

Article

Unravelling Virtual Realities—Gamers’ Perceptions of the Metaverse

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Abstract: In a rapidly evolving digital landscape, the Metaverse emerges as a transformative force, integrating augmented reality, virtual reality, and the internet, to redefine online interactions. This collective virtual shared space promises to revolutionise global collaboration, communication, and information engagement. Our study consisted of the application, through an online form builder, of a questionnaire to Portuguese adult gamers, analysing the results with descriptive statistics. Our research question was the following: how is the Metaverse perceived and represented by gamers? In this context, we trace four objectives: (1) verify the representations of the Metaverse; (2) verify the representations of immersion; (3) verify the representations of the multiverse; and (4) verify the importance of these concepts in daily reality. Our findings explored the Metaverse, immersion, and multiverse concepts, uncovering gamers’ perceptions with emphasis on animation, gaming, and virtual worlds as foundational elements. The Metaverse arises as an evolving force that bridges emotional experiences, offering limitless possibilities for experimentation and exploration.

Keywords: Metaverse; multiverse; virtual world; immersion; gaming

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1. Introduction

In the rapidly evolving landscape of digital technologies, the concept of the Metaverse has emerged as a transformative force, redefining how we interact with and experience the online world [1–6]. The Metaverse represents a collective virtual shared space that integrates augmented reality (AR), virtual reality (VR), and the internet, providing users with immersive, interconnected experiences [1–6]. As we navigate this dynamic digital realm, the Metaverse promises to reshape social interactions, commerce, and entertainment [2,7]. Its importance lies in creating a seamless digital environment and in the potential to revolutionise how we collaborate, communicate, and engage with information on a global scale [1–6].

At the heart of the Metaverse concept is the notion of immersion, a key element that amplifies user experiences to unprecedented levels. Immersive technologies, like virtual and augmented reality, transport individuals into alternate realities, blurring the lines between the physical and digital worlds [8]. The immersive nature of the Metaverse fosters a sense of presence [9], enabling users to engage with content in ways that go beyond traditional interfaces. This sensitive level of engagement can have profound implications across various industries, from education and healthcare to entertainment [2] and business. Immersing oneself in a virtual environment opens new possibilities, marking a paradigm shift in our approach to digital interactions.

As we delve deeper into the digital frontier, the multiverse concept emerges as a compelling extension of the Metaverse, introducing the idea of interconnected and parallel digital universes. The multiverse goes beyond a singular virtual space, envisioning a network of diverse and coexisting digital realms with unique characteristics and rules [2,10]. This concept emphasises the diversity and richness of digital experiences,

accommodating various preferences and interests. In essence, the multiverse amplifies the democratisation of digital spaces, allowing users to explore and engage with content tailored to their preferences [11]. Understanding the significance of the Metaverse, immersion, and multiverse concepts is essential for navigating the evolving landscape of digital experiences and harnessing their potential to shape the future of our interconnected world [2,4].

The intricate interplay between the Metaverse, virtual reality, virtual worlds, immersion, and the multiverse marks a transformative era in our digital interactions [1–6,12]. As users increasingly seek more immersive and interconnected experiences, these concepts collectively contribute to a digital landscape that transcends traditional boundaries, offering a glimpse into the limitless possibilities of the evolving digital frontier [13,14]. In this way, it is necessary to explore the relation of these concepts and how they are perceived by the users (as gamers).

This study is integral to a broader research initiative examining the Metaverse, virtual reality, and gaming concepts. The central question revolves around understanding how gamers perceive and depict the Metaverse. After analysing the literature regarding these concepts, we found a gap to be explored between how adult gamers represent the Metaverse and how they relate it to the multiverse and perception of immersion in virtual worlds. To understand how adult gamers perceive and represent the Metaverse concept, it is important to identify the dimensions that structure it. By identifying these main dimensions, we also unveil intricate connections between the Metaverse and other concepts, providing essential findings for future studies and bridging some gaps with new knowledge.

This research is part of an ongoing PhD program, and the current objectives have been formulated by drawing insights from previous studies [1–5]. The objectives of this study are aligned with the main goals of our PhD thesis—under the supervision of a scientific committee—ensuring a cohesive integration into a larger developmental framework.

And so, we ask: how is the Metaverse perceived and represented by gamers? In this context, we aim to (1) verify the representations of the Metaverse; (2) verify the representations of immersion; (3) verify the representations of the multiverse; and (4) verify the importance of these concepts in daily reality.

This paper has a comprehensive introduction and a concise literature review. Following these sections, we examine the methodology employed to analyse the questionnaire results. Subsequently, we present the findings, followed by a discussion that evaluates the current results. The conclusion incorporates insights from the discussion and offers suggestions for future research endeavours.

2. Background

2.1. Metaverse

Coined by Neal Stephenson in 1992, the Metaverse is defined as a virtual world capable of reaching, interacting with, and influencing human existence [15]. Despite its initial conceptualisation, there exists a lack of consensus on its precise definition, yet there is an anticipation of convergence towards agreement in the future [1,5,16]. The Metaverse is envisioned as a vast dimensional network of interconnected 3D virtual worlds, experienced synchronously and persistently by users, offering a unique sense of presence and data continuity. It allows for social, economic, and cultural engagement through avatars and merges socially immersive virtual realities with online multiplayer platforms, gaming worlds, and augmented reality [17,18].

Proposed as a layer between reality and individuals, the Metaverse is a 3D, virtual, shared world enabling various activities through augmented and virtual reality technologies [19]. Rooted in the physical world but without physical limitations, it facilitates interaction between people through avatars, fostering engagement in social, economic, and cultural activities [20]. It integrates physical and digital virtuality as a post-reality

universe, supporting multisensory interactions compatible with multiplayer online video games [21,22]. The Metaverse can transform digital communication and significantly impact entertainment, education, healthcare, the economy, information, and services [23]. The gaming and education sectors were early adopters, recognising the transformative potential of the Metaverse [24,25].

The Metaverse's evolution is intricately linked to technological advancements, particularly within the gaming world, where success in virtual and augmented reality technologies and animation evolution paved the way for its emergence [26]. There is a growing initiative to materialise the Metaverse, aiming to offer a virtual reality that surpasses the constraints of physical reality in terms of virtual affordances [27–31]. The proposition suggests bridging consumers' imaginations with the natural world [32]. This involves converging social networking and immersive virtual worlds [30] to establish a dynamic space for brands to interact with and continually captivate their audience [31,33–35].

While Neal Stephenson introduced the concept in 1992, ongoing exploration reflects its evolving nature and the volatile dependence on current and future technologies [4,5]. Defined as a game offering an immersive experience through virtual reality technology, the Metaverse creates a layer between individuals and reality, providing a gamified experience [5,36]. Characterised by a top-level hierarchy of persistent virtual spaces that blend with real-life experiences, it allows for the emergence of social, commercial, and personal experiences through technological interfaces [7]. Functioning as a 3D virtual shared world reliant on augmented- and virtual-reality technologies, it eliminates physical interaction limitations among users, fostering engagement in social, economic, and cultural activities [37]. Positioned as a post-reality universe, it represents a multi-user environment supporting multisensory interactions, marked by a mix of elements such as online games, social networking, augmented reality, and virtual reality, accessible through various devices [38–40]. Supported by technology, the Metaverse not only transforms entertainment but also offers significant opportunities in areas such as social services and professional endeavours [1].

Although the Metaverse concept's inception dates back to Neal Stephenson in 1992, it remains an evolving and multifaceted concept with much still to explore [5]. The absence of a consensus definition underscores its dependence on present and future technologies, making predictions about their influence on perceptions, desires, and needs a challenging task [4,41]. Defined as a game that offers an immersive experience through virtual reality technology, the Metaverse creates a layer between individuals and reality, providing a gamified experience [5,36]. Characterised by a top-level hierarchy of persistent virtual spaces that blend with real-life experiences, it allows for the emergence of social, commercial, and personal experiences through technological interfaces [7].

Functioning as a 3D virtual shared world reliant on augmented and virtual reality technologies, it eliminates physical interaction limitations among users, fostering engagement in social, economic, and cultural activities [37]. Positioned as a post-reality universe, it represents a multi-user environment supporting multisensory interactions, marked by a mix of elements such as online games, social networking, augmented reality, and virtual reality, accessible through various devices [38–40]. Supported by technology, the Metaverse not only transforms entertainment but also offers significant opportunities in areas such as social services and professional endeavours [1].

2.2. Virtual Reality and Immersion

Virtual reality, originating from the gaming domain, is characterised by its capacity to substitute human senses with computer-generated data, creating an electronic simulation of diverse environments [13,24,26]. Its immersive experience relies on computer graphics, displays, and interface devices, forming a 3D computer-generated environment representing a new medium enabled by technological advancements [15,42]. Early adopters and technology enthusiasts predominantly embrace virtual reality and related technologies as consumer applications [43–45].

Furthermore, there is a rising trend in deploying these technologies in specialised verticals, as evidenced by their integration in various domains, including studies [45–48]. This technology profoundly impacts human lives, encouraging continuous exploration of technological limits and optimising resources for scientific and technological progress [49]. This immersive technology has critically impacted communication, such as talking over the phone, sharing video messages or participating in an online meeting [50]. Nowadays, the immersive experiences are being implemented as effective marketing tools, creating, for example, a prior experience of tourism destinations [51]. The key elements defining virtual reality include participants, creators, the virtual world, immersion, and interactivity [42]. The concept encompasses various forms, such as cab simulation, projected, augmented, telepresence, and desktop virtual reality [17]. There is also a virtuality continuum (VC) spectrum that categorises immersive technologies as providing a sense of presence or social presence in a range of real or completely virtual environments [52].

Virtual reality's illusionary nature, often regarded as a creation of computers [53], is countered by proponents emphasising its realism, as users can interact with objects with virtual realism, presenting it as a practical and effective communication medium [42]. Virtual environments and ongoing experiences with social interactions acquire life through computer graphics, displays, and interface devices, offering spatiality, immersion, and interaction [15,54,55]. With a focus on creating realistic environments and convincing participants of being in another place, virtual reality proves its efficacy through diverse, immersive tasks accessible anywhere and anytime [15,56,57]. This technology brings high expectations for revolutionising interactions with the digital world [18] and profoundly impacting daily human life by providing varied means to access, view, and analyse data [55].

