

# Gamification in the metaverse for business value: a systematic literature review

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## Abstract

**Purpose** – This article systematically reviews research at the intersection of gamification and the metaverse to understand how gamified immersive environments contribute to business value. It consolidates current knowledge, proposes an integrative framework to guide research and practice, and identifies gaps that can guide scholarly inquiry in this emergent domain.

**Design/methodology/approach** – A systematic literature review (SLR) was conducted. A total of 38 relevant articles were identified through initial screening and forward-backward search. These were analyzed via concept-centric coding and synthesized into thematic clusters. The insights were used to develop a business-oriented, comprehensive framework integrating design, engagement, value and ethical considerations for responsible metaverse gamification.

**Findings** – Four thematic clusters were identified: (1) Design and Mechanics, highlighting game elements (e.g. avatars, narratives, feedback systems) that promote immersion and flow; (2) Business and Consumer Engagement, showing how gamification influences affective and cognitive engagement, loyalty and purchase intentions; (3) Business Value, demonstrating how gamified experiences generate economic, relational and strategic benefits and (4) Ethics, Policy and Societal Impact, underscoring risks including data misuse, manipulation and inequitable access. Drawing on these themes, the article introduces the “GAMIFY” framework, synthesizing these dimensions for gamification in the metaverse.

**Research limitations/implications** – The review is limited to peer-reviewed, English-language publications and excludes gray literature, yielding a focused corpus of 38 studies that reflects the emerging state of metaverse-specific gamification research. Given the predominance of consumer-facing contexts in the reviewed literature, GAMIFY’s applicability across all sectors should be interpreted with these boundaries in mind. The framework offers a structured research roadmap and opens avenues for longitudinal, ethically informed and cross-industry studies that would refine and validate it across diverse metaverse ecosystems.

**Practical implications** – GAMIFY gives managers an actionable diagnostic for turning gamified metaverse engagement into sustainable business value, reframing immersive design from a set of engagement tactics into a coherent strategic architecture. By aligning goals, mechanics and metrics while pairing Fair Governance with Yield-focused evaluation, it shifts attention from surface metrics to high-impact outcomes such as customer lifetime value and skill mastery, providing a structured basis for ethical, scalable and measurable gamification in the metaverse.

**Originality/value** – This is the first systematic review to integrate insights on gamification design and business value in the context of the metaverse. The article contributes a novel framework for responsible, value-driven metaverse gamification (GAMIFY) and a future research agenda.

**Keywords** Gamification, Metaverse, Customer engagement, Business value, Systematic literature review

**Paper type** Literature review

## 1. Introduction

Gamification integrates game design elements into nongaming contexts (Deterding *et al.*, 2011) and has proven effective in enhancing engagement across domains such as education,

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marketing and healthcare (Koivisto and Hamari, 2019; Sharma *et al.*, 2024). It capitalizes on fundamental human desires for competition, achievement and social interaction by embedding mechanics such as rewards, points and challenges into virtual environments (Sailer *et al.*, 2017). In brief, gamification leverages the intrinsic and extrinsic motivators of human behavior to drive participation and sustained interaction (Seaborn and Fels, 2015).

The metaverse is enabling new forms of socialization that transform the way people interact with both digital and physical environments, offering opportunities for enhancing engagement (Wasiq *et al.*, 2024). It is increasingly recognized as a multidimensional convergence of virtual reality (VR), augmented reality (AR) and mixed reality (MR) technologies, creating immersive and persistent digital environments (Vidal-Tomás, 2023). The metaverse should be understood as a dynamic and shifting environment (Dolata and Schwabe, 2023). It amplifies gamification's potential as its immersive nature allows virtual experiences to be naturalized. This immersiveness (the "perception of being physically present in a nonphysical world") is a critical differentiator from previous virtual environments as it helps overcome the traditional "trade-off between richness and reach" (Krüger *et al.*, 2025). In doing so, the metaverse can offer experiences that are comparable to, or even surpass, physical encounters in both utility and enjoyment (Xi *et al.*, 2024).

Gamification in the metaverse is transformative due to its capacity for immersive interaction (Rincon Soto and Sanchez Leon, 2022). It supports the creation of personalized digital experiences that blur boundaries between physical and virtual spaces (Cha *et al.*, 2024). For instance, virtual showrooms enhance customer engagement through gamified interactions (Chernbumroong *et al.*, 2024). Furthermore, evidence from fashion highlights how gamification can enhance engagement and purchase intentions (Lau and Ki, 2021). Its psychological foundations draw from Flow theory (Csikszentmihalyi, 1990) and Self-Determination Theory (Deci and Ryan, 1985), which inform designs that promote deep concentration and relatedness (Chen *et al.*, 2023). Achievement and self-expression (Cha *et al.*, 2024) combined with enjoyment and personalization (Singh *et al.*, 2025; Yang *et al.*, 2023) can drive adoption and sustained participation.

The global metaverse market, valued at approximately USD 105.4 billion in 2024 and projected to reach around USD 936.6 billion by 2030 at a compound annual growth rate of 46.4% (Grand View Research, 2025), represents a rapidly expanding economic domain. This underscores the need for frameworks that can guide the integration of gamification in metaverse environments for generating business value. This is not straightforward as the relationship between digital technologies and the generation of business value has been elusive in extant research (Schryen, 2013). Unlocking the business potential of gamification in the metaverse requires a granular understanding of specific design aspects, and behavioral pulls contributing to value creation (Kostelić and Etinger, 2025).

The generation of business value in the metaverse is not straightforward, as it depends heavily on how users cognitively appraise and emotionally experience the environment (Suh, 2024). As emphasized by Schryen (2013), it is important to ensure clarity around business value and take into account that it emerges through complex, multilayered processes. In the case of gamification in the metaverse, value creation is further complexified by ethical challenges, including risks of addiction, manipulation and data misuse that make responsible technology enactment a key managerial concern (Akbarighatar *et al.*, 2025), and a growing stream of work explicitly calls for responsible-metaverse principles to guide decision-making in immersive business environments (Behera *et al.*, 2024). Therefore, leveraging the metaverse for business value requires responsible strategizing (Marabelli and Newell, 2023).

Building on these insights, this literature review synthesizes the emerging but fragmented body of research on gamification in metaverse environments and its implications for business value creation. To ensure methodological rigor, the review follows established systematic literature review (SLR) guidelines (Kitchenham *et al.*, 2009; Okoli, 2015). The review is guided by the following research question: what are the key findings in extant research related to gamification in the metaverse and its impact on business value creation?

The article's contribution is threefold. First, recurring themes in the literature are identified and mapped in a concise concept matrix. Second, a novel, research-grounded framework is proposed as a roadmap for responsible, value-driven metaverse gamification. The framework encompasses Goal-driven mechanics, Avatar mediation, Multi-sensory immersion, Incentivization, Fair governance and Yield measurement, and is named with the acronym "GAMIFY". Finally, as a third contribution, the article identifies research gaps and develops a future research agenda to guide scholarly inquiry in this emerging domain.

The remainder of the article is organized as follows. First, the method used for selecting and analyzing the articles for this review is presented. Then, a synthesis of the findings and a concise concept matrix are presented. Next, the comprehensive "GAMIFY" framework is suggested along with guidance for its implementation. Finally, the article is concluded by discussing implications for further research.

## 2. Methodology

This study employs an SLR methodology to rigorously analyze existing scholarly work examining gamification within metaverse environments and its impact on customer engagement and business value creation. The SLR methodology was selected for its demonstrated capacity to minimize selection and interpretation biases while providing thorough coverage of complex interdisciplinary domains (Boell and Cecez-Kecmanovic, 2015; Rowe, 2014; Tranfield *et al.*, 2003). Unlike traditional narrative reviews, the SLR allows for an explicit, transparent and replicable process (Kraus *et al.*, 2023; Williams *et al.*, 2021). The review process included mapping the state of the art on gamification in the metaverse for business value and synthesizing the insights from this corpus of relevant publications by developing a concept matrix (Webster and Watson, 2002) and identifying thematic patterns.

### 2.1 Methodological framework

This review was performed by following a structured and rigorous approach informed by two established SLR guiding frameworks: Kitchenham's (2004) three-stage protocol and Okoli's (2015) eight-step procedure. They both emphasize transparency, replicability and rigor and they are complementary as they are at different levels of granularity. The guidance by Kitchenham (2004) focuses on high-level review stages (planning, conducting, reporting) (Kitchenham *et al.*, 2009), while Okoli (2015) provides operational detail and procedural specificity. Okoli guides the articulation of the review purpose and the protocol development, the search, screening, extraction, appraisal, synthesis and write-up (Okoli, 2015). The two frameworks are complementary in scope. So, in this work, Kitchenham provides the structural backbone of the review and Okoli provides the fine-grained procedural guidance.

### 2.2 Literature corpus identification

A comprehensive search was performed in Scopus, Web of Science and the Association for Information Systems (AIS) eLibrary using structured Boolean queries. Scopus and Web of Science were selected because they are among the most comprehensive multidisciplinary databases of scientific literature and offer advanced search capabilities that support transparent and reproducible systematic reviews (Gusenbauer and Haddaway, 2020). This database choice is consistent with the rigor expected of evidence-informed management reviews (Tranfield *et al.*, 2003) and with broader IS-oriented SLR practice (Boell and Cecez-Kecmanovic, 2015; Williams *et al.*, 2021), which emphasize the use of comprehensive, well-indexed sources to ensure transparency and replicability. The AIS eLibrary was included because Information Systems scholarship frequently develops relevant research that may not be indexed in broader databases. This inclusion mitigates the risk of overlooking relevant metaverse studies. To enhance coverage, backward and forward searches were performed (Hu *et al.*, 2011). This multi-pronged search aimed to produce a corpus as complete as possible.

The literature search was conducted on 3 February 2025 using a carefully structured Boolean query. A combination of three keyword components was used aligning with this study’s objective to explore gamification for business value in the metaverse. Specifically, the first component includes “gamification” and its lexical variants (gam\*), the second component includes the term “metaverse” or alternatively “virtual world” thereby encompassing both emerging metaverse terminology and its established conceptual predecessor. Finally, the third component captures the business value domain broadly by including the terms “business” or “value” allowing for the identification of relevant studies even when the exact phrase “business value” does not appear. Searches were conducted within title, abstract and keyword fields to ensure topical relevance. The temporal scope was restricted to publications after 2015, reflecting the period during which the metaverse crystallized as a distinct technological and scholarly construct; earlier works were also excluded because technologies have changed significantly during the years. The search covered journal articles and conference proceedings. Only English-language publications were included to maintain interpretive consistency.

