than just a game. For this reason, tracking behavioural information may not be affordable at the moment because we need accurate, reliable, up-to-date, and extensive user information to carry out targeted advertising (Nagarajan et al., 2023). However, it seems that due to the rapid growth of technology and the access of more and more users to the Metaverse, this limitation will soon be removed, and these special potentials can be used for professional and effective advertising. The primary barrier to Metaverse advertising converting into actual sales is the platform’s limited user and business base, which prevents the formation of a stable market.

## **Conclusions**

This study set out to answer a fundamental question confronting contemporary marketers: can the Metaverse truly revolutionize advertising, or is it merely another overhyped technological trend destined for the digital graveyard alongside Second Life and Google Glass? The evidence from 252 Metaverse users speaks clearly – immersive virtual environments represent a genuine paradigm shift in how brands can engage consumers, not simply incremental improvement over existing digital channels.

Our research demonstrates three critical advantages that distinguish Metaverse advertising from conventional digital formats. First, users perceive Metaverse advertisements as significantly more engaging than traditional online ads, with statistical analysis confirming that younger demographics exhibit particularly strong positive attitudes ( $F=7.37$ ,  $p<0.001$ ). This finding transcends mere novelty effect, the engagement stems from fundamental psychological mechanisms related to presence and embodied interaction that traditional screen-based advertising cannot replicate.

Second, contrary to widespread concerns about advertising saturation and banner blindness plaguing conventional digital platforms, Metaverse advertising is viewed as less intrusive despite occurring in supposedly "personal" virtual spaces. This counterintuitive finding suggests that when advertisements are contextually integrated into immersive experiences rather than interrupting them, users perceive commercial content as value-adding rather than disruptive. Interactive experiences – particularly gamified challenges and explorable brand environments – emerged as the most preferred format, indicating that participation transforms passive advertising reception into active co-creation.

Third, personalization emerged as the strongest differentiating factor, significantly influencing both Millennials and Gen Z users ( $F=4.03$ ,  $p=0.020$ ). In virtual worlds where avatars represent idealized or alternative selves, personalized advertising resonates more powerfully than in traditional contexts where users remain mere demographic profiles. The Metaverse enables brands to address not just who users are, but who they aspire to become.

From a theoretical perspective, this research extends existing frameworks on immersive advertising (Hollebeek et al., 2020; Kumar et al., 2025) by providing empirical validation of the immersion-to-joy pathway in commercial contexts. Our findings demonstrate that telepresence – the psychological sensation of "being there" in virtual environments – fundamentally alters advertising reception, creating opportunities for emotional engagement unattainable through traditional media. This has significant implications for consumer behavior theory, suggesting that the distinction between "digital" and "physical" consumer experiences is collapsing, replaced by a spectrum of presence intensity that includes virtual worlds as equally "real" from a phenomenological standpoint.

For practitioners, the strategic implications are substantial yet nuanced. Brands cannot simply transpose conventional advertising strategies into Metaverse environments and expect success. Our data reveal that static advertisements – virtual billboards replicating real-world outdoor advertising – ranked significantly lower in user preference than interactive formats. Success in the Metaverse requires rethinking advertising as experiential design rather than message delivery. Brands must become architects of memorable experiences rather than broadcasters of product information.

## References

- Allal-Chérif, O. – Puertas, R. – Carracedo, P. (2024): Intelligent influencer marketing: How AI-powered virtual influencers outperform human influencers. *Technological Forecasting and Social Change*, 200, 123113. <https://doi.org/10.1016/j.techfore.2023.123113>
- Boerman, S. C. – Ye, Y. – Lutz, R. J. (2025): How persuasive is personalized advertising? A meta-analysis. *Journal of Business Research*, 184, 114782. <https://doi.org/10.1080/00218499.2025.2467763>
- Bovee, C. L. – Arens, W. F. (1986): Contemporary advertising (2nd ed.). Homewood, IL: Irwin.
- Chebab, S. (2025): The rise of the Metaverse in marketing strategies: Comparative analysis of immersive advertising effectiveness. *Journal of Contemporary Marketing Science*, 8(1), 58–74. <https://doi.org/10.1108/JCMARS-01-2025-0005>
- DevX. (2023, December 20): Interactive advertising - DevX tech glossary. <https://www.devx.com/terms/interactive-advertising/>
- Dwivedi, Y. K. – Hughes, L. – Wang, Y. – Alalwan, A. A. – Ahn, S. J. – Balakrishnan, J. – Barta, S. – Belk, R. – Buhalis, D. – Dutot, V. – Felix, R. – Filieri, R. – Flavián, C. – Gustafsson, A. – Hinsch, C. – Hollensen, S. – Jain, V. – Kim, J. – Krishen, A. S. – Wirtz, J. (2023): Metaverse