The Metaverse, dependent on virtual reality technology, owes its existence to the capability of virtual reality to create worlds and environments [41]. Ivan Sutherland's pioneering implementation in 1968 paved the way for virtual reality's integration into daily life, influencing users to accept alternative realities and offering a continuous experience through virtual realms [58]. Virtual reality, a recent concept facilitating existence in imaginary worlds, demonstrates its technological prowess through computer-generated environments that provide immersive experiences across various domains [59,60]. The evidence of its impact lies in the immersive characteristics that replace real-world sensory information, generating a convincing sense of presence [61,62]. With its unique and special immersive systems, virtual reality significantly influences human actions, perceptions of reality, and self-understanding [61,62].

Immersion in virtual reality is defined by its sensory fidelity, relying on the system's rendering software and display technology, representing an objective property of the virtual reality system [63,64]. Successful immersion necessitates the provision of sensorimotor contingencies that enable perception and support natural behaviours, contributing to the illusion of presence and fostering a subjective, experiential engagement [62–64]. Despite its potential to evoke a profound sense of reality, immersion in virtual reality may be perceived as unconventional when viewed with common sense [62].

The concept of presence in virtual reality refers to the tangible feeling that the virtual environment is a kind of reality, with the user's sensations and actions responding to this virtual world rather than the physical reality [65]. It is a subjective and individual response tied to the experience of "being there", allowing for varying levels of presence among users in the same virtual reality environment [61]. Presence can manifest in different forms, including physical, social, and self-presence [9]. A heightened physical presence enables users to abstract themselves from the environment, while social presence involves perceiving virtual social actors as actual social entities. Additionally, self-presence is the psychological connection with a virtual body, contributing to the sense of ownership over that body [9,63].

The relationship between immersion and presence is significant, as a higher level of immersion enhances the sense of presence [62]. Immersion, in this context, depends on

vividness and the realism of representation facilitated by devices [66]. The hardware and software play a crucial role in determining the level of immersion, with the breadth of information (the number of sensory dimensions simultaneously present) being a key factor [13,61]. Collaborative efforts across multiple media contribute to achieving higher levels of immersion, extending beyond traditional input devices like keyboards and mice [13].

For users who can move within the virtual space and comprehend different points of view, the perception of immersion is particularly heightened [67]. The collaborative integration of hardware and software and the richness of sensory dimensions play a crucial role in enhancing the immersive experience and, consequently, the sense of presence [61,64].

2.3. Multiverse vs. Virtual Worlds

The distinction between the multiverse and virtual worlds becomes more apparent when considering their fundamental attributes and underlying concepts.

Virtual worlds are immersive digital environments where users engage in real-time computer-generated simulations. Characterised by their persistent and dynamic nature, these spaces foster a spectrum of social interactions and activities, including forming friendships and conducting property transactions [68]. These worlds, navigated through avatars, serve as shared frameworks where users interact with objects or other users in real-time [69]. As a subset of virtual reality, they provide seemingly real user interactions with three-dimensional elements [70]. Virtual worlds, extending into domains like education and leisure, have become integral to various facets of our lives [71].

These virtual environments, akin to persistent and dynamic computer games, continue to draw in a growing user base and establish alternative legal systems [68]. Their computer-mediated, networked, and spatially navigable characteristics offer avenues for diverse experiences, extending beyond social interactions to encompass activities such as property transactions [72]. Inhabited by avatars, these environments manifest as shared, simulated frameworks that allow users to navigate and interact in real time [69]. These computer-generated simulations, recognised as a subset of virtual reality, incorporate three-dimensional elements, providing users with seemingly real interactions [70]. These virtual worlds, having an immersive nature, are non-pausable, distinguishing them from traditional virtual environments [73].

Delving into a conceptual realm, an intriguing question surfaces: does the Metaverse serve as the creator of the multiverse? Both concepts envision merging digital and real worlds, but remain distinct entities. Acting as a precursor to the multiverse, the Metaverse involves the coexistence of multiple instances in different contexts [74]. The multiverse, introduced by Joseph Pine II and Korn, unfolds as an architectural framework for advanced extended reality (XR) experiences, defined by three variables: Space/No-Space, Time/No-Time, and Matter/No-Matter. This results in eight realms, each providing a unique reality and spanning the entire reality–virtuality continuum [74].

The multiverse comprises multiple independent worlds with minimal shared data, leading to diverse rules, equipment, sign-in systems, and friends lists [10]. The multiverse is described as a collection of distinct digital spaces with unique features, so it diverges from the Metaverse in essential aspects such as definition, ecosystems, flow, properties, and entities [11]. Both the Metaverse and multiverse signify the dynamic evolution of digital experiences, beckoning exploration into infinite possibilities at the intersection of real and virtual realms.

Moreover, the multiverse extends its scope beyond the confines of a single virtual world, serving as an architectural framework tailored for advanced extended reality (XR) experiences, as introduced by Joseph Pine II and Korn [14]. Unlike virtual worlds, the multiverse concept involves multiple independent realms with minimal shared data, resulting in unique rules, equipment, sign-in systems, and friends lists [10]. This intricate

tapestry of digital experiences showcases diverse behaviours and features within separate digital spaces, surpassing the boundaries of individual virtual worlds.

While virtual worlds are immersive digital spaces with shared characteristics and interactions, the multiverse introduces a more complex and interconnected landscape. The multiverse concept envisions a network of independent digital spaces, each offering its own rules and features, contributing to a broader and more diverse digital experience.

3. Methods

3.1. Data Gathering

In this study, we constructed a questionnaire, aligning it with our PhD project (in development) and drawing insights from previous research [1–5]. The main concepts and dimensions identified in earlier studies guided the formulation of questions in the questionnaire, ensuring its validity. This validity was gathered through content validity to ensure the questionnaire items cover the relevant aspects of our study, construct validity, where we used previous studies to compare the construct of our questionnaire, and reliability, using the Cronbach's Alpha to measure the internal consistency. Once finalised, we employed Jotform, an online form builder by Jotform Inc. (San Francisco, CA, USA), to create our survey. Jotform was chosen for its user-friendly interface and effective management capabilities, making it suitable for our purposes. This survey was published by the research unit of which we are a part and was available for anyone to participate in. There were no exclusion criteria, since this was open to anyone who would want, to participate freely. All the participants were considered valid, which was achieved by the Jotform survey, since only if the participant answered all the questionnaires and submitted them, would we have access to their answers. For participants who would abandon or did not answer the questions, the system would not save their answers. Therefore, there were non-invalid participants, and the study's validity was preserved.

Our target audience comprised Portuguese adult gamers. After collecting the data from a sample of participants, we used descriptive statistics for analysis, including frequencies or total responses (N) and percentages (%). This analysis approach facilitated a comprehensive understanding of the responses and their significance within the sample. We also made a diverse number of factorial principal component analyses, or PCAs to explore the structures of the concepts of Metaverse, immersion and multiverse. This allows us to find the core dimensions in a concise and systematic way.

The questionnaire consisted of two sets of questions: the first five focused on demographic information, while the remainder addressed aspects related to the Metaverse, immersion and multiverse concepts. To ensure the reliability and validation of the questionnaire, we applied Cronbach's Alpha ($\alpha = 0.85$). A higher value of Cronbach's Alpha indicates a very strong internal consistency among questionnaire items. We also verified that the correlation among questions was highly statistically significant, affirming the reliability of our data analysis.

3.2. Data Analysis and Results

We had a total of 112 participants, where 62 (55.4%) were female, and 50 (44.6%) were male (see Table 1).

Table 1. Gender.

Gender	N	%
Female	62	55.4
Male	50	44.6

We observed a total of 77 (68.8%) participants of 40 years old or less and 35 (31.8%) of over 40 years old (see Table 2).

Table 2. Age.

Age (Years)	N	%
≤40	77	68.8
>40	35	31.8

With the question “Are you somehow involved with Information Technologies?” we verified that the majority are somehow involved with this technology. The results show that 57 (50.9%) are connected through profession, 10 (8.0%) through studies and profession (working students), 2 (1.8%) through studies, and 1 (0.9%) through profession and leisure; 41 (36.6%) are not connected (see Table 3).

Table 3. Are you somehow involved with Information Technologies?

Connection to Information Technology	N	%
Profession	57	50.9
Other (No)	41	36.6
Working Student	10	8.0
Student	2	1.8
Other (Leisure)	1	0.9
Professional and Leisure	1	0.9

Most participants have a bachelor’s degree (N = 58, 51.8%), followed by a master’s (N = 34, 30.4%), then 12° grade (N = 16, 14.3%) and, finally, a PhD (N = 4, 3.6%) (see Table 4).

Table 4. Academic degree.

Academic Degree	N	%
12° grade	16	14.3
Bachelor	58	51.8
Master	34	30.4
PhD	4	3.6

In our question “How often (approximately) do you play digital games (on mobile phones, consoles, computers, or other digital media)?” (see Table 5), we verified that the participants are frequent players (or gamers), since the majority play daily (N = 63, 56.3%) or weekly (N = 49, 43.8%).

Table 5. How often (approximately) do you play digital games (on mobile phones, consoles, computers, or other digital media)?