In generic form, the Boolean search string is: (“gamification” OR gam\*) AND (“metaverse” OR “virtual world\*”) AND (“business” OR “value”). The query was adapted to the specific syntax requirements of each database.

The inclusion and exclusion criteria used are presented in [Table 1](#).

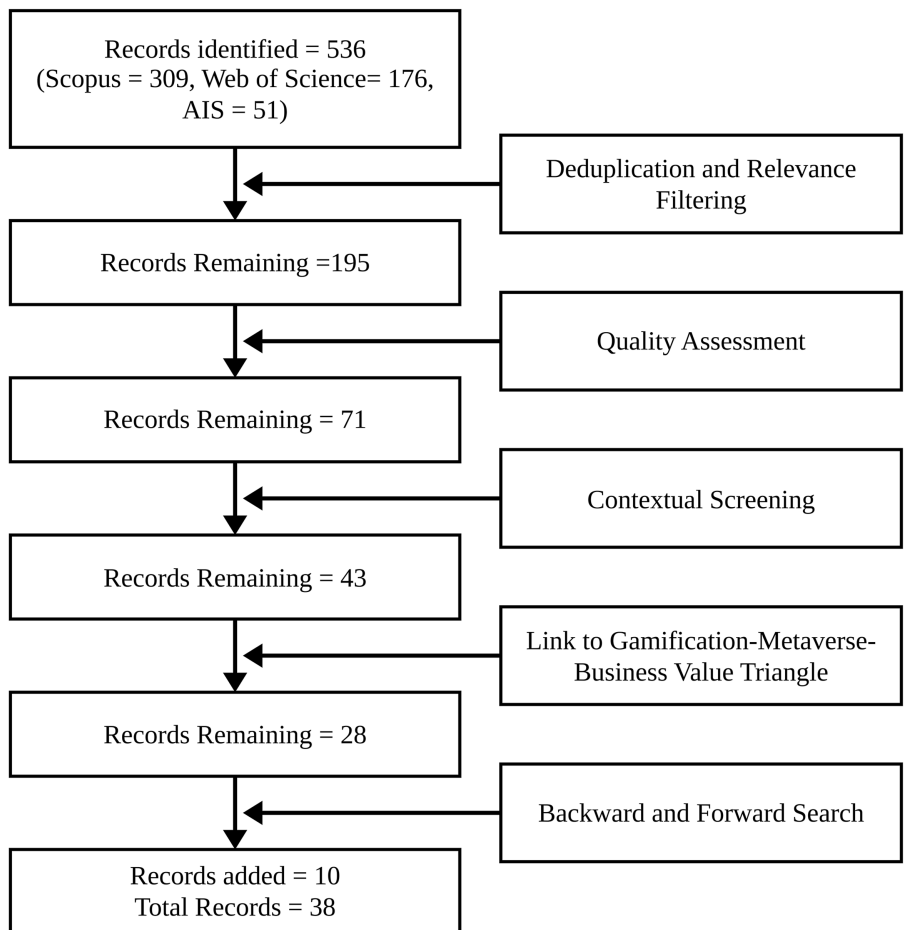
The initial search yielded a dataset of 536 records: 309 retrieved from Scopus, 176 from Web of Science, and 51 from the AIS eLibrary. After removing duplicate records, the abstracts of all unique publications were screened for relevance, resulting in 195 studies that met the conceptual boundaries of this review. These remaining studies underwent a rigorous quality and contextual appraisal, assessing outlet quality and methodological robustness. Furthermore, the studies were assessed for contextual relevance, leading to the exclusion of articles that did not relate to business contexts (e.g. papers focused on educational or medical applications of gamification in the metaverse were excluded). A final round included the assessment of the full text in terms of relevance to the gamification – metaverse – business value triangle. The resulting corpus was a focused, high-quality dataset of 28 articles. Backward and forward searches were performed starting from this well-curated set and yielded an additional set of ten publications that were added. [Figure 1](#) provides an overview of the process followed.

The outlet quality for the articles included in the final literature corpus is strong according to established journal quality rankings, specifically the SCImago Journal Rank (SJR). Overall, 25 of the 38 studies were published in SJR Q1 outlets (top-tier outlets), with an additional four appearing in Q2 outlets and three in Q3/Q4 outlets. The remaining six publications are conference papers ([Table 2](#)).

Given the limited body of empirical research at the intersection of gamification, the metaverse and business value, particular care was taken to ensure rigor and transparency throughout the review. A pre-defined review protocol, informed by [Kitchenham \(2004\)](#) and [Okoli \(2015\)](#), governed each stage of the process and specified the search strings, inclusion and

**Table 1.** Inclusion and exclusion criteria

| Criterion                           | Inclusion                                                   | Exclusion                                                                                                                              |
|-------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Publication type                    | - Academic journal articles and conference proceedings      | Editorials, commentaries, book chapters, concept notes                                                                                 |
| Scope and relevance                 | Studies on metaverse gamification related to business value | Studies in non-business domains (e.g. medical, educational); studies addressing only system design without business value implications |
| Time frame                          | After 2015                                                  | Pre 2015 (metaverse concept nascent)                                                                                                   |
| Language                            | English                                                     | Non-English                                                                                                                            |
| <b>Source(s):</b> Author’s own work |                                                             |                                                                                                                                        |



**Figure 1.** Literature corpus identification. Source(s): Author's own work

**Table 2.** Quality appraisal of outlets (SJR quartile) for the literature corpus (n = 38)

| Category (SJR quartile) | Count | Notes                    |
|-------------------------|-------|--------------------------|
| Q1                      | 25    | Top-tier outlets         |
| Q2                      | 4     | High-quality outlets     |
| Q3–Q4                   | 3     | Remaining ranked outlets |
| Conference papers       | 6     |                          |

**Source(s):** Author's own work

exclusion criteria, screening procedures, quality appraisal indicators and synthesis approach prior to data extraction. Consistency checks were embedded across the workflow: each candidate study was independently screened against the pre-defined criteria, and ambiguous cases (e.g. studies straddling business and educational domains, or studies addressing virtual

worlds without explicit metaverse framing) were flagged and revisited. Decisions on inclusion, exclusion and contextual relevance were systematically documented in an audit trail comprising spreadsheets recording reasons for exclusion at each screening stage, and the outcomes of the backward and forward citation search. Conducting these procedures in an emerging field with a relatively small evidence base required iterative refinement; the protocol was therefore re-validated after the initial screening to ensure that the criteria remained discriminating and well-aligned with the review question. This process helped ensure the consistency, methodological rigor and trustworthiness of the review, while also providing transparency around the judgements made in synthesizing a still-nascent literature.

2.3 Literature corpus analysis

For the analysis of the articles identified, the approach proposed by Webster and Watson was followed (Webster and Watson, 2002). Specifically, a concept-centric matrix was constructed to categorize key themes, providing a structured overview of existing research. The process followed is presented in Figure 2. The concept matrix is presented in Table 3 and it includes themes that were generated by synthesizing codes into higher-order thematic clusters. Insights from these clusters informed the development of an integrative framework.

3. Literature analysis results

The SLR revealed four thematic clusters that structure the scholarly discourse. These clusters are presented in the subsections that follow and provide a structure for

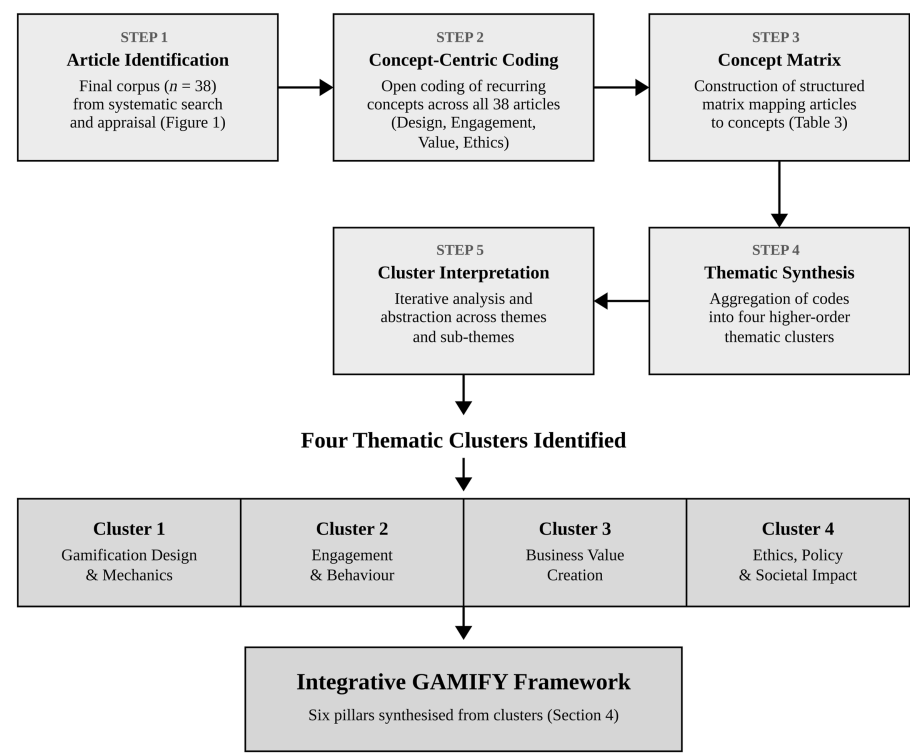


Figure 2. Literature analysis following Webster and Watson's (2002) approach. Source(s): Author's own work