- marketing: How the Metaverse will shape the future of consumer research and practice. *Psychology & Marketing*, 40(4), 750–776. <https://doi.org/10.1002/mar.21767>
- Eyada, B. (2023): Advertising in the Metaverse: Opportunities and challenges. *International Journal of Marketing Studies*, 15(1), 22–35. <https://doi.org/10.5539/ijms.v15n1p22>
- Garai-Fodor, M. – Csiszárík-Kocsir, Á. (2018): Validity of value-based consumer behaviour models in the financial awareness of Generations Y and Z. *Acta Polytechnica Hungarica*, 15(8), 121–136.
- Garai-Fodor, M. (2021). Food consumption patterns, in a values-based approach, for Generation Z. *Acta Polytechnica Hungarica*, 18(11), 117–136.
- Hollebeek, L. D. – Clark, M. K. – Andreassen, T. W. – Sigurdsson, V. – Smith, D. (2020): Virtual reality through the customer journey: Framework and propositions. *Journal of Retailing and Consumer Services*, 55, 102056. <https://doi.org/10.1016/j.jretconser.2020.102056>
- Kahn, G. (2023, July 27): Immersive advertising is the key that unlocks the attention economy. Adweek. <https://www.adweek.com/media/immersive-advertising-is-the-key-that-unlocks-the-attention-economy/>
- Kim, J. (2021): Advertising in the Metaverse: Research agenda. *Journal of Interactive Advertising*, 21(3), 141–144. <https://doi.org/10.1080/15252019.2021.2001273>
- Kumar, R. – Mukherjee, S. – Bose, I. (2025): Metaverse advertising and promotional effectiveness: The route from immersion to joy. *Decision Support Systems*, 189, 114386. <https://doi.org/10.1016/j.dss.2024.114386>
- Kurucz, A. – Pete, D. – Keller, V. (2021): Online marketing lehetőségek és kihívások az autószerelők piacán. *Marketing & Menedzsment*, 55(2), 87–99. <https://doi.org/10.15170/MM.2021.55.02.08>
- Ladis, M. (2023, October 4): Exploring Metaverse Meetings: The Ascension of Next-Gen Virtual Collaboration in the Tech Sector. LinkedIn. <https://www.linkedin.com/pulse/exploring-metaverse-meetings-ascension-next-gen-virtual-marko-ladis>
- Lau, W. (2023, June 9): The Metaverse: What is it? Search Engine Journal. <https://www.searchenginejournal.com/Metaverse/484803/>
- Li, J. (2023): Advertising in the Metaverse. *Advances in Economics Management and Political Sciences*, 18(1), 90–95. <https://doi.org/10.54254/2754-1169/18/20230058>
- Megha, S. – Anju, P. – Aryamol. (2023): *Marketing in the era of the Metaverse*. AIJR Proceedings. <https://doi.org/10.21467/proceedings.160.57>
- Molenaar, K. (2024, January 29): Discover the top 12 virtual influencers for 2024 - listed and ranked! Influencer Marketing Hub. <https://influencermarketinghub.com/virtual-influencers/>
- Nagarajan, G. – Sundhara M. V. – Mohamed, K. A. – Mohideen, S. A. – Mohamed, M. – Ishaq, M. – Lakshmi, R. (2023): The Role Of The Metaverse In Digital Marketing. *Journal for Educators, Teachers and Trainers*, 14(5). 51–59. <https://doi.org/10.47750/jett.2023.14.05.009>
- Petkov, M. (2023, June 20): Gamification in the Metaverse: Transforming brand experiences. Landvault Blog. <https://landvault.io/blog/brands-gamification-Metaverse>
- Prados-Castillo, J. F. – Guaita-Martínez, J. M. – Marques, J. M. (2024): The impact of the Metaverse on consumer behaviour and destination marketing. *ESIC Market Economics and Business Journal*, 55(1), e327. <https://doi.org/10.7200/esicm.55.327>
- Rathore, B. (2018): Metaverse marketing: Novel challenges, opportunities, and strategic approaches. *Economics and Political Sciences Review*, 7(2), 72–82. <https://doi.org/10.56614/eiprmj.v7i2y18.344>
- Sharma, V. – Maheshkar, C. – Mahajan, Y. – Remsei, S. – Kapse, M. (2025): Evaluating the impact of advertising strategies on rural brand building: Insights from the personal care FMCG sector. *Innovative Marketing*, 21(3), 117–127. [https://doi.org/10.21511/im.21\(3\).2025.09](https://doi.org/10.21511/im.21(3).2025.09)



- Teepapal, T. (2025) : AI-driven personalization: Unraveling consumer perceptions and engagement in digital marketing. *Computers in Human Behavior*, 165, 108549. <https://doi.org/10.1016/j.chb.2024.108549>
- Vellayil, J. V. – Keller, V. (2020): Consumer attitude toward e-advertising from an intercultural perspective. *Tér-Gazdaság-Ember (Journal of Region, Economy and Society)*, 8(4), 45–63. <https://tge.sze.hu/tge/article/view/182>
- Vicente, V. (2021, June 18): What are personalized ads, and how do they work? How-To Geek. <https://www.howtogeek.com/730581/what-are-personalized-ads-and-how-do-they-work>
- Von Der Osten, B. (2023, June 20): Why should you include interactive ads in your digital marketing strategy? Rock Content. <https://rockcontent.com/blog/interactive-ads/>
- Yang, J. – Kim, W. – Ambler, N. – Jeong, J. (2024): How AR drives consumer engagement and purchase intention in retail: The critical role of telepresence. *Journal of Retailing and Consumer Services*, 76, 103583. <https://doi.org/10.1016/j.jretconser.2023.103583>

## Authors

András Szeberényi  
ORCID: 0000-0002-1387-0350  
PhD.  
Associate Professor  
Budapest Metropolitan University, Marketing Department  
[aszeberenyi@metropolitan.hu](mailto:aszeberenyi@metropolitan.hu)

Soltani Akbar  
ORCID: 0009-0003-7958-1687  
MSc Student  
Budapest Metropolitan University, Marketing MSc  
[akbarsoltani985@gmail.com](mailto:akbarsoltani985@gmail.com)

Najafloo Araz  
ORCID: 0009-0002-3378-6938  
MSc Student  
Budapest Metropolitan University, Marketing MSc  
[araznajafloo@outlook.com](mailto:araznajafloo@outlook.com)

Róbert Balku  
ORCID: 0009-0000-6684-495X  
MBA Student  
Budapest Metropolitan University, Master of Business Administration MBA  
[robert.balku@gmail.com](mailto:robert.balku@gmail.com)

A műre a Creative Commons 4.0 standard licenc alábbi típusa vonatkozik: [CC-BY-NC-ND-4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)