How Often	N	%
Daily (very frequently)	63	56.3
Weekly (frequently)	49	43.8
Never	0	0.0
Rarely	0	0.0
Monthly (sometimes)	0	0.0

With the answers to the question “To what extent do you associate the Metaverse with ...”, we observe (Table 6, Figure 1) that the concepts that are most connected to the Metaverse are Concept in Evolution (N = 46, 41.1%), Create New Worlds (N = 50, 44.6%), Fiction (N = 50, 44.6%), Escape social reality (N = 47, 42%), Future (N = 48, 42.9%), Gaming (N = 43, 38.4%), Artificial Intelligence (N = 34, 30.4%), Immersion (N = 43, 38.4%), Innovation (N = 44, 39.3%), Virtual World (N = 46, 41.1%), Multiverse (N = 41, 36.6%), Escape from daily routine (N = 46, 41.1%) and Experience different realities (N = 46, 41.1%). We

can also see some connection to Animation (N = 35, 31.3%), Well-being (N = 37, 33%), Hope (N = 42, 37.5%), Pleasure or Fun (N = 39, 34.8%), Reality (N = 34, 30.4%), Fear or Apprehension (N = 31, 27.7%), Risk or Threat (N = 32, 28.6%), Socialisation (N = 36, 32.1%), Stress (N = 37, 33%) and Possibility of having other friends/family (N = 35, 31.3%). Connection with and acknowledgement of base concepts like Animation, Gaming, Virtual World, Immersion, Multiverse and Reality are linked to the Metaverse. We can see the understanding of possibilities the Metaverse can promote, such as Well-being, Innovation, Pleasure or Fun, Fear or Apprehension, Risk or threat, Socialisation, Stress and Experience of different realities.

Table 6. To what extent do you associate the Metaverse with... (%).

To What Extent Do You Associate the Metaverse with...	Nothing	Little	To Some Extent	Significantly	Very Much
Animation	17.9	11.6	<u>31.3</u>	30.4	8.9
Well-being	25.9	24.1	<u>33.0</u>	15.2	1.8
Concept in Evolution	8.0	15.2	24.1	<u>41.1</u>	11.6
Create new worlds	9.8	8.0	14.3	<u>44.6</u>	23.2
Hope	21.4	21.4	<u>37.5</u>	15.2	4.5
Personal experience	24.1	<u>27.7</u>	24.1	19.6	4.5
Fiction	6.3	5.4	11.6	<u>44.6</u>	32.1
Escape social reality	8.9	6.3	16.1	<u>42.0</u>	26.8
Future	7.1	7.1	25.0	<u>42.9</u>	17.9
Gaming	7.1	10.7	22.3	<u>38.4</u>	21.4
Artificial Intelligence	9.8	8.9	22.3	<u>30.4</u>	28.6
Immersion	11.6	5.4	21.4	<u>38.4</u>	23.2
Innovation	8.9	10.7	14.3	<u>39.3</u>	26.8
Virtual World	6.3	1.8	12.5	<u>41.1</u>	38.4
Multiverse	14.3	7.1	17.0	<u>36.6</u>	25.0
Past	36.6	<u>37.5</u>	17.0	8.0	0.9
Pleasure or Fun	10.7	11.6	<u>34.8</u>	31.3	11.6
Reality	25.9	29.5	<u>30.4</u>	9.8	4.5
Fear or Apprehension	20.5	26.8	<u>27.7</u>	14.3	10.7
Risk or threat	19.6	24.1	<u>28.6</u>	19.6	8.0
Socialisation	18.8	25.0	<u>32.1</u>	19.6	4.5
Stress	20.5	31.3	<u>33.0</u>	11.6	3.6
Desire to live (like an Avatar) in a virtual world	<u>27.7</u>	19.6	21.4	18.8	12.5
Escape daily reality	12.5	11.6	19.6	<u>41.1</u>	15.2
Experience different realities	12.5	7.1	17.9	<u>41.1</u>	21.4
Possibility of having other friends/family	25.9	19.6	<u>31.3</u>	17.0	6.3

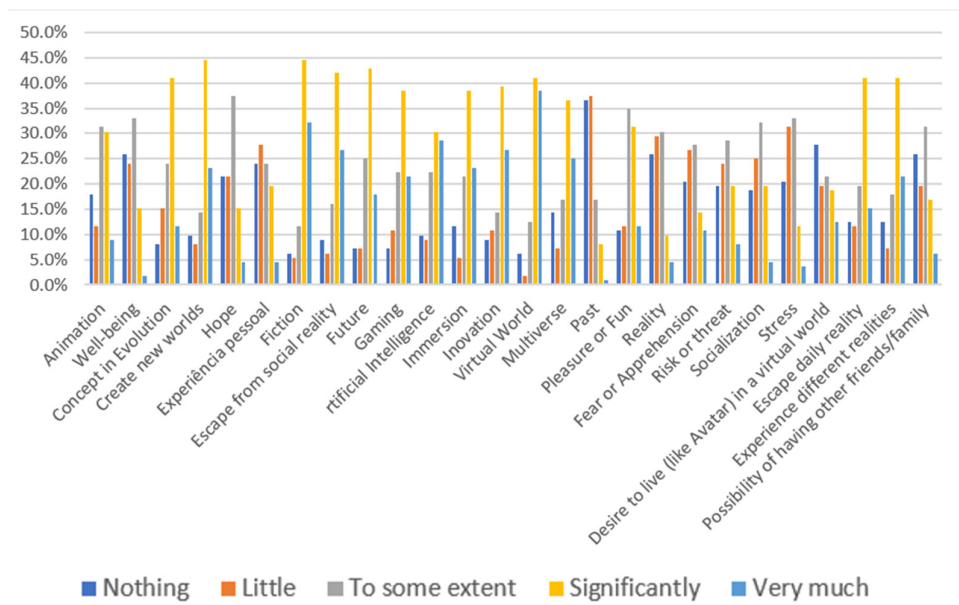


Figure 1. To what extent do you associate the Metaverse with... (%).

We can see in Table 7 (Figure 2), regarding the question “To what extent, in your daily life, is the important...”, that the participants clearly state that Animation (N = 43, 38.4%) and Socialization (N = 47, 42%) are the two most important concepts in their daily lives.

Table 7. To what extent, in your daily life, is the... important (%).

To What Extent, in Your Daily Life, Is the...Important	Nothing	Little	To Some Extent	Significantly	Very Much
Metaverse	<u>42.9</u>	36.6	15.2	5.4	0.0
Gaming	<u>34.8</u>	24.1	15.2	20.5	5.4
Virtual Reality	<u>40.2</u>	33.9	15.2	7.1	3.6
Animation	15.2	9.8	29.5	<u>38.4</u>	7.1
Desire or need for immersion (virtual)	<u>33.0</u>	32.1	24.1	9.8	0.9
Cosplay	<u>55.4</u>	28.6	14.3	0.9	0.9
Virtual World	28.6	<u>34.8</u>	20.5	14.3	1.8
Multiverse	<u>42.9</u>	29.5	16.1	10.7	0.9
Socialisation	6.3	10.7	14.3	<u>42.0</u>	26.8

Through the question, to what extent do you associate the immersion (or being immersed in the game) ... we can observe (Table 8, Figure 3) that the majority of the concepts presented were considered important: Animation (N = 39, 34.8%), Experience new realities (N = 58, 51.8%), Fiction (N = 59, 52.7%), Escape from social reality (N = 57, 50.9%), Escape daily reality (N = 58, 51.8%), Future (N = 40, 35.7%), Gaming (N = 63, 56.3%), Innovation (N = 38, 33.9%), Artificial Intelligence (N = 39, 34.8%), Metaverse (N = 37, 33%), Virtual World (N = 54, 48.2%), Multiverse (N = 40, 35.7%), Pleasure or Fun (N = 44, 39.9%), Satisfaction (N = 40, 35.7%) and Feel integrated (with Avatar) in the virtual world (N = 30, 26.8%). So, we can understand the definition of immersion and its central concepts. We can also see the little connection they attribute to a more emotional acknowledgement, such as Hope (N = 45, 40.2%), Fear or Apprehension (N = 42, 37.5%), Risk or Threat (N = 34, 30.4%), Socialisation (N = 37, 33%) and Stress (N = 36, 32.1%).

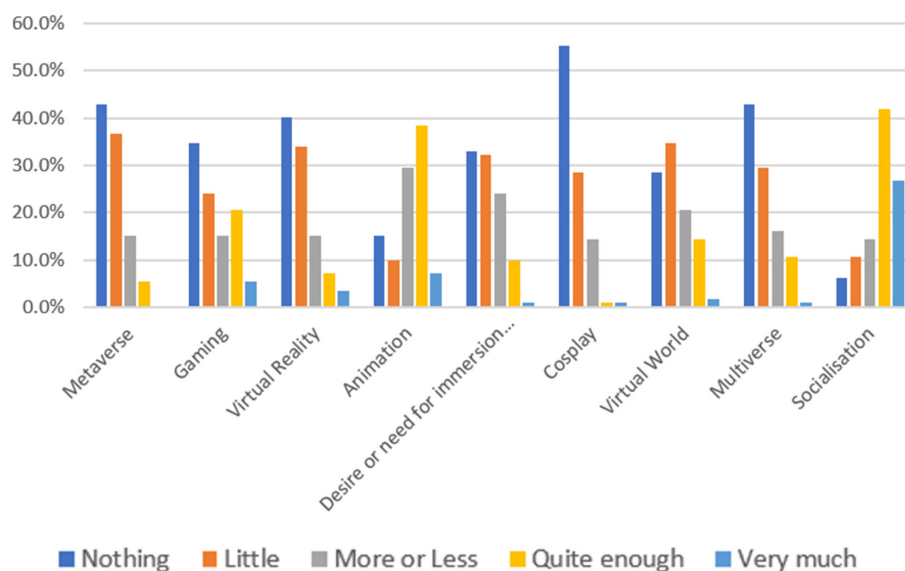


Figure 2. To what extent, in your daily life, is the...important (%).

Table 8. To what extent do you associate the immersion (or being immersed in the game) ... (%).