**Table 3.** Concept matrix

| #  | Author, year                                 | Title                                                                                                                                                      | Gamification design and mechanics | Engagement and behavior | Business value creation | Ethics, policy and societal impact |
|----|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------|-------------------------|------------------------------------|
| 1  | <a href="#">Afkar et al. (2022)</a>          | Prediction of Perceived Consumer Experience, Perceived Brand Engagement and Gamification towards the Intention to Use Metaverse: An Extended TAM Approach  |                                   | X                       |                         |                                    |
| 2  | <a href="#">Al-Adwan et al. (2025)</a>       | Treasure Hunting for Brands: Metaverse Marketing Gamification Effects on Purchase Intention, WOM and Loyalty                                               |                                   | X                       | X                       |                                    |
| 3  | <a href="#">Arya et al. (2024)</a>           | Brands are calling your AVATAR in Metaverse—A study to explore XR-based gamification marketing activities and consumer-based brand equity in virtual world | X                                 |                         | X                       |                                    |
| 4  | <a href="#">Bazi and Hajawi (2025)</a>       | Customer inspiration in the metaverse: Antecedents, mechanisms and outcomes                                                                                | X                                 | X                       | X                       |                                    |
| 5  | <a href="#">Bousba and Arya (2022)</a>       | Let's connect in metaverse Brand's new destination to increase consumers' affective brand engagement and their satisfaction and advocacy                   | X                                 | X                       |                         |                                    |
| 6  | <a href="#">Behera et al. (2024)</a>         | Responsible metaverse: Ethical metaverse principles for guiding decision-making and maintaining complex relationships for businesses in 3D virtual spaces  |                                   | X                       |                         | X                                  |
| 7  | <a href="#">Calandra et al. (2024)</a>       | Metaverse meets digital entrepreneurship: a practitioner-based qualitative synthesis                                                                       |                                   |                         | X                       |                                    |
| 8  | <a href="#">Cha et al. (2024)</a>            | Gamification in the Metaverse: Affordance, perceived value, flow state and engagement                                                                      | X                                 | X                       |                         |                                    |
| 9  | <a href="#">Chen et al. (2023)</a>           | Paying attention in metaverse: an experiment on spatial attention allocation in extended reality shopping                                                  |                                   | X                       |                         |                                    |
| 10 | <a href="#">Choi (2022)</a>                  | A Study on Factors Affecting the User experience of Metaverse Service                                                                                      |                                   | X                       |                         |                                    |
| 11 | <a href="#">Dai and Bal (2009)</a>           | Harmonising Culture in Co-Operative Business Ventures: Using a Simulation in a Metaverse                                                                   | X                                 |                         | X                       |                                    |
| 12 | <a href="#">Dincelli and Jafarian (2025)</a> | Exploring the Agentic Metaverse's Potential for Transforming Cybersecurity Workforce Development                                                           | X                                 |                         |                         |                                    |
| 13 | <a href="#">Dwivedi et al. (2022)</a>        | Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities and agenda for research, practice and policy               |                                   | X                       | X                       | X                                  |
| 14 | <a href="#">Dwivedi et al. (2023)</a>        | Metaverse marketing: How the metaverse will shape the future of consumer research and practice                                                             |                                   | X                       | X                       | X                                  |
| 15 | <a href="#">Ezzatian et al. (2025)</a>       | Branding tourism destinations in the metaverse: insights from professionals and researchers                                                                | X                                 |                         | X                       | X                                  |
| 16 | <a href="#">Flavián et al. (2024)</a>        | The dark side of the metaverse: The role of gamification in event virtualization                                                                           |                                   | X                       |                         | X                                  |
| 17 | <a href="#">Hao et al. (2025)</a>            | Digital luxury: how avatar marketing drives consumer engagement for luxury brands                                                                          | X                                 | X                       |                         |                                    |

(continued)

Table 3. Continued

| #  | Author, year                       | Title                                                                                                                                                    | Gamification design and mechanics | Engagement and behavior | Business value creation | Ethics, policy and societal impact |
|----|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------|-------------------------|------------------------------------|
| 18 | Heo (2025)                         | Marketing Luxury Fashion in the Metaverse: The Case of Gucci Town on Roblox                                                                              |                                   | X                       | X                       |                                    |
| 19 | Jacobides <i>et al.</i> (2024)     | The Business Value of Gamification                                                                                                                       | X                                 |                         | X                       |                                    |
| 20 | Jacquemin <i>et al.</i> (2025)     | Virtual Experiences, Real Impact: Rethinking Brand Engagement in the Metaverse                                                                           |                                   |                         | X                       |                                    |
| 21 | Kango <i>et al.</i> (2025)         | An Exploratory Analysis of Metaverse from a Lefebvrian Lens                                                                                              | X                                 |                         |                         |                                    |
| 22 | Lau and Ki (2021)                  | Can consumers' gamified, personalized and engaging experiences with VR fashion apps increase in-app purchase intention by fulfilling needs?              | X                                 | X                       |                         |                                    |
| 23 | Mancuso <i>et al.</i> (2023)       | Digital business model innovation in metaverse: How to approach virtual economy opportunities                                                            |                                   |                         | X                       |                                    |
| 24 | Moon and Han (2023)                | The Effect of Gamified Brand Experience using Metaverse on User's Purchase Intention and Brand Attitude: Moderating Effect of User-to-User Interactivity |                                   | X                       |                         |                                    |
| 25 | Nayal (2026)                       | Embarrassed but Hooked: How Gamified Social Coupons Drive Users to Spread PWOM in the Metaverse                                                          | X                                 |                         |                         | X                                  |
| 26 | Nosikov (2025)                     | Virtualization of Communication in Metaverses: Key Trends and Prospects                                                                                  |                                   | X                       |                         | X                                  |
| 27 | Pagani and Xie (2025)              | Customer Experiences in Branded Metaverse Events: Effects on Brand Equity                                                                                |                                   | X                       | X                       |                                    |
| 28 | Pandey and Mukherjee (2024)        | Can Multi-Sensory Affordance Mitigate the Shortcomings of Metaverse offerings?                                                                           | X                                 | X                       |                         |                                    |
| 29 | Sánchez-Adame <i>et al.</i> (2023) | Framework for Ethically Designed Microtransactions in the Metaverse                                                                                      |                                   |                         |                         | X                                  |
| 30 | SanMiguel <i>et al.</i> (2024)     | Fashion brands in the metaverse: Achievements from a marketing perspective                                                                               |                                   |                         | X                       |                                    |
| 31 | Sharma <i>et al.</i> (2024)        | Game on! A state-of-the-art overview of doing business with gamification                                                                                 | X                                 | X                       | X                       |                                    |
| 32 | Tayal <i>et al.</i> (2022)         | Virtual Reality based Metaverse of Gamification                                                                                                          |                                   | X                       |                         |                                    |
| 33 | Thomas <i>et al.</i> (2023)        | A framework for gamification in the metaverse era: How designers envision gameful experience                                                             | X                                 |                         |                         |                                    |
| 34 | Vakeel <i>et al.</i> (2025)        | Remote work in the metaverse: The impact of gamification and online social connectedness on job satisfaction                                             | X                                 | X                       |                         |                                    |
| 35 | Wang and Guo (2025)                | How does the metaverse tourism experience form tourists' happiness: A mixed-methods study                                                                |                                   | X                       |                         |                                    |
| 36 | Yang <i>et al.</i> (2023)          | Gamification and Marketing Management: A Literature Review and Future Agenda                                                                             |                                   | X                       |                         |                                    |

(continued)



**Table 3.** Continued

| #  | Author, year                        | Title                                                                                                                   | Gamification<br>design and<br>mechanics | Engagement<br>and behavior | Business<br>value<br>creation | Ethics,<br>policy<br>and<br>societal<br>impact |
|----|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------|-------------------------------|------------------------------------------------|
| 37 | <a href="#">Zhang et al. (2025)</a> | “Do video game players dream of metaverse traveling?” The role of gamification technology and game immersion experience |                                         | X                          |                               |                                                |
| 38 | <a href="#">Zhou et al. (2025)</a>  | Demystifying the Dimensions and Roles of Metaverse Gaming Experience Value: A Multi-Study Investigation                 | X                                       | X                          |                               |                                                |

**Source(s):** Author’s own work

understanding gamification as a multi-level construct with far-reaching implications for design, business value and social responsibility. They also reveal that gamification in the metaverse is not only a technological and commercial innovation but also has cognitive and ethical implications. Specifically, through iterative analysis and abstraction, the themes identified are: (1) Gamification Design and Mechanics, (2) Engagement and Behavior, (3) Business Value Creation and (4) Ethics, Policy and Societal Impact. These are presented in what follows.

### 3.1 Gamification design and mechanics in the metaverse

This theme captures how gamification elements – including badges, levels, leaderboards, avatars and storytelling – are integrated into immersive environments to foster engagement. Studies emphasize the importance of adaptive systems, emotional resonance and narrative immersion to facilitate flow and sustained participation. Research identifies experiential design dimensions (playfulness, sensory immersion, usability and environmental aesthetics) as key levers for gamification design ([Zhou et al., 2025](#)). Furthermore, prior work shows that successful gamified environments emerge from configurations of mutually reinforcing features rather than isolated mechanics ([Jacobides et al., 2024](#)). Gamification mechanics such as exploratory quests and collectible-based challenges can operate as spatial scaffolding tools that reduce navigational friction and facilitate cognitive orientation in three-dimensional virtual spaces, guiding users toward spatial congruence ([Kango et al., 2025](#)).

The synergy between gamification and immersion fosters a heightened state of presence and flow, catalyzed through avatar-based personalization. Customizable identities deepen engagement ([Bousba and Arya, 2022](#)) while personalization influences sensory and relational experiences ([Ezzatian et al., 2025](#)). Metaverse platforms can enhance experiential realism through advanced avatar embodiment features, such as layered digital clothing and personalized visual identity, which strengthen users’ sense of self-presence and psychological immersion ([Dai and Bal, 2009](#)). Avatar design can support anthropomorphism, interactivity and multi-sensory feedback ([Pandey and Mukherjee, 2024](#)). This argument reinforces the broader emphasis on multi-sensory immersion as a core experiential lever ([Sharma et al., 2024](#); [Zhou et al., 2025](#)) and complements evidence on avatar-driven brand engagement in metaverse settings ([Arya et al., 2024](#)). Extant research illustrates how avatar-based interactions and customizable virtual identities significantly impact user satisfaction and perceived autonomy ([Arya et al., 2024](#); [Bousba and Arya, 2022](#)). Personalization is not merely aesthetic but functions as a psychological anchor, enhancing self-presence and behavioral consistency in digital environments. Avatars, embodiment and identity expression significantly shape engagement and interaction in virtual spaces ([Lau and Ki, 2021](#)).

Traditional game elements (such as real-time feedback and dynamic difficulty adjustment) are adapted to immersive contexts (Sharma *et al.*, 2024), with their effectiveness amplified by technologies like VR, AR and XR, which enhance spatial presence, embodiment and interactivity. Furthermore, a growing subset of the literature highlights the importance of real-time adaptation of gamified elements based on user input and behavior (e.g. Sharma *et al.*, 2024). It is important not to generate cognitive overload and prior research underscores the need for tailored configurations (or “value recipes”) that optimize engagement and well-being (Vakeel *et al.*, 2025). Prior research cautions against the risk of “over-gamification,” noting that excess can undermine realism (Dincelli and Jafarian, 2025). This observation is consistent with broader evidence on cognitive overload and diminishing experiential returns when gamified intensity is poorly calibrated (Flavián *et al.*, 2024; Vakeel *et al.*, 2025). Game mechanics ensure that challenges are optimally engaging (neither too hard nor too easy) and linked to achievement, identity, competition and self-expression (Cha *et al.*, 2024). Adaptive mechanics respond to user behavior in real time (Sharma *et al.*, 2024), enabling challenge calibration at scale.

A key aim for gamification design is Gameful Experience (GAMEX). This is a holistic experiential state capturing enjoyment, absorption, activation, dominance and creative thinking (Bazi and Hajawi, 2025; Thomas *et al.*, 2023). GAMEX aligns with core psychological needs for autonomy, competence and relatedness and elucidates how immersive environments generate flow. In metaverse contexts, additional design levers (such as avatar personalization) further configure interactive and relational experiences (Ezzatian *et al.*, 2025). GAMEX integrates the affective, cognitive and motivational layers of immersion (Bazi and Hajawi, 2025). The evolution of gamification in the metaverse moves beyond simple point-based incentives, incorporating a mixture of processes, random events, role-play and adaptable reward structures to achieve a complex emulation of reality (Dai and Bal, 2009). Concurrently, social mechanics are being transformed through gamified social coupons (network-shared rewards that require users to complete collaborative challenges) to earn points. Such interactions can foster shared achievement and social connection, effectively turning functional transactions into memorable, socially engaging experiences (Nayal, 2026). This finding complements established evidence that gamification fosters affective engagement and consumer–brand bonds in the metaverse (Arya *et al.*, 2024; Bousba and Arya, 2022) by extending the focus to network-level mechanics in which collaboration itself becomes the engagement lever. These insights align with (Zhou *et al.*, 2025), who emphasize immersion, usability and aesthetics as experiential levers that designers can modulate. Operational strategies commonly include structured progression and community building via social mechanics.

The studies in this cluster demonstrate that design in gamified metaverse applications requires balancing traditional game elements and immersive features. Effective design must account for flow, personalization and adaptivity, creating integrated and emotionally resonant experiences.

### 3.2 Gamification engagement and behavior in the metaverse

Empirical studies (Arya *et al.*, 2024; Bousba and Arya, 2022; Lau and Ki, 2021) reveal that gamification in the metaverse significantly enhances affective and cognitive engagement. By leveraging game-like elements within virtual brand spaces, companies are able to increase dwell time, brand recall and emotional attachment. These effects are amplified when combined with immersive storytelling and avatar-driven personalization. Customer engagement, a critical business metric, improves as gamification creates a sense of accomplishment and emotional connection (Sharma *et al.*, 2024; Yang *et al.*, 2023). Interactive campaigns, reward systems and VR-based product simulations foster satisfaction, and memorable brand experiences (Ezzatian *et al.*, 2025) and can also enhance enjoyment, social affiliation, status signaling and expressive behaviors (Hao *et al.*, 2025). Studies like

Arya *et al.* (2024) and Bousba and Arya (2022) show how gamified metaverse campaigns increase affective brand engagement through interactive avatars and environments, as further evidenced in luxury fashion case studies, where gamified avatar-mediated environments support identity expression and reinforce brand engagement (Heo, 2025).

Recent work positions gamified metaverse activities as psychological stimuli that enhance engagement, affective satisfaction and hedonic value (Arya *et al.*, 2024; Cha *et al.*, 2024). Across the literature, engagement is conceptualized as a voluntary investment of cognitive, affective and behavioral resources, while immersion represents the deeper mechanism that enables sustained involvement. To sustain meaningful engagement, it is important to move beyond initial interactions and nurture multifaceted relationships where individuals and organizations participate, interact, communicate, transact and exchange information in real time (Behera *et al.*, 2024). This relational view aligns with the conceptualization of engagement as a voluntary investment of cognitive, affective and behavioral resources (Sharma *et al.*, 2024).

Immersion, which is characterized by focused attention, experiential involvement and affective absorption, functions as a primary pathway through which gamified elements generate continuous use and platform attachment (Choi, 2022; Wang and Guo, 2025). The antecedents of this immersive state are often explained through the Motivation–Opportunity–Ability framework. Enjoyment (motivation), facilitating conditions (opportunity) and self-efficacy (ability) all positively influence immersion (Choi, 2022). When these conditions align, high engagement produces favorable behavioral outcomes, including stronger continuous-use intentions, increased brand loyalty, heightened brand happiness and intensified advocacy (Afkar *et al.*, 2022; Jang and Kim, 2025; Moon and Han, 2023). Engagement in the metaverse is found to be driven by distinct experience categories: community, utilitarian digital commerce, socializing, hedonic gaming and information-seeking (Pagani and Xie, 2025). This typology dovetails with the experiential archetypes (nudge, flow, alternate reality and hedonic) identified in prior conceptual work (Thomas *et al.*, 2023) and reinforces the broader view that engagement in immersive environments is multidimensional rather than unitary (Cha *et al.*, 2024). While presence and interactivity generally boost engagement, their effectiveness can be weakened by perceived embarrassment related to avatar behavior. This highlights the need for designers to ensure that social interactions feel natural and “un-weird” to maintain high engagement levels (Nayal, 2026).

Individual differences moderate gamification dynamics, as users with higher affect intensity experience stronger emotional amplification and deeper immersion (Choi, 2022). The effectiveness of gamification lies in its ability to influence behavior through psychological triggers. Gamified engagement strategies includes blends of intrinsic–extrinsic and active–reactive levers (Zhou *et al.*, 2025). Behavioral nudges (such as rewards, social validation and adaptive challenges) play a central role in shaping engagement and driving intention formation (Thomas *et al.*, 2023). Social presence is also fundamental: avatar-mediated interaction, embodied communication and shared experiences enhance enjoyment, and satisfaction underscoring that engagement in the metaverse is both psychological and socially co-constructed (Jang and Kim, 2025).

Gamification consistently correlates with favorable behavioral outcomes, including increased purchase intention, repeat engagement and brand advocacy (Bazi and Hajawi, 2025). These behavioral impacts arise because immersion and engagement act as precursors to user responses. Immersion influences purchase intention and continuous-use intention (Choi, 2022), while high engagement (often triggered by interactive, gamified features) enhances anticipated satisfaction (Al-Adwan *et al.*, 2025; Bousba and Arya, 2022). Experiential dimensions such as immersive sensory appeal and avatar-mediated presence further elevate relational outcomes (Hao *et al.*, 2025; Jang and Kim, 2025), and event-based evidence shows that branded metaverse experiences translate engagement into brand equity outcomes such as awareness, perceived quality and loyalty (Pagani and Xie, 2025). Consequently, gamification has the potential to become a central component of

business development in the metaverse, particularly through campaigns designed to foster emotional connection and sustained participation.

However, sustaining engagement presents challenges. A significant challenge to sustained engagement arises from the fact that digital goods are intangible and infinitely reproducible, which can diminish users' sense of possession and perceived value. By fulfilling users' needs for control and self-identification through sensory-rich interactions, it is possible to foster a stronger psychological bond between users and their digital assets (Pandey and Mukherjee, 2024). This argument extends prior evidence that immersive sensory appeal and avatar-mediated presence elevate relational outcomes (Hao *et al.*, 2025; Jang and Kim, 2025), reframing multi-sensory affordance as a partial remedy to the intangibility problem of digital goods. Furthermore, evidence shows diminishing returns as gamification enhances satisfaction only up to a threshold, after which excessive intensity leads to cognitive overload and reduced user experience (Flavián *et al.*, 2024; Vakeel *et al.*, 2025). Immersive environments can introduce cognitive biases (such as inattention and attentional imbalance) that complicate information processing (Chen *et al.*, 2023). Gamification can mitigate these biases by structuring attention through quests, challenges and reward loops, helping users navigate high-load environments (Flavián *et al.*, 2024). Sharma *et al.* (2024) demonstrate that gamified spaces generate stronger customer-brand relationships, particularly among digitally native users who view interactivity as normal rather than novel. However, although metaverse gamification strategies show immediate benefits, their long-term effects on customer engagement remain underexplored.

### 3.3 Business value creation in the metaverse

The third theme examines how gamification within metaverse environments functions as a driver of business value. Across the literature, the metaverse is framed not merely as a new channel but as an enabler offering firms novel pathways to value creation and distinct innovation trajectories for digital business models (Ezzatian *et al.*, 2025; Mancuso *et al.*, 2023; Sharma *et al.*, 2024). Prior research delineates metaverse-enabled opportunities, distinguishing between internally oriented, product/channel-focused opportunities and customer-oriented opportunities, such as virtual identity affirmation, co-creation and community building, which catalyze virtual transformation of market-facing processes (Mancuso *et al.*, 2023; SanMiguel *et al.*, 2024).

Metaverse activities can generate measurable business value by directly influencing awareness, associations, perceived quality and brand loyalty (Pagani and Xie, 2025), reinforcing the broader argument that gamified metaverse environments contribute not only to engagement but also to measurable brand-equity outcomes (Arya *et al.*, 2024). Gamification can be instrumental in attracting and converting consumers and is consistently linked to strengthened consumer–firm relationships. Metaverse-based gamified marketing increases purchase intention, customer loyalty and positive word-of-mouth, while customer inspiration derived from immersive experiences elevates users' willingness to pay premium prices (Al-Adwan *et al.*, 2025). Complementary empirical evidence demonstrates that gamification marketing activities in the metaverse significantly enhance consumer-based brand equity and consumption retention (Arya *et al.*, 2024). Industry-specific research, such as in tourism, illustrates that the adoption of the metaverse and its gamification mechanics can create competitive advantage by enhancing destination appeal, underscoring gamification's instrumental role in pre-experience branding (Bazi and Hajawi, 2025; Ezzatian *et al.*, 2025). Furthermore, enabling transactions in virtual goods and tokenized digital assets can strengthen brand stickiness and expand firms' reach within metaverse ecosystems (Bazi and Hajawi, 2025). In digital entrepreneurship, practitioners identify gamification as one of the foundational metaverse-enabled concepts (alongside digital twins and co-design) that foster new entrepreneurial ventures and business model diversification (Calandra *et al.*, 2024). This further reinforces the metaverse's role as a technological lever that not only enhances existing offerings but also creates entirely new value creation logics.