To What Extent Do You Associate the Immersion (or Being Immersed in the Game) ...	Nothing	Little	To Some Extent	Significantly	Very Much
Animation	10.7	17.0	27.7	<u>34.8</u>	9.8
Well-being	17.0	<u>29.5</u>	<u>29.5</u>	23.2	0.9
Hope	29.5	<u>40.2</u>	20.5	9.8	0.0
Experience new realities	9.8	8.0	17.9	<u>51.8</u>	12.5
Fiction	5.4	3.6	18.8	<u>52.7</u>	19.6
Escape social reality	6.3	8.9	15.2	<u>50.9</u>	18.8
Escape daily reality	6.3	6.3	16.1	<u>51.8</u>	19.6
Future	11.6	11.6	25.9	<u>35.7</u>	15.2
Gaming	6.3	8.0	12.5	<u>56.3</u>	17.0
Innovation	7.1	10.7	30.4	<u>33.9</u>	17.9
Artificial Intelligence	9.8	7.1	26.8	<u>34.8</u>	21.4
Metaverse	6.3	8.9	30.4	<u>33.0</u>	21.4
Virtual World	6.3	3.6	17.0	<u>48.2</u>	25.0
Multiverse	14.3	7.1	23.2	<u>35.7</u>	19.6
Possibility of having other friends/family	24.1	30.4	<u>31.3</u>	13.4	0.9
Pleasure or Fun	10.7	12.5	23.2	<u>39.9</u>	14.3
Reality	27.7	<u>38.4</u>	18.8	12.5	2.7
Fear or Apprehension	25.0	<u>37.5</u>	19.6	10.7	7.1
Risk or threat	25.9	<u>30.4</u>	19.6	17.0	7.1
Satisfaction	15.2	12.5	32.1	<u>35.7</u>	4.5
Feel integrated (with the Avatar) in the virtual world	<u>26.8</u>	17.0	23.2	<u>26.8</u>	6.3
Socialisation	21.4	<u>33.0</u>	23.2	19.6	2.7
Stress	26.8	<u>32.1</u>	26.8	11.6	2.7
Tranquillity	22.3	23.2	<u>44.6</u>	8.9	0.9
Desire to live (like an Avatar) in a virtual world	<u>33.0</u>	19.6	25.0	14.3	8.0

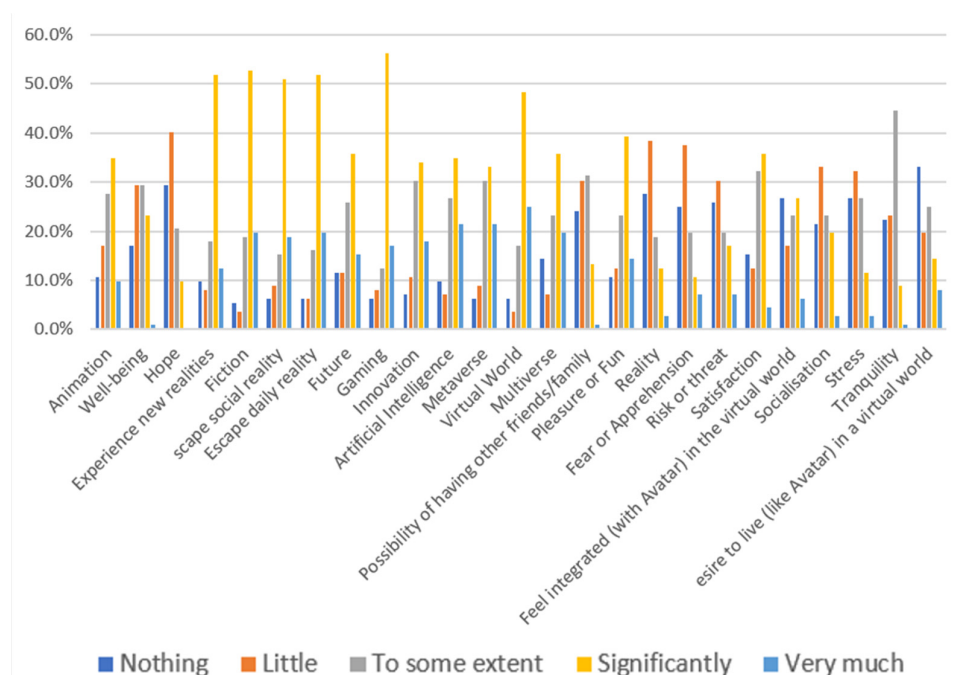


Figure 3. To what extent do you associate the immersion (or being immersed in the game) ... (%).

With the question, “To what extent do you associate the Multiverse to ...”, we can see (Table 9, Figure 4) that the multiverse is perceived as connected to experience different realities (N = 51, 45.5%), Fiction (N = 61, 54.5%), Escape from social reality (N = 46, 41.1%), Escape from daily reality (N = 59, 52.7%), Future (N = 51, 45.5%), Gaming (N = 48, 42.9%), Innovation (N = 45, 40.2%), Artificial Intelligence (N = 45, 40.2%), Metaverse (N = 33, 29.5%), Virtual World (N = 47, 42%), Multiverse (N = 45, 40.2%) and Pleasure or Fun (N = 35, 31.3%). And we can see that the multiverse is not connected to the possibility of having other friends/family (N = 36, 32.1%), feeling integrated (with Avatar) in the virtual world (N = 41, 36.6%), Socialisation (N = 34, 30.4%) and the Desired to live (like Avatar) in a virtual world (N = 44, 39.3%).

Table 9. To what extent do you associate the multiverse with... (%).

To What Extent Do You Associate the Multiverse with...	Nothing	Little	To Some Extent	Significantly	Very Much
Animation	15.2	19.6	<u>29.5</u>	25.0	10.7
Well-being	24.1	27.7	<u>31.3</u>	15.2	1.8
Hope	25.0	<u>35.7</u>	25.9	12.5	0.9
Experience different realities	10.7	8.9	21.4	<u>45.5</u>	13.4
Fiction	6.3	4.5	13.4	<u>54.5</u>	21.4
Escape from social reality	10.7	13.4	20.5	<u>41.1</u>	14.3
Escape from daily reality	11.6	10.7	11.6	<u>52.7</u>	13.4
Future	16.1	7.1	18.8	<u>45.5</u>	15.2
Gaming	14.3	8.9	18.8	<u>42.9</u>	15.2
Innovation	14.3	9.8	21.4	<u>40.2</u>	14.3
Artificial Intelligence	18.8	5.4	22.3	<u>40.2</u>	13.4
Metaverse	18.8	7.1	28.6	<u>29.5</u>	16.1
Virtual World	16.1	5.4	17.9	<u>42.0</u>	18.8
Multiverse	8.9	1.8	19.6	29.5	<u>40.2</u>
Possibility of having other friends/family	<u>32.1</u>	26.8	27.7	11.6	1.8

Pleasure or Fun	16.1	17.9	31.3	31.3	3.6
Reality	28.6	33.9	25.9	8.9	2.7
Fear or Apprehension	24.1	26.8	30.4	13.4	5.4
Risk or threat	23.2	33.0	26.8	11.6	5.4
Satisfaction	20.5	18.8	39.3	17.9	3.6
Feel integrated (with the Avatar) in the virtual world	36.6	14.3	23.2	20.5	5.4
Socialisation	30.4	26.8	29.5	12.5	0.9
Stress	28.6	31.3	25.9	10.7	3.6
Tranquillity	26.8	29.5	29.5	12.5	1.8
Desire to live (like an Avatar) in a virtual world	39.3	13.4	17.9	21.4	8.0

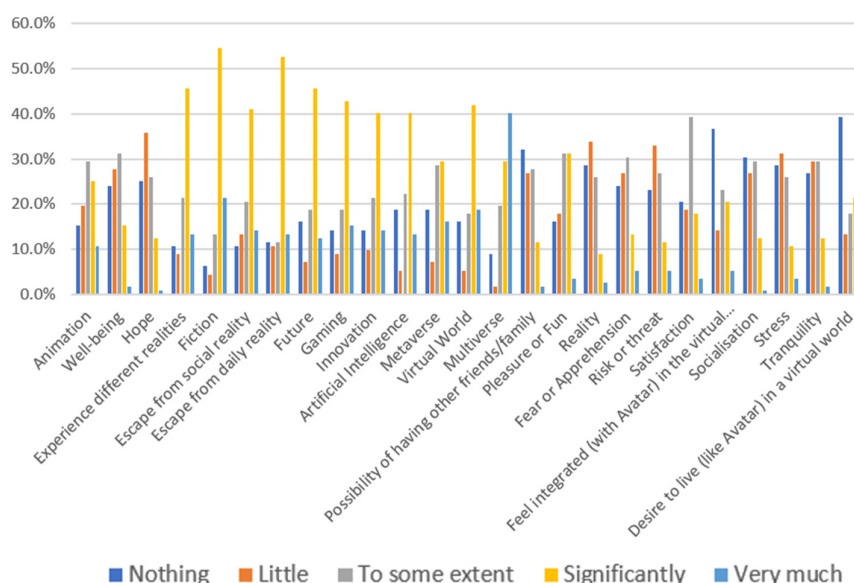


Figure 4. To what extent do you associate the multiverse with... (%).

To help us understand the relationship between the concepts of Metaverse, immersion and multiverse, we have performed a diverse number of factorial principal component analyses, or PCAs (Tables 10 and 11). During this analysis, we removed some non-discriminant variables—items with a loading lower than 0.50 in all factors—and mixed items—items that had loadings higher than 0.50 in two or more factors. Animation is not considered a factor because it is a transversal concept to all the other concepts—and that is why in our PCA this item did not appear significantly associated with any other item, resulting in an isolated item—which can also be explained by the fact that there would not be a Metaverse without this concept.

This analysis has a strong KMO = 0.842 (<0.001), and we have identified eight factors/dimensions (F1, F2, F3, F4, F5, F6, F7, and F8), which explain 71.7% of the total variance.

The F1 dimension is related to well-being with life and has a 38.2% total variance explained and an $\alpha = 0.936$. We observe the importance of the immersion concept on well-being, the feeling of being integrated, and how it influences a gamer's potential desire to be in a multiverse alternative. It is also possible to see apprehension in understanding or integrating a Multiverse perspective, but the desire to explore virtual worlds brings new hope and a desire to experience these.