Business value can be generated when organizations leverage gamification to support specific strategic objectives, for instance to stimulate brand engagement and enhance awareness (Jacobides *et al.*, 2024). For commercial firms, the metaverse can expand economies of scope and scale at a fraction of the cost of physical expansion. It allows reaching digitally native Gen Z and Alpha consumers who prioritize virtual identity and symbolic participation over traditional physical goods (Heo, 2025). Dwivedi *et al.* (2023) introduce a comprehensive framework for business value creation in the metaverse, emphasizing the strategic interdependence of three elements: (1) a digital strategy calibrated to immersive environments, (2) responsible platform governance to mitigate emerging ethical and privacy risks and (3) stakeholder engagement that connects users, firms and ecosystem partners. Despite its strategic promise, metaverse gamification introduces also new management challenges. Prior research with industry experts emphasizes that traditional marketing metrics are insufficient for capturing metaverse activation effectiveness (Jacquemin *et al.*, 2025). Firms need to adopt expanded measurement paradigms, including nontraditional attention, immersion and co-creation metrics applied across the full funnel from awareness to conversion and loyalty.

### 3.4 Ethics, policy and societal impact

This theme highlights the implications of implementing gamification in metaverse environments. As gamified systems become more immersive, data-rich and behaviorally influential, concerns over long-term user well-being, digital rights and regulatory accountability have become increasingly salient in scholarly discourse. Gamification in the metaverse raises ethical challenges, including risks of addiction, manipulation and data misuse. The features that enhance engagement (immersion, identity fluidity, embodied interaction and XR-enabled presence) also heighten vulnerabilities related to privacy, cognitive overload and deviant behavior. Researchers emphasize the need for ethical frameworks (Dwivedi *et al.*, 2022; Nosikov, 2025) to mitigate risks, including privacy violations, cybersecurity threats and intellectual property disputes (Behera *et al.*, 2024).

Ethical challenges, including data privacy, addiction and manipulation via gamified interfaces, are raised in the reviewed literature. Sharma and colleagues emphasize that gamification can exploit psychological vulnerabilities when misapplied, prompting calls for regulatory frameworks and ethical design principles (Sharma *et al.*, 2024). There is also concern about the long-term cognitive and social impact of sustained gamified interactions in immersive environments. Studies show that immersive gamified environments can distort time perception, induce escapism and foster emotional dependency, particularly among younger or vulnerable users. The literature highlights the psychological risks of persistent virtual engagement, including techno-stress, compulsive use cycles, emotional exhaustion and dissociation from physical reality (Flavián *et al.*, 2024). Emerging research flags concerns over the cognitive and emotional toll of sustained engagement with gamified metaverse environments. Studies warn that exploitative mechanics (such as variable reward schedules, compulsive progression systems and emotionally persuasive avatars) can erode user autonomy and induce maladaptive behaviors (Bousba and Arya, 2022; Sharma *et al.*, 2024). Recent work on gamified social coupons further suggests that even ostensibly playful, network-shared rewards can generate feelings of social embarrassment and pressure that, if poorly designed, may undermine user autonomy and well-being while still driving engagement (Nayal, 2026), reinforcing calls for responsible-metaverse principles (Behera *et al.*, 2024).

A significant concern is the collection and commodification of user data, particularly biometric and behavioral data gathered in VR/AR environments. Activities in the metaverse capture unprecedented levels of sensitive information (including spatial patterns, affective cues, micro-gestures and transaction histories), creating a surveillance-intensive ecosystem that exceeds the protective capacity of traditional cybersecurity frameworks. Without robust governance mechanisms, such data can be exploited for profiling, targeting and algorithmic

discrimination, undermining privacy and autonomy. Scholars call for transparent data governance and sector-specific ethical guidelines to preserve user trust and mitigate privacy vulnerabilities (Ezzatian *et al.*, 2025).

Interestingly, while the commercial adoption of gamified metaverse experiences is accelerating, the literature points to a lag in regulatory oversight. The borderless nature of virtual worlds, combined with decentralized ownership models and fluid user identities, generates legal and governance ambiguities around accountability, identity verification and the regulation of virtual conduct (Dwivedi *et al.*, 2022). These ambiguities extend to gamified practices related to monetization, such as microtransactions and reward-driven consumption loops, which raise concerns regarding financial harm (Sánchez-Adame *et al.*, 2023). There is a lack of clear legal definitions and protections for users in virtual gamified spaces, particularly concerning consent and accountability. Scholars advocate for international policy collaboration and design ethics codes tailored to the immersive and gamified nature of the metaverse. Such contributions mark a proactive shift toward balancing innovation with moral responsibility.

#### 4. GAMIFY: a proposed metaverse gamification framework for value creation

The findings in this review articulate a compelling case for critical, ethically informed engagement with gamification in the metaverse. While gamification holds transformative potential, it also introduces risks related to exploitation, inequity and psychological harm (Sánchez-Adame *et al.*, 2023). To ensure equitable and sustainable deployment, the literature calls for a combination of sound design, impact monitoring and governance to prevent harms. However, existing research, although expanding rapidly, remains fragmented and predominantly descriptive, offering limited integration or guidance. Ultimately, in this section, we move from what gamification can do, to how we can bring it to the service of human dignity and social good.

GAMIFY is an acronym; each letter represents a core pillar, ensuring a holistic approach that balances engagement, business value and ethical responsibility. Overall, the framework bridges design, business and ethics research. As the framework aims to support gamification deployment in metaverse environments, a significant number of its components relate to design aspects being directly linked to the gamification design and mechanics theme identified in the literature. Each component of the framework – Goal-Driven Mechanics, Avatar-Mediated Identity, Multi-Sensory Immersion, Incentivization and Nudges, Fair Governance and Yield Measurement – is derived from research findings that can inform the design, deployment and evaluation of gamification in the metaverse.

The pillars consolidate insights drawn from across the four thematic clusters identified in Section 3. Goal-Driven Mechanics and Multi-Sensory Immersion build on the design and mechanics evidence (e.g. Zhou *et al.*, 2025; Sharma *et al.*, 2024; Vakeel *et al.*, 2025); Avatar-Mediated Identity and Incentivization and Nudges integrate findings from the engagement and behavior cluster (e.g. Arya *et al.*, 2024; Bousba and Arya, 2022; Jang and Kim, 2025); the Yield pillar synthesizes business value insights (e.g. Pagani and Xie, 2025; Jacquemin *et al.*, 2025; Heo, 2025) and Fair Governance is anchored in the ethics, policy and societal-impact stream (e.g. Dwivedi *et al.*, 2022; Behera *et al.*, 2024; Sánchez-Adame *et al.*, 2023). Together, these pillars constitute an integrated conceptual foundation for understanding how gamification in the metaverse can be designed and governed for business value.

While existing studies illuminate specific aspects of metaverse gamification, they rarely integrate these dimensions into a coherent sociotechnical model. To bridge this gap, the present study develops the GAMIFY framework, which consolidates the four thematic clusters into six interrelated pillars for responsible, value-driven metaverse gamification. The framework is presented in Table 4.

GAMIFY provides a structured approach for practitioners to design, implement and evaluate gamified experiences in the metaverse while ensuring long-term engagement, strategic value and ethical integrity. In the subsections that follow, each pillar is presented in detail.



**Table 4.** The GAMIFY framework

| Pillar                                                        | Concept focus                                                                    | Key implementation strategies                                                                          |
|---------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| G – Goal-driven and adaptive mechanics                        | Align game elements with behavioral and business objectives                      | Dynamic difficulty; AI-powered feedback loops; clear goal-reward structures                            |
| A – Avatar-mediated identity and embodiment                   | Foster presence and engagement through customizable avatars                      | Identity personalization; social embodiment systems                                                    |
| M – Multi-sensory immersion and narrative integration         | Leverage spatial, auditory and narrative stimuli to deepen engagement            | Spatial storytelling; multi-sensory layering                                                           |
| I – Incentivization and digital nudges                        | Balance intrinsic and extrinsic motivators while avoiding manipulation           | Transparent reward systems; opt-in nudges; avoidance of dark patterns                                  |
| F – Fair governance                                           | Ensure ethical compliance, privacy and inclusivity through policy integration    | Ethics-by-design tools; data transparency protocols; cross-disciplinary oversight                      |
| Y – Yield-focused evaluation and long-term impact measurement | Track business return on investment (ROI), user well-being and societal outcomes | Longitudinal analytics; user well-being dashboards; multidimensional key performance indicators (KPIs) |
| <b>Source(s):</b> Author's own work                           |                                                                                  |                                                                                                        |

#### 4.1 G – goal-driven and adaptive mechanics

Effective gamification requires alignment between game elements (e.g. points, badges, leaderboards) along with adaptive mechanics (e.g. dynamic difficulty, real-time feedback) and measurable, well-defined behavioral and business objectives (Dwivedi *et al.*, 2022; Thomas *et al.*, 2023). The metaverse amplifies this need due to its immersive and persistent nature (Zhou *et al.*, 2025). Studies demonstrate that adaptive systems – those that dynamically adjust challenges and rewards based on user behavior – significantly enhance engagement and reduce cognitive overload (Lau and Ki, 2021; Vakeel *et al.*, 2025). Success requires goal–mechanic–metric coherence, where every element, from a leaderboard to an AI-driven mentor, is explicitly linked to an outcome (Dai and Bal, 2009). To implement this pillar, it is important to explicitly link game elements (e.g. leaderboards, quests) to target outcomes (e.g. increased brand interaction, learning retention) and utilize real-time analytics to modify difficulty, feedback and rewards, ensuring sustained user motivation (Flavián *et al.*, 2024). Adaptive systems should calibrate challenge, skill balance, support autonomy and cultivate a sense of competence (Bazi and Hajawi, 2025). A core design implication is goal–mechanic–metric coherence: each mechanic must carry a clear rationale and demonstrable effect on outcomes (Jacquemin *et al.*, 2025). This coherence principle echoes Dai and Bal's (2009) early demonstration that virtual-world simulations are most effective when role-play, randomness and reward structures are tied to clearly defined behavioral and learning objectives, an insight that remains relevant for contemporary metaverse design.