The F2 dimension is related to technological innovation concepts and has a 7.8% total variance explained and an $\alpha = 0.946$. We can see the correlation and importance of

concepts such as virtual worlds, multiverse, Metaverse artificial intelligence, and gaming being among them, as well as an understanding of the importance of these in Innovation and Future reality.

The F3 dimension is related to emotional responses and has a 7.5% total variance explained and an $\alpha = 0.936$. Although there is a possible risk of diving into a multiverse reality, there is a feeling of satisfaction and tranquillity brought by this new reality and the feeling of being immersed in it.

The F4 dimension is related to escaping realities and has a 5.4% total variance explained and an $\alpha = 0.909$. It clearly shows us the importance of the immersion concept in potentializing a feeling of escape from the reality of daily life that is brought by the virtual world through fiction and gaming-world realities.

The F5 dimension is related to experiences and has a 4.1% total variance explained and an $\alpha = 0.916$. We observe the importance of the virtual worlds in the Metaverse concept, and that the help of the immersion feeling can lead to the experience of new realities, bringing feelings of fun and pleasure to the users.

The F6 dimension is related to personal experiences (well-being and past representations) and has a 3.8% total variance explained and an $\alpha = 0.852$. It is a clear expression of the personal experiences and the background each user brings when interacting with concepts such as the Metaverse and multiverse.

The F7 dimension is related to socialisation. Its total variance is explained by 2.732% and it has an $\alpha = 0.764$.

The F8 dimension is related to fiction concepts and has a 2.303% total variance explained and an $\alpha = 0.608$.

Table 10. Factorial structure of Metaverse, immersion and multiverse concepts.

Dimensions of Metaverse, Immersion and Multiverse Concepts									
Items	F1	F2	F3	F4	F5	F6	F7	F8	
Immersion ... Well-being	0.812	0.137	0.058	0.049	0.219	−0.078	0.038	0.005	0.058
Immersion ... Feel integrated in the virtual world	0.774	0.101	0.185	0.238	0.139	0.025	0.081	0.104	−0.024
Immersion ... Desire to live in a virtual world	0.741	0.020	0.067	0.117	0.135	0.311	−0.038	0.058	0.159
Multiverse ... Fear or Apprehension	0.691	0.107	0.269	−0.003	0.129	0.139	0.145	0.057	0.165
Multiverse ... Feel integrated in the virtual world	0.685	0.330	0.138	0.255	−0.011	0.170	0.079	0.164	−0.290
Immersion ... Reality	0.675	0.216	0.056	0.220	0.163	−0.205	0.275	0.158	−0.031
Multiverse ... Desire to live in a virtual world	0.673	0.243	0.180	0.167	−0.041	0.357	−0.032	0.096	−0.174
Multiverse ... Hope	0.672	0.407	0.104	0.167	0.014	0.240	0.059	0.033	−0.338
Immersion ... Hope	0.658	0.211	0.180	0.019	0.085	0.317	0.157	−0.161	0.066
Immersion ... Fear or Apprehension	0.652	0.128	0.202	0.000	0.113	0.192	0.131	−0.044	0.347
Immersion ... Animation	0.652	0.153	−0.034	0.263	0.337	−0.126	0.192	0.117	0.108
Multiverse ... Experience different realities	0.565	0.312	0.102	0.142	0.029	0.395	0.104	−0.023	−0.086
Immersion ... Experience different realities	0.501	0.240	−0.007	0.477	0.133	−0.017	0.343	0.113	0.125
Multiverse ... Virtual world	0.233	0.826	0.110	0.068	0.185	0.116	0.107	0.101	0.061
Multiverse ... Multiverse	0.135	0.804	0.048	0.118	0.288	0.065	−0.041	0.067	0.126
Multiverse ... Metaverse	0.267	0.735	0.268	0.214	0.249	0.030	0.059	−0.007	−0.176
Immersion ... Multiverse	0.193	0.677	0.177	0.380	−0.066	0.168	0.037	0.078	0.360
Multiverse ... Innovation	0.195	0.667	0.156	0.191	0.247	−0.014	−0.002	0.209	−0.125
Multiverse ... Artificial Intelligence	0.412	0.643	0.153	0.235	0.230	0.065	0.264	0.169	−0.075
Immersion ... Artificial Intelligence	0.174	0.631	0.229	0.394	0.290	0.047	−0.097	−0.103	0.101
Multiverse ... Gaming	0.237	0.600	0.211	0.277	0.258	0.100	0.240	0.176	−0.013
Multiverse ... Escaped from daily routine reality	0.011	0.588	0.136	0.485	0.100	0.258	0.075	−0.065	0.085
Multiverse ... Reality	0.528	0.546	0.095	0.275	0.055	0.051	0.134	0.135	−0.143
Multiverse ... Well-being	0.299	0.521	0.068	0.089	0.067	0.025	0.092	0.468	−0.267
Metaverse ... Multiverse	0.069	0.518	0.063	0.118	0.053	0.420	0.098	0.408	0.284

Immersion ... Future	0.242	0.488	0.085	0.375	0.246	0.083	0.153	−0.049	0.244
Multiverse ... Risk or Threat	0.199	0.121	0.889	0.104	0.083	−0.075	0.114	0.067	0.056
Multiverse ... Satisfaction	0.136	0.090	0.876	0.137	0.103	−0.082	0.111	0.045	0.017
Immersion ... Risk or Threat	0.134	0.168	0.863	0.085	−0.088	0.051	0.020	−0.029	0.016
Immersion ... Satisfaction	0.039	0.216	0.844	0.134	−0.017	0.119	0.040	−0.067	−0.021
Multiverse ... Tranquillity	0.108	0.056	0.827	0.094	0.106	0.039	0.102	0.090	0.062
Immersion ... Tranquillity	0.166	0.059	0.809	0.084	0.039	−0.014	−0.049	−0.010	−0.045
Metaverse ... Fear or Apprehension	−0.014	0.093	0.653	0.001	0.356	0.349	0.017	0.080	0.000
Metaverse ... Stress	0.047	0.073	0.636	−0.111	0.148	0.307	−0.061	0.306	−0.038
Immersion ... Escape from daily routine reality	0.097	0.169	0.117	0.890	0.115	0.011	0.088	0.065	−0.057
Immersion ... Escape from social reality	0.041	0.196	0.074	0.886	0.115	0.085	0.028	0.012	−0.036
Immersion ... Fiction	0.208	0.269	0.118	0.769	0.090	−0.042	0.099	0.082	0.038
Immersion ... Gaming	0.314	0.148	0.014	0.637	0.201	−0.076	−0.069	0.128	−0.067
Immersion ... Virtual World	0.251	0.347	0.122	0.636	0.127	−0.045	0.061	0.036	0.360
Metaverse ... Escape from social reality	0.027	0.062	0.310	0.533	0.462	0.192	0.013	0.229	0.024
Multiverse ... Fiction	0.372	0.400	0.106	0.499	0.165	−0.017	0.363	0.218	−0.032
Metaverse ... Virtual world	0.159	0.304	0.063	0.084	0.760	−0.042	0.021	0.292	0.112
Immersion ... Immersion	0.392	0.067	0.003	0.150	0.708	0.119	0.128	−0.017	0.114
Metaverse ... Artificial Intelligence	0.006	0.485	0.188	0.073	0.678	0.070	−0.020	0.094	0.014
Metaverse ... Escape from daily reality	0.028	0.148	0.206	0.358	0.625	0.285	0.212	−0.023	−0.262
Metaverse ... Gaming	0.135	0.194	0.122	0.171	0.615	−0.002	0.021	0.220	−0.041
Metaverse ... Innovation	0.337	0.364	0.099	0.172	0.585	0.169	0.258	0.128	0.121
Metaverse ... Experience different realities	0.294	0.255	0.122	0.256	0.560	0.180	0.452	0.058	−0.090
Metaverse ... Pleasure or Fun	0.289	0.321	−0.033	0.167	0.524	0.206	0.380	0.161	−0.016
Metaverse ... Past	0.159	0.085	0.054	0.041	0.085	0.784	0.086	0.067	−0.002
Metaverse ... Well-being	0.509	0.220	0.071	−0.027	0.244	0.573	0.049	0.056	0.012
Multiverse ... Stress	0.433	0.049	0.222	0.262	0.007	0.507	0.292	0.126	−0.008
Metaverse ... Reality	0.470	0.190	0.062	−0.097	0.331	0.505	0.243	0.015	0.193
Metaverse ... Personal Experience	0.427	0.184	0.086	−0.049	0.338	0.490	0.194	0.013	0.100
Metaverse ... Possibility of having other family/friends	0.226	0.069	0.043	0.106	0.316	0.321	0.711	0.020	0.001
Immersion ... Possibility of having other family/friends	0.368	0.136	0.326	0.112	0.124	0.083	0.636	−0.066	0.083
Metaverse ... Fiction	−0.101	0.206	0.187	0.302	0.255	0.003	0.066	0.716	0.113
Metaverse ... Animation	0.367	0.097	0.070	−0.034	0.294	0.195	−0.078	0.666	−0.092
Immersion ... Metaverse	0.150	0.435	0.072	0.498	0.101	0.171	0.036	−0.039	0.525

In the next Table 11, we can see the alpha (α) values to assess the scale's reliability. Almost all the factors have a very good score (F1, F2, F3, F4, F5, and F6), which indicates that the items on the scale are very consistent, or are measuring the same underlying concept, making the scale reliable, and accurately measuring what is intended to measure. F7 has a good alpha score. The median alpha (α) value for F8 is common, because this factor explains a smaller portion of the variance in the data, and it includes fewer items than the previous ones. However, this does not mean it is unimportant or irrelevant—it just means that it might not be as strongly interrelated as the previous factors.

Table 11. Explained variance and Alpha (α) for internal dimensions.

Dimensions	Eigenvalues	Explained Variance (%)	Cumulative (%)	Alpha (α)
F1	9.22	38.118	38.118	0.936
F2	7.79	7.818	45.937	0.946
F3	6.26	7.454	53.390	0.936
F4	6.15	5.355	58.745	0.909
F5	5.24	4.068	62.813	0.916

F6	3.53	3.823	66.636	0.852
F7	2.43	2.732	69.368	0.764
F8	2.18	2.303	71.671	0.608

4. Discussion

Our results provided essential findings regarding the Metaverse representations and perceptions with other concepts such as immersion and multiverse. It also gave us insights into the Metaverse concept in a daily routine.

Regarding our first objective, verifying the representations of the Metaverse, we can see a clear view from the gamer participants in identifying the central concepts essential for the Metaverse existence, such as animation, gaming, and the virtual world. Animation because it is the concept that allows the transformation of our reality, empathising the virtual reality as the creator of dreams [75]. Animation combines itself with the gaming world in transforming other realities [3], creating new types of communication [76], evidencing that the gaming world is the founder of the Metaverse [3,59]. The virtual world emerges from the alternative realities brought by the gaming industry [3], which also shows us that this concept is not new to gamers' perceptions, confirmed by previous studies [5].

According to our second objective, to verify the representations of the immersion concept, we can also see a connection to the key concepts such as animation, gaming, Metaverse, and virtual world and key ideas such as pleasure and fun and feeling integrated (with the Avatar) into the virtual world. So, the participants understand the concept of presence in the virtual reality provided by the Metaverse. This presence allows the user to have sensations and actions responding as if they were in a typical reality [65], enhancing the sense of presence [62] in their "being there" experience [61], which is possible using diverse devices [66]. Collaborative efforts with multiple media promote higher levels of immersion [13], such as animation, gaming, and virtual reality concepts with technological advancements. The participants also showed us their acknowledgement of self-presence and connection to a virtual body [9,63] by identifying the feeling of being integrated (with the Avatar) in a virtual world.

For our third objective, to verify the representations of the multiverse, we could see a connection to main concepts such as animation, the gaming Metaverse, and the virtual world. There was also a higher connection for a fiction idea. However, the participants understand the general idea, and there is evident confusion regarding this concept's definition. Although they have some similarities, the multiverse is not a virtual world, but involves multiple independent realms [10]. It diverges from the Metaverse concept in essential aspects [11]; however, it uses extended reality (XR) experiences [14] through the entertainment area, allowing the user to bring down barriers between what is or is not real [2] through its multiple dimensions through the environment and characters, allowing "virtual reality" experiences [2] in the multiverse of the Metaverse [2].

For the last objective, to verify the influence of these concepts in daily reality, the participants showed us a non-conscient awareness regarding the presence of concepts such as virtual reality, gaming or the Metaverse. They only referred to animation and socialisation. However, the Metaverse can be experienced through the internet with augmented reality devices, game consoles, computers, tablets or a simple mobile phone [40].

Our findings show that the Metaverse concept has a long way to go before creating its complete definitions [2,5,77]. The course of its development depends on the technological development.

We consider it crucial to continue exploring these concepts and their relations and definitions in future research, possibly using alternative methodologies or research approaches. We also highlight that it is important to continue exploring the entertainment area, such as gaming or others, to understand the emerging concepts or essential elements. Future research may also consider other case studies comparing different populations.

5. Theoretical and Practical Implications

From this study's findings we derive important theoretical and practical implications about the Metaverse, immersion and the multiverse, which may contribute to the gaming industry.

Considering the theoretical implications, our study sheds light on several aspects, such as Metaverse representations as the gamers recognize its key components, including animation, gaming, and the virtual world. Animation, in particular, acts as a bridge between reality and virtuality, emphasising the Metaverse's dreamlike creation. This understanding aligns with previous research, affirming that gamers are familiar with these concepts [3,5]. Immersion concepts develop as the participants grasp the concept of presence within the Metaverse, where sensations and actions mimic real-world experiences. Collaborative efforts across media (animation, gaming, and virtual reality) enhance immersion. The feeling of being integrated (with an Avatar) in a virtual world further contributes to this sense of presence [9,63]. With regard to multiverse definitions, while there is confusion, participants associate the multiverse with animation, gaming, and the virtual world. However, the multiverse diverges from the Metaverse by involving multiple independent realms. It leverages extended reality (XR) experiences, breaking down barriers between real and virtual dimensions [2,14].

Our findings are focused on developing, enhancing and exploring these concepts, which can be directed to the gaming industry and have practical implications. As the Metaverse evolves, game developers can leverage animation and virtual reality to create immersive experiences. Understanding the Metaverse's foundational concepts (e.g., animation) will guide game design [3,59]. Enhanced immersion game designers can enhance immersion by integrating diverse media (animation, gaming, and virtual reality). Devices like VR headsets and consoles play a crucial role in achieving heightened presence [65,66]. With regard to multiverse exploration, while distinct from the Metaverse, the multiverse offers unique storytelling opportunities. Game narratives can explore multiple dimensions, blurring the lines between real and fictional worlds [2,11].

As for the contributions to the gaming industry we can highlight the technological advancements, while the Metaverse's success hinges on technological progress. Continued exploration of animation, gaming, and XR will shape its development. For user experience, gamers can access the Metaverse through various devices (the internet, AR, and consoles). Game developers should prioritise seamless integration and user-friendly experiences. Future research and further studies should refine definitions, explore relations, and employ alternative methodologies. Continued investigation of entertainment areas (including gaming) will enrich our understanding of these concepts.

Our research highlights the Metaverse's complexity, emphasising the need for ongoing exploration and collaboration across disciplines. The gaming industry stands at the forefront of this transformative digital frontier, shaping engaging virtual worlds and alternate realities [2,5,77].

6. Research Limitations

Although the number of participants in this study constitutes a significant sample, we must mention that a larger sample could have given more insights. The number of questions, whether large or few, can also be considered a limitation and something that can be explored for future research. Another limitation found can be the type of gamers, as a sample with more-frequent or less-frequent players could bring more insights.

7. Conclusions

In conclusion, our study delved into the intricate realms of the Metaverse, shedding light on its representations, perceptions, and interconnectedness with concepts like immersion, the virtual world, and the multiverse. The insights gleaned from gamer participants vividly outlined the foundational elements crucial for the existence of the

Metaverse, emphasising the pivotal role of animation, gaming, and the virtual world. As a transformative force, animation aligns with the gaming world, giving rise to alternative realities and new forms of communication, solidifying the gaming realm as the Metaverse's originator.

The perception of immersion strongly connects with the concepts of animation, gaming, the Metaverse, and the virtual world. Participants revealed a nuanced understanding of presence within the Metaverse's virtual reality. This heightened presence, facilitated by diverse devices and collaborative media efforts, showcased the immersive potential of animation, gaming, and virtual reality concepts. It is also possible to see the animation's importance and transversal influence on all concepts, as well as the clear factor that without animation there would not be a Metaverse.

Our study uncovered associations with animation, gaming, the Metaverse, and the virtual world, accompanied by a prevalent fiction element. Despite some conceptual confusion, it became evident that gamers comprehend the multiverse, distinguishing it from the Metaverse by multiple independent realms. The multiverse harnesses extended-reality experiences within the entertainment domain, dismantling barriers between real and virtual dimensions.

As for the influence of these concepts on daily reality, participants exhibited an awareness limited to animation and socialisation, overlooking the broader impact of virtual reality, gaming, or the Metaverse, showing that the Metaverse offers exploration and experimentation that connect the virtual world with the social reality. Our findings underscore the evolving nature of the Metaverse concept, signalling a prolonged journey toward comprehensive definitions. The trajectory of its development remains intertwined with technological advancements.

Focusing on our research question: how is the Metaverse perceived and represented by gamers? We confirm that the Metaverse is something technological, using virtual reality, immersion, virtual worlds, and multiverse concepts through the entertainment area of the gaming and animation industry.

The idea of a future concept is still present, perhaps because of the novelty and the long development it still needs. Other essential aspects are emotional factors such as well-being, pleasure and fun, fear or apprehension, risk or threat, and stress, all promoted more or less within the social experience or by escaping daily social reality by experiencing different realities.

The main key ideas presented by the participants are those according to findings in previous studies [1–5], and they allow us to go deeper into the understanding of the Metaverse concepts by adding on the definition that it can be a bridge that will enable us to explore and experiment with different emotions in a conscious or unconscious way, giving us an extra layer of immersion through our emotional well-being. This virtual experience will enable us to grow and adapt to our new board controls, giving our lives new meanings to continue dreaming, exploring, or building through virtual technological realities.

Our study invites a relentless pursuit of understanding these dynamic concepts, fostering collaboration and innovation in the ever-evolving landscape of digital experiences. The Metaverse holds limitless possibilities, and our continued exploration will shape its trajectory and redefine the boundaries between the real and the virtual. As Ralph Waldo Emerson wisely stated, "All life is an experiment. The more experiments you make, the better" [78]. Our journey is an ongoing experiment in the Metaverse realm, urging us to embrace the infinite possibilities that await through this multiverse of virtual worlds.

Author Contributions: Conceptualisation, M.C. and A.O.; methodology, M.C. and A.O.; validation, A.O.; investigation M.C.; resources, M.C.; data curation, M.C.; writing—original draft preparation, M.C. and A.O.; writing—review and editing, M.C. and A.O.; supervision, A.O. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement: This study follows the typical guidelines from an ethics committee for this type of study. The intention was not to analyse or measure behaviours, but to verify and interpret the users' perceptions, i.e., their opinions on their feelings or thoughts about the films and concepts presented. Our participants were adults; they were well-informed about the study's main objectives and that we only use their data for scientific purposes. In this context, they freely agreed to the terms presented and gave their written consent to participate in the present study. For these reasons, formal consulting with an ethical committee was unnecessary.

Informed Consent Statement: We obtained informed consent from all subjects involved in the study. It is essential to note that before answering the questionnaire, all the participants were well informed, on a protocol page, that they could carefully read about the study's primary objectives from the University research reference, and their participation was voluntary and confidential. In this protocol, we also informed each participant how long it would take to fill out the whole questionnaire, and that they could choose not to answer—or not proceed to the questions—or quit at any time. Additionally, we presented email references for any possible inquiry about the questionnaire or the research. Afterwards, at the bottom of the page, the participants needed to respond (Yes/No) if they had read and understood the information previously described and if they agreed to participate in this study and answer the following questions. In sum, and to avoid any doubt, we mentioned again that all the answers were anonymous and confidential and that they could withdraw at any time. If the participants answered yes, registering their consent and free will, they had access to the questionnaire and participated in the study. If not, they did not have access to the questionnaire. In any case, we thanked them for the time they spent.