#### 4.2 A – avatar-mediated identity and embodiment

Avatars function as critical digital extensions and psychological interface of user identity within metaverse environments (Choi, 2022), serving as powerful mediators of behavior, emotional engagement and social interaction. Luxury brands effectively leverage this by offering digital goods and accessories in virtual environments like Roblox, allowing users to express their identities while expanding brand awareness among younger audiences (Heo, 2025). Empirical research demonstrates that avatar customization capabilities significantly enhance self-presence and foster stronger brand attachments (Jang and Kim, 2025), particularly when users perceive their avatars as authentic representations of their identity (Bousba and Arya, 2022). This is amplified in VR environments where embodied

interactions create more profound psychological and emotional connections. Avatars are central in the metaverse, shaping how users experience identity, presence and sociality (Arya *et al.*, 2024). The visual and symbolic qualities of avatars influence users' attitudes, confidence and behaviors (Bazi and Hajawi, 2025). To implement this pillar, it is important to provide comprehensive avatar personalization options (e.g. physical appearance, abilities and accessories) to facilitate user self-expression and emotional investment. Furthermore, it is important to design avatar-driven interactive systems that leverage the social dimension of avatar-mediated interactions without overwhelming complexity (Ezzatian *et al.*, 2025). To ensure effectiveness, designers must prioritize avatar realism to foster psychological and emotional connections, as the visual and symbolic qualities of avatars directly influence user attitudes and self-congruence (Heo, 2025).

#### 4.3 M – multi-sensory immersion and narrative integration

The metaverse's unique features, including spatial presence and haptic feedback, facilitate significantly deeper emotional engagement compared to conventional digital platforms (Arya *et al.*, 2024; Jang and Kim, 2025; Nosikov, 2025). Narrative-driven gamification, when combined with immersive technologies can be very powerful. To implement this pillar, it is important to include multi-sensory layering (integration of haptic, auditory and visual stimuli) to create cohesive immersive experiences (Ezzatian *et al.*, 2025), a recommendation that directly addresses the intangibility problem identified by Pandey and Mukherjee (2024), whose work shows that multi-sensory affordances help mitigate the shortcomings of metaverse offerings by strengthening users' sense of control over and connection to digital assets. It is also important to embed gamified mechanics within compelling story arcs (Al-Adwan *et al.*, 2025) and design narrative elements that leverage the metaverse's spatial and interactive capabilities (e.g. environmental storytelling through virtual world design). Ensuring narrative congruence (the alignment of mechanics, environment and story) prevents cognitive fragmentation (Flavián *et al.*, 2024) and supports a sustained sense of presence (Bazi and Hajawi, 2025). This positions gamification as a holistic experiential process (Wang and Guo, 2025) by emphasizing the orchestration of multisensory, narrative-consistent sociotechnical systems (Nosikov, 2025). Designing for multi-sensory layering (integration of haptic, auditory and visual stimuli) is essential to create narrative congruence and prevent cognitive fragmentation (Pandey and Mukherjee, 2024).

#### 4.4 I – incentivization and digital nudges

The design of reward systems in metaverse gamification requires careful balance between extrinsic motivators (e.g. tokens, badges) (Sharma *et al.*, 2024) and intrinsic drivers (e.g. mastery, social belonging) (Jang and Kim, 2025; Lau and Ki, 2021), to sustain long-term engagement (Yang *et al.*, 2023). While tokenized rewards have demonstrated effectiveness in boosting platform loyalty and short-term participation, excessive dependence on extrinsic incentives may lead to motivational crowding-out effects and potentially addictive behaviors (Sánchez-Adame *et al.*, 2023). This tension is heightened in immersive environments (Chen *et al.*, 2023; Flavián *et al.*, 2024), where context-sensitive and continuous nudges can become highly persuasive, necessitating ethical frameworks that prevent exploitative designs while maintaining engagement efficacy. Effective systems combine tangible rewards (e.g. non-fungible tokens (NFTs), virtual goods) (Mancuso *et al.*, 2023) with psychological rewards (e.g. social recognition, skill mastery) (Lau and Ki, 2021; Wang and Guo, 2025) and employ progressive reward schedules. Implementing ethical nudge design principles (voluntariness, transparency, avoidance of dark patterns) is essential to mitigate manipulation risks and respect user autonomy (Sánchez-Adame *et al.*, 2023). This situates incentivization not merely as a motivational tactic but as a responsible sociotechnical design process integral to sustainable digital engagement in the metaverse (Dwivedi *et al.*, 2023). Effective incentivization should avoid “dark patterns,” situating



rewarding as responsible sociotechnical design (Nayal, 2026). This recommendation reinforces the broader call for ethically designed reward and microtransaction systems (Sánchez-Adame *et al.*, 2023; Sharma *et al.*, 2024) and aligns with governance-oriented framings of responsible metaverse design (Behera *et al.*, 2024; Dwivedi *et al.*, 2023).

#### 4.5 F – fair governance

The Fair Governance pillar emphasizes the establishment of transparent, accountable and inclusive oversight mechanisms to ensure that gamification in the metaverse operates within clear ethical and legal boundaries (Dwivedi *et al.*, 2023; Thomas *et al.*, 2023). Despite the rapid commercialization of immersive platforms, the literature consistently highlights a notable governance gap: there is a lack of standardized regulations and policy frameworks addressing consent, data monetization and platform accountability in virtual environments (Dwivedi *et al.*, 2022). Without robust regulatory oversight, gamified metaverse experiences risk infringing on user autonomy (Lau and Ki, 2021; Sánchez-Adame *et al.*, 2023) through exploitative reward loops, opaque algorithms and hyper-personalization (Jacobides *et al.*, 2024), potentially leading to compulsive behaviors and disproportionate data harvesting. Dwivedi *et al.* (2022) call for international policy collaboration to define clear legal definitions for virtual goods, biometric data usage and user rights, arguing that only a coordinated regulatory response can mitigate risks of profiling, manipulation and digital exclusion in metaverse ecosystems. Governance is a structural condition for trust, legitimacy and fairness in data-intensive, algorithmically mediated environments (Dwivedi *et al.*, 2022). This pillar therefore foregrounds ethics-by-design practices, data transparency and inclusive stakeholder participation as essential safeguards (Tayal *et al.*, 2022). Governance protocols must also address inclusiveness, ensuring that diverse user groups are not excluded by high-stimuli virtual environments (Dincelli and Jafarian, 2025). By embedding Fair Governance in the GAMIFY framework, practitioners are guided to co-design gamified experiences with stakeholder representation, transparent data practices and enforceable accountability standards, balancing innovation with long-term user well-being and social responsibility.

#### 4.6 Y – yield: measuring long-term value, ROI and societal impact

Effective metaverse gamification extends beyond conventional short-term engagement metrics (e.g. daily active users, click-through rates) toward assessing sustained business value and broader societal implications (Jacobides *et al.*, 2024; Yang *et al.*, 2023). Current research highlights a critical disconnect between immediate behavioral metrics and long-term outcomes (Bazi and Hajawi, 2025; Vakeel *et al.*, 2025), necessitating multidimensional assessment frameworks that capture both organizational ROI and user well-being (Singh *et al.*, 2025). Measurement can include multidimensional KPIs that assess how immersive metaverse events translate into brand equity, including brand awareness, perceived quality and long-term brand loyalty (Pagani and Xie, 2025). A major limitation is the reliance on short-term interaction data, which obscures insights into retention, value creation and potential societal consequences. To implement this pillar, it is important to include longitudinal performance tracking across business and societal metrics. Business-oriented evaluations should incorporate retention rates (Jacobides *et al.*, 2024; Singh *et al.*, 2025), customer lifetime value, mastery progression (Jang and Kim, 2025), ecosystem participation (Mancuso *et al.*, 2023) and conversion efficiency (Arya *et al.*, 2024) across extended user journeys. Societal and ethical evaluation requires integrating digital well-being indicators, inclusiveness and accessibility measures, periodic well-being assessments embedded into user experience flows and metrics derived from privacy, security, and fairness audits and continuous feedback loops (Wang and Guo, 2025). These are essential for distinguishing novelty effects (Vakeel *et al.*, 2025) from sustained impact, ensuring that gamification drives enduring value rather than transient engagement (Bazi and Hajawi, 2025).

## 5. The role of GAMIFY for sustained impact and implementation pathways

This study advances research on gamification in the metaverse by introducing GAMIFY, a sociotechnical framework that integrates design, identity, immersion, incentivization, governance and impact evaluation into a unified architecture for value creation. It is developed specifically for the metaverse context unlike prior non-metaverse specific gamification frameworks such as Chou's Octalysis framework which emphasizes motivational drivers (Chou, 2019), Kumar's framework for gamification in the enterprise which includes elements of behavior, feedback and progression (Kumar, 2013) and the gamification framework by Liu, Santhanam and Webster for guiding design and research (Liu *et al.*, 2017).

The proposed framework also moves beyond the recent metaverse-specific gamification frameworks proposed by Thomas *et al.* (2023) and Xie *et al.* (2026). Specifically, in contrast to the experiential typology developed by Thomas *et al.* (2023), which is focused on experiences through four overarching categories of nudge, flow, alternate reality and hedonic experience, GAMIFY offers an operationalizable deployment structure. GAMIFY does not cover only the gamification designer's perspective but extends to cover governance and measurable outcomes. GAMIFY translates experiential insights into structured design pillars linked to strategic objectives and evaluative metrics. Furthermore, compared to the affordance-driven gamification framework for the metaverse proposed by Xie *et al.* (2026), GAMIFY shifts the focus from short-term engagement to continued impact at the individual, organizational and also societal level. While that framework provides an important affordance-based lens, its primary focus remains interactional.

Table 5 makes these distinctions explicit by positioning GAMIFY against prior gamification frameworks along the analytical dimensions in which their contributions most meaningfully differ. The frameworks are ordered chronologically. The first three frameworks predate or are not specific to the metaverse context, but they are foundational gamification frameworks, while the last three are explicitly developed for metaverse settings. GAMIFY is presented in the final row.

Overall, existing metaverse gamification frameworks prioritize engagement mechanics without embedding governance or long-term societal evaluation. GAMIFY advances this literature by integrating six interdependent pillars into a unified sociotechnical framework. This integration constitutes the primary contribution of the framework. It synthesizes previously disjoint streams, bringing together design, ethics and business value. GAMIFY conceptualizes metaverse gamification not merely as a set of engagement tactics but as a sociotechnical arrangement which brings together technology features, governance and performance metrics. By explicitly embedding Fair Governance and Yield-focused evaluation, the framework positions ethics and impact assessment as constitutive elements of design rather than ex post considerations. Examples of how the framework can be operationalized for different aims are provided in the following paragraphs.