Data Availability Statement: Data are contained within the article.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Cruz, M.; Oliveira, A.; Pinheiro, A. Meeting Ourselves or Other Sides of Us?—Meta-Analysis of the Metaverse. *Informatics* **2023**, *10*, 47. <https://doi.org/10.3390/informatics10020047>.
2. Cruz, M.; Oliveira, A.; Pinheiro, A. Faraway, so Close: Perceptions of the Metaverse on the Edge of Madness. *Computers* **2024**, *13*, 19. <https://doi.org/10.3390/computers13010019>.
3. Cruz, M.; Oliveira, A.; Pinheiro, A. Flowing through Virtual Animated Worlds—Perceptions of the Metaverse. In Proceedings of the 2022 Euro-Asia Conference on Frontiers of Computer Science and Information Technology (FCSIT), Beijing, China, 16–18 December 2022; pp. 241–245.
4. Cruz, M.; Oliveira, A. Hi Doctor Strange! Play it again, and discover the Metaverse: Perceptions of the Metaverse among Gamers. In Proceedings of the 2023 18th Iberian Conference on Information Systems and Technologies (CISTI), Aveiro, Portugal, 20–23 June 2023.
5. Oliveira, A.; Cruz, M. Virtually Connected in a Multiverse of Madness?—Perceptions of Gaming, Animation, and Metaverse. *Appl. Sci.* **2023**, *13*, 8573. <https://doi.org/10.3390/app13158573>.
6. Cruz, M.; Oliveira, A. Where Are We Now?—Exploring the Metaverse Representations to Find Digital Twins. *Electronics* **2024**, *13*, 1984. <https://doi.org/10.3390/electronics13101984>.
7. Hackl, C. Defining the Metaverse Today. Available online: <https://www.forbes.com/sites/cathyhackl/2021/05/02/defining-the-metaverse-today/> (accessed on 12 February 2023).
8. Alang, N. Opinion | Facebook Wants to Move to 'the Metaverse'—Here's What That Is, and Why You Should Be Worried. Available online: <https://www.thestar.com/business/opinion/2021/10/23/facebook-wants-to-move-to-the-metaverse-heres-what-that-is-and-why-you-should-be-worried.html> (accessed on 5 February 2023).
9. Lee, K.M. Presence, Explicated. *Commun. Theory* **2004**, *14*, 27–50. <https://doi.org/10.1111/j.1468-2885.2004.tb00302.x>.
10. Lawton, G. Metaverse vs. Multiverse vs. Omniverse: Key Differences | TechTarget. Available online: <https://www.techtarget.com/searchcio/tip/Metaverse-vs-multiverse-vs-omniverse-Key-differences> (accessed on 1 August 2023).
11. Marquis, E. Metaverse vs Multiverse—What's the Difference? *ICUC* **2022**. Available online: <https://icuc.social/resources/blog/metaverse-vs-multiverse-whats-the-difference/> (accessed on 14 March 2024).
12. Pinheiro, A.; Oliveira, A.; Alturas, B.; Cruz, M. Digital Games Adopted by Adults—A Documental Approach through Meta-Analysis. *Information* **2024**, *15*, 155. <https://doi.org/10.3390/info15030155>.
13. Steuer, J. Defining Virtual Reality: Dimensions Determining Telepresence. *J. Commun.* **1992**, *42*, 73–93. <https://doi.org/10.1111/j.1460-2466.1992.tb00812.x>.
14. Pine, B.J.; Korn, K. *Infinite Possibility: Creating Customer Value on the Digital Frontier*, 1st ed.; A BK business book; Berrett-Koehler Publishers: San Francisco, CA, USA, 2011; ISBN 978-1-60509-564-6.
15. Pan, Z.; Cheok, A.D.; Yang, H.; Zhu, J.; Shi, J. Virtual Reality and Mixed Reality for Virtual Learning Environments. *Comput. Graph.* **2006**, *30*, 20–28. <https://doi.org/10.1016/j.cag.2005.10.004>.

16. Ball, M. *The Metaverse: And How It Will Revolutionize Everything*; W W NORTON & CO: New York, NY, USA, 2022; ISBN 978-1-324-09203-2.
17. Zheng, J.M.; Chan, K.W.; Gibson, I. Virtual Reality. *IEEE Potentials* **1998**, *17*, 20–23. <https://doi.org/10.1109/45.666641>.
18. Xiong, J.; Hsiang, E.-L.; He, Z.; Zhan, T.; Wu, S.-T. Augmented Reality and Virtual Reality Displays: Emerging Technologies and Future Perspectives. *Light Sci. Appl.* **2021**, *10*, 216. <https://doi.org/10.1038/s41377-021-00658-8>.
19. Sicart, M. *Play Matters*; Reprint edição.; MIT Press: Cambridge, MA, USA; London, UK, 2017; ISBN 978-0-262-53451-2.
20. Isbister, K. *How Games Move Us (Playful Thinking): Emotion by Design*; Reprint edição.; MIT Press: Cambridge, MA, USA; London, UK, 2017; ISBN 978-0-262-53445-1.
21. Mandryk, R.L.; Inkpen, K.M. Physiological Indicators for the Evaluation of Co-Located Collaborative Play. In Proceedings of the CSCW 04 Proceedings of 2004 ACM Conference on Computer-Supported Cooperative Work, Chicago, IL, USA, 6–10 November 2004; pp. 6–10. <https://doi.org/10.1145/1031607.1031625>.
22. Macaranas, A.; Venolia, G.; Inkpen, K.; Tang, J. Sharing Experiences over Video: Watching Video Programs Together at a Distance. In *Human-Computer Interaction—INTERACT Cape Town*; Springer: Berlin/Heidelberg, Germany, 2013; pp. 73–90. https://doi.org/10.1007/978-3-642-40498-6_5.
23. Stenros, J.; Paavilainen, J.; Mäyrä, F. The Many Faces of Sociability and Social Play in Games. In Proceedings of the MindTrek 2009—13th International Academic MindTrek Conference: Everyday Life in the Ubiquitous Era, New York, NY, USA, 30 September–2 October 2009; pp. 82–89. <https://doi.org/10.1145/1621841.1621857>.
24. Yoh, M.-S. The Reality of Virtual Reality. In Proceedings of the Seventh International Conference on Virtual Systems and Multimedia, Berkeley, CA, USA, 25 October 2001; pp. 666–674.
25. Waters, R. Satya Nadella: ‘Being Great at Game Building Gives Us Permission to Build the next Internet’. Available online: <https://www.ft.com/content/7d2a185c-7ab1-4fb2-80ca-aaa1fa7267ba> (accessed on 4 March 2024).
26. Heim, M. *Virtual Realism*; Oxford University Press: Oxford, UK, 2000; ISBN 978-0-19-513874-0.
27. Gibson, J.J. *The Ecological Approach to Visual Perception: Classic Edition*; Psychology Press: London, UK, 2014; ISBN 978-1-317-57938-0.
28. Kolesnichenko, A.; McVeigh-Schultz, J.; Isbister, K. Understanding Emerging Design Practices for Avatar Systems in the Commercial Social VR Ecology. In *Proceedings of the 2019 on Designing Interactive Systems Conference, San Diego, CA, USA, 23–28 June 2019*; Association for Computing Machinery: New York, NY, USA, 2019; pp. 241–252.
29. Kye, B.; Han, N.; Kim, E.; Park, Y.; Jo, S. Educational Applications of Metaverse: Possibilities and Limitations. *J. Educ. Eval. Health Prof.* **2021**, *18*, 32. <https://doi.org/10.3352/jeehp.2021.18.32>.
30. Li, H.; Daugherty, T.; Biocca, F. Impact of 3-D Advertising on Product Knowledge, Brand Attitude, and Purchase Intention: The Mediating Role of Presence. *J. Advert.* **2002**, *31*, 43–57. <https://doi.org/10.1080/00913367.2002.10673675>.
31. Mogaji, E.; Wirtz, J.; Belk, R.W.; Dwivedi, Y.K. Immersive Time (ImT): Conceptualizing Time Spent in the Metaverse. *Int. J. Inf. Manag.* **2023**, *72*, 102659. <https://doi.org/10.1016/j.ijinfomgt.2023.102659>.
32. Bale, A.S.; Ghorpade, N.; Hashim, M.F.; Vaishnav, J.; Almaspoor, Z. A Comprehensive Study on Metaverse and Its Impacts on Humans. *Adv. Hum. -Comput. Interact.* **2022**, *2022*, e3247060. <https://doi.org/10.1155/2022/3247060>.
33. Ahn, S.J.; Kim, J.; Kim, J. The Bifold Triadic Relationships Framework: A Theoretical Primer for Advertising Research in the Metaverse. *J. Advert.* **2022**, *51*, 592–607. <https://doi.org/10.1080/00913367.2022.2111729>.
34. Dwivedi, Y.; Baabdullah, A.; Hughes, L.; Ribeiro-Navarrete, S.; Giannakis, M.; Al-Debei, M.; Dennehy, D.; Metri, B.; Buhalis, D.; Cheung, C.; et al. Metaverse beyond the Hype: Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy. *Int. J. Inf. Manag.* **2022**, *66*, 102542. <https://doi.org/10.1016/j.ijinfomgt.2022.102542>.
35. McKinsey. Value Creation in the Metaverse, Atlanta, GA: McKinsey & Company. Available online: <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/value-creation-in-the-metaverse> (accessed on 4 March 2024).
36. Basten, D. Gamification. *IEEE Softw.* **2017**, *34*, 76–81. <https://doi.org/10.1109/MS.2017.3571581>.
37. Hendaoui, A.; Limayem, M.; Thompson, C. 3D Social Virtual Worlds: Research Issues and Challenges. *IEEE Internet Comput.* **2008**, *12*, 88–92. <https://doi.org/10.1109/MIC.2008.1>.
38. Mystakidis, S. Metaverse. *Encyclopedia* **2022**, *2*, 486–497. <https://doi.org/10.3390/encyclopedia2010031>.
39. Ramesh, U.V.; Harini, A.; Gowri, C.S.D.; Durga, K.V.; Druvitha, P.; Kumar, K.S. Metaverse: Future of the Internet. *Int. J. Res. Publ. Rev.* **2022**, *3*, 93–97.
40. Kemeç, A. From Reality to Virtuality: Re-Discussing Cities with the Concept of Metaverse. *Int. J. Manag.* **2022**, *4*, 12–20. <https://doi.org/10.34104/ijma.022.00120020>.
41. Ffiske, T. *The Metaverse: A Professional Guide: An Expert’s Guide to Virtual Reality (VR), Augmented Reality (AR), and Immersive Technologies*; Independently Published: Chicago, IL, USA, 2022; ISBN 9798403364522.
42. Sherman, W.R.; Craig, A.B. *Understanding Virtual Reality: Interface, Application, and Design*; Morgan Kaufmann: Burlington, MA, USA, 2019; ISBN 978-0-12-801038-9.
43. Foxman, M.H. *Playing with Virtual Reality: Early Adopters of Commercial Immersive Technology*. Columbia University, New York, NY, USA, 2018.