For customer-facing businesses that want to improve market impact, GAMIFY can be leveraged to shift from transactional interactions toward experiential engagement. Goal-driven mechanics may be configured as personalized exploration tasks or progression pathways linked to conversion, cross-category discovery or retention. Avatar-mediated identity can enable product trial and self-representation in virtual environments, reducing post-purchase uncertainty. Multi-sensory immersive spaces can communicate brand narratives and differentiate experiential value. Incentive systems can balance loyalty rewards with intrinsic motivators such as status or community recognition, while Fair Governance can guide the establishment of responsible activity tracking and data management. Yield measurement can extend beyond click-based metrics to include customer lifetime value, return reduction and brand attachment.

For enterprise learning and employee motivation, GAMIFY can be used to support competency-based progression and experiential skill development. Adaptive mechanics allow learning difficulty and feedback to adjust dynamically based on performance. Avatar-based

**Table 5.** Comparison of GAMIFY with prior gamification frameworks across key analytical dimensions

| Framework<br>(Author, year)                                                   | Conceptual foundation and<br>primary lens                                                                           | Domain and metaverse<br>specificity                                          | Stakeholder<br>perspective                                                                   | Treatment of governance<br>and ethics                                                | Temporal horizon and<br>impact level                                                |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Octalysis (Chou, 2019)                                                        | Motivational psychology; eight Core Drives (intrinsic and extrinsic) shaping user engagement                        | Generic gamification model across digital products; not metaverse specific   | End-user (player) perspective on motivation                                                  | Not addressed; engagement design treated independently of normative concerns         | Short to medium-term engagement; individual level                                   |
| Enterprise Gamification (Kumar, 2013)                                         | Behavioral and feedback loop perspective on workplace digital systems; emphasis on progression and reward mechanics | Enterprise/workplace orientation; not metaverse-specific                     | Employer/employee dyad; primarily managerial                                                 | Limited; brief acknowledgment of organizational policy but not structurally embedded | Engagement cycle horizon at the individual employee level                           |
| Gamification Design and Research Framework (Liu <i>et al.</i> , 2017)         | Research framework grounded in Information-systems and integrative design research                                  | Pre-metaverse digital systems; not metaverse-specific                        | Researcher and designer perspectives, with emphasis on theory development                    | Acknowledged as a relevant consideration but not central to the framework            | Predominantly individual-level outcomes; limited longitudinal or societal lens      |
| Experiential Typology of Metaverse Gamification (Thomas <i>et al.</i> , 2023) | Experiential typology grounded in user-experience theory; categorization of gamified experiences                    | Metaverse-specific; experiential lens centered on the designer's perspective | Designer perspective on four experience archetypes (nudge, flow, alternate reality, hedonic) | Limited; descriptive treatment of experiences without normative integration          | Experiential moments at the individual level; societal-level outcomes not addressed |
| Affordance-Driven Metaverse Gamification Framework (Xie <i>et al.</i> , 2026) | Affordance theory applied to gamified social interaction within metaverse environments                              | Metaverse-specific; affordance-driven interactional lens                     | Interactional perspective focused on user-platform-peer dynamics                             | Peripheral; governance is acknowledged but not embedded as a structural element      | Short-term interactional engagement; predominantly individual or dyadic in scope    |

(continued)

Table 5. Continued

| Framework<br>(Author, year)       | Conceptual foundation and<br>primary lens                                                                                                                                                                                                     | Domain and metaverse<br>specificity                                                                                                                                 | Stakeholder<br>perspective                                                                                   | Treatment of governance<br>and ethics                                                                                      | Temporal horizon and<br>impact level                                                                                        |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| GAMIFY<br>(Author's<br>Framework) | Sociotechnical systems<br>perspective integrating six<br>interdependent pillars: Goal-<br>driven mechanics, Avatar-<br>mediated identity, Multi-<br>sensory immersion,<br>Incentivization, Fair<br>governance and Yield-focused<br>evaluation | Metaverse-specific;<br>integrative sociotechnical<br>architecture spanning design,<br>identity, immersion,<br>incentivization, governance<br>and outcome evaluation | Multi-stakeholder:<br>jointly addresses<br>designers,<br>organizations, end-<br>users and societal<br>actors | Constitutive; Fair<br>Governance is embedded<br>as a structural design pillar<br>with explicit ethical<br>responsibilities | Medium and long-term and<br>multidimensional; explicit<br>attention to individual,<br>organizational and societal<br>levels |
| Source(s): Author's own work      |                                                                                                                                                                                                                                               |                                                                                                                                                                     |                                                                                                              |                                                                                                                            |                                                                                                                             |

role-play can enable experiential training for leadership, negotiation, safety or customer interaction scenarios. Immersive structures can be employed to increase completion and persistence. Incentivization can be directed toward mastery and skill progression rather than purely extrinsic rewards to avoid superficial participation. Governance considerations can include privacy and protection of learner autonomy. Yield can be assessed through knowledge retention, skill transfer, performance improvement and workforce capability development.

Across contexts, there is a common implementation principle: organizations should ensure goal–mechanic–metric coherence, where each gamification element is explicitly linked to behavioral objectives, governance safeguards and multidimensional performance outcomes.

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## 6. Future research agenda

The synthesis of state-of-the-art research on gamification design and business outcomes in the context of the metaverse shows that the fusion of gamification and the metaverse can reshape digital engagement and enhance value creation. The thematic analysis identified four interconnected domains: design and mechanics, engagement and behavior, business value creation, ethics, policy and societal impact. These domains illustrate how design choices feed into immersive engagement processes, which in turn fuel business outcomes. At the same time, the mechanisms that generate value also heighten risks related to privacy intrusion, persuasive manipulation, inequitable participation and governance ambiguity, underscoring the need for balanced guardrails as these environments evolve.

Despite the growing body of literature on gamification in the metaverse, several significant gaps remain that limit the field's conceptual depth and practical applicability. One of the most critical limitations is the lack of investigation into the long-term impact of gamification. While many studies focus on interactions and behavioral triggers, few examine how gamification affects long-term retention, commitment or emotional investment within immersive environments. Longitudinal studies are critically needed to assess gamification effects over time. By investigating user behavior, engagement metrics and loyalty indicators over extended periods, scholars can determine whether gamification merely triggers initial interest or can contribute to sustained user commitment and business value. Furthermore, research is needed on long-term implications for user well-being and the particular impact on sensitive user groups (for instance, minors). Field studies, panel data analyses and multi-period behavioral datasets are essential for such research.

Another gap pertains to ethical considerations, which are often overlooked or superficially addressed. The immersive and persuasive nature of gamified systems in the metaverse raises complex issues concerning user autonomy, privacy and transparency, and inclusiveness. The literature provides insufficient critical discourse on how gamification may reinforce behavioral manipulation, exclude marginalized groups or infringe on digital rights. The immersive and persistent nature of metaverse environments amplifies the influence of algorithmic personalization and behavioral nudging. While adaptive guidance can enhance user experience and goal attainment, it also raises concerns regarding, over-persuasion and erosion of autonomy. Future research should investigate boundary conditions between supportive and coercive forms of influence, user perceptions of fairness and transparency, and the effectiveness of design mechanisms that preserve informed choice. Experimental, mixed-method and design science approaches can help research these issues.

Furthermore, there is a notable absence of assessment frameworks for gamification within metaverse platforms. Most studies employ ad hoc models or platform-specific strategies, hindering replicability and comparative analysis across ecosystems. Evaluation criteria are often embedded within proprietary platform infrastructures or designed around idiosyncratic campaign objectives. Furthermore, comparative analysis across ecosystems is impeded, since different metaverse environments employ distinct interaction logics and governance structures. Without common evaluative dimensions, it becomes difficult to determine

whether observed outcomes stem from gamification design or general platform characteristics. This can be researched through comparative multi-platform studies.

Theoretical integration is another vital frontier. There is a compelling need for comprehensive models that synthesize behavioral psychology, game theory and ethics-related theorizing. Current research often draws selectively from one of these domains emphasizing motivational drivers, strategic interaction or normative concerns without systematically connecting them. Such integrative theorizing can offer a more holistic understanding of how gamified mechanisms influence decision-making, emotional responses and social interactions in the metaverse. It would also enable scholars to move toward a multidimensional conception of value creation that incorporates behavioral effectiveness, systemic performance and ethical accountability as interdependent dimensions.

Finally, research is needed on role of value creation through gamification in the metaverse within the overall context of value creation through digital transformation. While metaverse gamification initiatives are often implemented as discrete projects, they increasingly intersect with digitalization strategies involving omnichannel ecosystems and virtual service delivery. Understanding how immersive gamification contributes to (or detracts from) strategic digital objectives therefore represents a critical research frontier. Future work should examine how organizations integrate immersive gamification into broader digital initiatives and how value is distributed across ecosystem actors. Research can analyze issues of value appropriation, redistribution, power asymmetries and long-term ecosystem sustainability. Research should also explore when gamification can function as a peripheral engagement layer and when it can be leveraged as a core orchestrating mechanism within digital business models. This can be studied through longitudinal multi-case studies of organizations undergoing digital transformation, examining how gamification initiatives integrate with broader digital infrastructures, governance mechanisms and business model innovation.

To support scholars in navigating this future research agenda, it is helpful to prioritize the directions outlined above. Two areas should be considered the most urgent. The first is ethical governance: the immersive, persuasive and data-intensive nature of gamified metaverse environments creates immediate risks around user autonomy, biometric and behavioral data use, manipulation and inclusion. Without timely scholarly engagement, governance frameworks will continue to lag commercial deployment, with consequences that are difficult to reverse. The second is cross-platform knowledge integration. Because metaverse ecosystems currently differ substantially in their architectures, data models and design logics, findings generated within one platform rarely travel to another. Establishing common measurement frameworks and baseline design standards is a prerequisite for comparative research and, ultimately, for building cumulative knowledge across the field.

A second tier of priorities operates on a medium-term horizon and encompasses longitudinal empirical work on user engagement, retention and well-being, as well as deeper theoretical integration across behavioral, psychological and strategic perspectives. Over the longer term, research might productively situate metaverse gamification within broader digital transformation strategies, with particular attention to value appropriation and ecosystem-level dynamics, while also examining how immersive gamification intersects with adjacent developments in AI agents, generative content and decentralized identity systems. Treating these directions as an ordered rather than undifferentiated set allows scholars to concentrate effort where conceptual and societal stakes are highest.

Taken together, these research avenues reconnect directly to the core findings of the literature review. The four domains identified are deeply interdependent, yet current scholarship tends to examine them in isolation. Advancing the field therefore requires moving beyond fragmented analyses toward integrative, longitudinal inquiries that can transform metaverse gamification from a collection of engagement techniques into a new sociotechnical paradigm of value creation.