44. Sánchez-Cabrero, R.; Costa-Román, Ó.; Pericacho-Gómez, F.J.; Novillo-López, M.Á.; Arigita-García, A.; Barrientos-Fernández, A. Early Virtual Reality Adopters in Spain: Sociodemographic Profile and Interest in the Use of Virtual Reality as a Learning Tool. *Heliyon* **2019**, *5*, e01338. <https://doi.org/10.1016/j.heliyon.2019.e01338>.
45. Dudley, J.; Yin, L.; Garaj, V.; Kristensson, P.O. Inclusive Immersion: A Review of Efforts to Improve Accessibility in Virtual Reality, Augmented Reality and the Metaverse. *Virtual Real.* **2023**, *27*, 2989–3020. <https://doi.org/10.1007/s10055-023-00850-8>.
46. Li, X.; Yi, W.; Chi, H.-L.; Wang, X.; Chan, A.P.C. A Critical Review of Virtual and Augmented Reality (VR/AR) Applications in Construction Safety. *Autom. Constr.* **2018**, *86*, 150–162. <https://doi.org/10.1016/j.autcon.2017.11.003>.
47. Masood, T.; Egger, J. Augmented Reality in Support of Industry 4.0—Implementation Challenges and Success Factors. *Robot. Comput. Integr. Manuf.* **2019**, *58*, 181–195. <https://doi.org/10.1016/j.rcim.2019.02.003>.
48. Wedel, M.; Bigné, E.; Zhang, J. Virtual and Augmented Reality: Advancing Research in Consumer Marketing. *Int. J. Res. Mark.* **2020**, *37*, 443–465. <https://doi.org/10.1016/j.ijresmar.2020.04.004>.
49. Jian, S.; Chen, X.; Yan, J. From Online Games to “Metaverse”: The Expanding Impact of Virtual Reality in Daily Life. In *Proceedings of the Culture and Computing*; Rauterberg, M., Ed.; Springer International Publishing: Cham, Switzerland, 2022; pp. 34–43.
50. Cipresso, P.; Giglioli, I.A.C.; Raya, M.A.; Riva, G. The Past, Present, and Future of Virtual and Augmented Reality Research: A Network and Cluster Analysis of the Literature. *Front. Psychol.* **2018**, *9*, 309500.
51. Losada, N.; Jorge, F.; Teixeira, M.S.; Sousa, N.; Melo, M.; Bessa, M. Place Attachment Through Virtual Reality: A Comparative Study in Douro Region (Northern Portugal) with Video and ‘Real’ Visit. In *Proceedings of the Marketing and Smart Technologies*; Reis, J.L., López, E.P., Moutinho, L., Santos, J.P.M. dos, Eds.; Springer Nature: Singapore, 2022; pp. 585–594.
52. Milgram, P.; Kishino, F. A Taxonomy of Mixed Reality Visual Displays. *IEICE Trans. Inf. Syst.* **1994**, *E77-D*, 1321–1329.
53. Chalmers, D.J. Reality+—Virtual Worlds and the Problems of Philosophy; Norton: New York, NY, USA, 2022.
54. Schroeder, R. Defining Virtual Worlds and Virtual Environments. *J. Virtual Worlds Res.* **2008**, *1*, 1–3. <https://doi.org/10.4101/jvwr.v1i1.294>.
55. Moran, A.; Gadepally, V.; Hubbell, M.; Kepner, J. Improving Big Data Visual Analytics with Interactive Virtual Reality. In *Proceedings of the 2015 IEEE High Performance Extreme Computing Conference (HPEC)*, Waltham, MA, USA, 15–17 September 2015; pp. 1–6.
56. Becker, H.S. *Evidence*; University of Chicago Press: Chicago, IL, USA, 2017; ISBN 978-0-226-46637-8.
57. Richards, T.J.; Richards, L. Using Computers in Qualitative Research. In *Collecting and Interpreting Qualitative Materials*; Densin, N., Lincoln, Y.S., Eds.; Sage: London, UK, 1998; pp. 211–245.
58. Sutherland, I.E. A Head-Mounted Three Dimensional Display. In *Proceedings of the December 9-11, 1968, Fall Joint Computer Conference, Part I*; Association for Computing Machinery: New York, NY, USA, 1968; pp. 757–764.
59. Burrows, G. *Your Life in the Metaverse*; Really Interesting Books: Torino, Italy, 2022.
60. Brown, E.; Cairns, P. *A Grounded Investigation of Game Immersion*; Association for Computing Machinery: New York, NY, USA, 2004; p. 1300; ISBN 1-58113-703-6.
61. Bowman, D.A.; McMahan, R.P. Virtual Reality: How Much Immersion Is Enough? *Computer* **2007**, *40*, 36–43. <https://doi.org/10.1109/MC.2007.257>.
62. Zahiu, A. I. Avatar: Towards an Extended Theory of Selfhood in Immersive VR. *Információs Társadalom* **2019**, *19*, 147. <https://doi.org/10.22503/infars.XIX.2019.4.10>.
63. Slater, M.; Pérez Marcos, D.; Ehrsson, H.; Sanchez-Vives, M. Inducing Illusory Ownership of a Virtual Body. *Front. Neurosci.* **2009**, *3*, 676.
64. Slater, M. Immersion and the Illusion of Presence in Virtual Reality. *Br. J. Psychol.* **2018**, *109*, 431–433. <https://doi.org/10.1111/bjop.12305>.
65. Fox, J.; Arena, D.; Bailenson, J.N. Virtual Reality: A Survival Guide for the Social Scientist. *J. Media Psychol. Theor. Methods Appl.* **2009**, *21*, 95–113. <https://doi.org/10.1027/1864-1105.21.3.95>.
66. Ryan, M.-L. Immersion vs. Interactivity: Virtual Reality and Literary Theory. *Postmod. Cult.* **1999**, *28*, 110–137. <https://doi.org/10.2307/3685793>.
67. Sheridan, T. Musings on Telepresence and Virtual Presence. *Presence* **1992**, *1*, 120–125. <https://doi.org/10.1162/pres.1992.1.1.120>.
68. Gregory, L.F.; Dan, H. The Laws of the Virtual Worlds. *Calif. Law Rev.* **2004**, *92*, 1–74. <https://doi.org/10.15779/Z386H7P>.
69. Girvan, C. What Is a Virtual World? Definition and Classification. *Educ. Technol. Res. Dev.* **2018**, *66*, 1087–1100. <https://doi.org/10.1007/s11423-018-9577-y>.
70. Dionisio, J.D.N.; Burns, W.G., III; Gilbert, R. 3D Virtual Worlds and the Metaverse: Current Status and Future Possibilities. *ACM Comput. Surv. (CSUR)* **2013**, *45*, 1–38. <https://doi.org/10.1145/2480741.2480751>.
71. Steinkuehler, C.; Williams, D. Where Everybody Knows Your (Screen) Name: Online Games as “Third Places”. *J. Comput.-Mediat. Commun.* **2006**, *11*, 885–909. <https://doi.org/10.1111/j.1083-6101.2006.00300.x>.
72. Fetscherin, M.; Lattemann, C. User Acceptance of Virtual Worlds. *J. Electron. Commer. Res.* **2008**, *9*, 231–242.
73. Nevelsteen, K.J.L. Virtual World, Defined from a Technological Perspective, and Applied to Video Games, Mixed Reality and the Metaverse. *Comput. Anim. Virtual Worlds* **2018**, *29*, e1752. <https://doi.org/10.1002/cav.1752>.

74. Rostami, S.; Maier, M. The Metaverse and Beyond: Implementing Advanced Multiverse Realms With Smart Wearables. *IEEE Access* **2022**, *10*, 110796–110806. <https://doi.org/10.1109/ACCESS.2022.3215736>.
75. Hamit, F. *Virtual Reality and the Exploration of Cyberspace*; SAMS Publishing: Carmel, IN, USA, 1993.
76. Castells, M. *Communication Power*; Oxford University Press: London, UK, 2009.
77. Damaševičius, R.; Sidekėrėnienė, T. Designing Immersive Gamified Experiences in the Metaverse for Enhanced Student Learning. In Proceedings of the 2023 International Conference on Intelligent Metaverse Technologies & Applications (iMETA), Tartu, Estonia, 18–20 September 2023; pp. 1–6.
78. A Quote from Journals of Ralph Waldo Emerson, with Annotations—1841–1844. Available online: <https://www.goodreads.com/quotes/251473-all-life-is-an-experiment-the-more-experiments-you-make> (accessed on 5 February 2023).

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