## 7. Limitations

Several limitations of this review should be acknowledged. First, although the search drew on three extensive databases (Scopus, Web of Science and the AIS eLibrary) and was extended through systematic backward and forward citation searches, the final corpus comprises 38 articles. While this is consistent with the still-emerging nature of research at the intersection of gamification, the metaverse and business value, the relatively small number of articles constrains the generalizability of the findings. Conclusions about the universal applicability of the GAMIFY framework should therefore be made cautiously, as the evidence base is unevenly distributed across industries: retail, marketing and tourism are comparatively well represented, whereas sectors such as financial services, healthcare-related business contexts, public services and heavy industries remain underexplored. As a result, framework dimensions that have been most extensively examined in consumer-facing settings (e.g. avatar-mediated identity and incentivization) may need contextual recalibration when applied in business-to-business, regulated or workplace environments. Second, the review is limited to peer-reviewed English-language publications and excludes gray literature, which may result in greater representation of academic perspectives while offering more limited coverage of rapidly evolving industry practices and practitioner reports. Third, the field itself is moving quickly, and metaverse technologies, platforms and governance arrangements are likely to evolve substantively beyond the snapshot provided here. Accordingly, the findings and the proposed GAMIFY framework should be interpreted as a research-grounded yet evolving foundation, intended to guide future empirical refinement as metaverse ecosystems, organizational practices and governance structures continue to mature.

## 8. Conclusion

This study set out to synthesize extant research on gamification in the metaverse for business value. Through an SLR of 38 high-quality publications, the findings demonstrate that while gamification in the metaverse can enhance engagement, strengthen relationships and enable innovative digital business models, it simultaneously introduces governance, ethical and societal challenges that cannot be treated as peripheral concerns. In response to the fragmented yet rapidly expanding body of knowledge, the article introduces the GAMIFY framework integrating Goal-driven mechanics, Avatar-mediated identity, Multi-sensory immersion, Incentivization, Fair governance and Yield-focused evaluation. By embedding governance and impact assessment alongside design and engagement mechanics, GAMIFY advances the discourse from short-term interaction metrics toward sustained, responsible value creation. Overall, this review contributes conceptual advancement and practical direction. It reframes metaverse gamification not merely as a set of engagement tactics but as a strategic value creation instrument. As immersive technologies continue to evolve, the future of metaverse gamification will depend on organizations' ability to align design innovation with governance safeguards and multidimensional performance evaluation, ensuring that immersive engagement translates into value.

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## References

- Afkar, E., Hamsal, M., Kartono, R. and Furinto, A. (2022), "Prediction of perceived consumer experience, perceived brand engagement, and gamification towards the intention to use metaverse: an extended TAM approach", *Proceedings of the 2022 6th International Conference on Information Technology, Information Systems and Electrical Engineering (ICITISEE)*, pp. 239-244, doi: [10.1109/ICITISEE57756.2022.10057740](https://doi.org/10.1109/ICITISEE57756.2022.10057740).



- Akbarighatar, P., Pappas, I.O., Purao, S. and Vassilakopoulou, P. (2025), "Enacting responsible AI: a configurational analysis of AI principles in practice", *Information Systems Frontiers*, Vol. 28 No. 1, pp. 61-87, doi: [10.1007/s10796-025-10618-x](https://doi.org/10.1007/s10796-025-10618-x).
- Al-Adwan, A.S., Yaseen, H., Alkhwaldi, A.F., Jafar, R.M.S., Fauzi, M.A. and Abdullah, A. (2025), "Treasure hunting for brands: metaverse marketing gamification effects on purchase intention, WOM, and loyalty", *Journal of Global Marketing*, Vol. 38 No. 4, pp. 392-416, doi: [10.1080/08911762.2025.2463897](https://doi.org/10.1080/08911762.2025.2463897).
- Arya, V., Sambyal, R., Sharma, A. and Dwivedi, Y.K. (2024), "Brands are calling your AVATAR in metaverse – a study to explore XR-based gamification marketing activities and consumer-based brand equity in virtual world", *Journal of Consumer Behaviour*, Vol. 23 No. 2, pp. 556-585, doi: [10.1002/cb.2214](https://doi.org/10.1002/cb.2214).
- Bazi, S. and Hajawi, D. (2025), "Customer inspiration in the metaverse: antecedents, mechanisms, and outcomes", *Journal of Retailing and Consumer Services*, Vol. 87, 104439, doi: [10.1016/j.jretconser.2025.104439](https://doi.org/10.1016/j.jretconser.2025.104439).
- Behera, R.K., Janssen, M., Rana, N.P., Bala, P.K. and Chakraborty, D. (2024), "Responsible metaverse: ethical metaverse principles for guiding decision-making and maintaining complex relationships for businesses in 3D virtual spaces", *Decision Support Systems*, Vol. 187, 114337, doi: [10.1016/j.dss.2024.114337](https://doi.org/10.1016/j.dss.2024.114337).
- Boell, S.K. and Cecez-Kecmanovic, D. (2015), "On being 'systematic' in literature reviews in IS", *Journal of Information Technology*, Vol. 30 No. 2, pp. 161-173, doi: [10.1057/jit.2014.26](https://doi.org/10.1057/jit.2014.26).
- Bousba, Y. and Arya, V. (2022), "Let's connect in metaverse: brand's new destination to increase consumers' affective brand engagement and their satisfaction and advocacy", *Journal of Content, Community and Communication*, Vol. 15 No. 8, pp. 276-293, doi: [10.31620/JCCC.06.22/19](https://doi.org/10.31620/JCCC.06.22/19).
- Calandra, D., Oppioli, M., Sadraei, R., Jafari-Sadeghi, V. and Biancone, P.P. (2024), "Metaverse meets digital entrepreneurship: a practitioner-based qualitative synthesis", *International Journal of Entrepreneurial Behavior and Research*, Vol. 30 Nos 2/3, pp. 666-686, doi: [10.1108/IJEBR-01-2023-0041](https://doi.org/10.1108/IJEBR-01-2023-0041).
- Cha, S., Kim, C.Y. and Tang, Y. (2024), "Gamification in the metaverse: affordance, perceived value, flow state, and engagement", *International Journal of Tourism Research*, Vol. 26 No. 2, e2635, doi: [10.1002/jtr.2635](https://doi.org/10.1002/jtr.2635).
- Chen, J., Xi, N., Pohjonen, V. and Hamari, J. (2023), "Paying attention in metaverse: an experiment on spatial attention allocation in extended reality shopping", *Information Technology and People*, Vol. 36 No. 8, pp. 255-283, doi: [10.1108/ITP-09-2021-0674](https://doi.org/10.1108/ITP-09-2021-0674).
- Chernbumroong, S., Ariya, P., Yolthasart, S., Wongwan, N., Intawong, K. and Puritat, K. (2024), "Comparing the impact of non-gamified and gamified virtual reality in digital twin virtual museum environments: a case study of Wieng Yong house museum, Thailand", *Heritage*, Vol. 7 No. 4, pp. 1870-1892, doi: [10.3390/heritage7040089](https://doi.org/10.3390/heritage7040089).
- Choi, Y. (2022), "A study on factors affecting the user experience of metaverse service", *International Journal of Information Systems in the Service Sector*, Vol. 14 No. 1, pp. 1-17, doi: [10.4018/IJISS.313379](https://doi.org/10.4018/IJISS.313379).
- Chou, Y.-K. (2019), *Actionable Gamification: Beyond Points, Badges, and Leaderboards*, Packt Publishing, Birmingham.
- Csikszentmihalyi, M. (1990), *Flow: The Psychology of Optimal Experience*, Harper & Row, New York.
- Dai, E. and Bal, J. (2009), "Harmonising culture in co-operative business ventures: using a simulation in a metaverse", *Proceedings of the 3rd European Conference on Games Based Learning*, Graz, Austria, pp. 412-420.
- Deci, E.L. and Ryan, R.M. (1985), *Intrinsic Motivation and Self-Determination in Human Behavior*, Springer, Boston, MA, doi: [10.1007/978-1-4899-2271-7](https://doi.org/10.1007/978-1-4899-2271-7).
- Deterding, S., Dixon, D., Khaled, R. and Nacke, L. (2011), "From game design elements to gamefulness: defining 'gamification'", *Proceedings of the 15th International Academic*

- 
- MindTrek Conference: Envisioning Future Media Environments*, ACM, Tampere, pp. 9-15, doi: [10.1145/2181037.2181040](https://doi.org/10.1145/2181037.2181040).
- Dincelli, E. and Jafarian, H. (2025), "Exploring the agentic metaverse's potential for transforming cybersecurity workforce development", *MIS Quarterly Executive*, Vol. 24 No. 4, pp. 317-330, doi: [10.17705/2msqe.00122](https://doi.org/10.17705/2msqe.00122).
- Dolata, M. and Schwabe, G. (2023), "What is the metaverse and who seeks to define it? Mapping the site of social construction", *Journal of Information Technology*, Vol. 38 No. 3, pp. 239-266, doi: [10.1177/02683962231159927](https://doi.org/10.1177/02683962231159927).
- Dwivedi, Y.K., Hughes, L., Baabdullah, A.M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M.M., Dennehy, D., Metri, B., Buhalis, D., Cheung, C.M., Conboy, K., Doyle, R., Dubey, R., Dutot, V., Felix, R., Goyal, D., Gustafsson, A., Hinsch, C., Jebabli, I., Janssen, M., Kim, Y.G., Kim, J., Koss, S., Kreps, D., Kshetri, N., Kumar, V., Ooi, K.B., Papagiannidis, S., Pappas, I.O., Polviou, A., Park, S.M., Pandey, N., Queiroz, M.M., Raman, R., Rauschnabel, P.A., Shirish, A., Sigala, M., Spanaki, K., Wei-Han Tan, G., Tiwari, M.K., Viglia, G. and Wamba, S.F. (2022), "Metaverse beyond the hype: multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, Vol. 66, 102542, doi: [10.1016/j.ijinfomgt.2022.102542](https://doi.org/10.1016/j.ijinfomgt.2022.102542).
- 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., Flieri, R., Flavián, C., Gustafsson, A., Hinsch, C., Hollensen, S., Jain, V., Kim, J., Krishen, A.S., Lartey, J.O., Pandey, N., Ribeiro-Navarrete, S., Raman, R., Rauschnabel, P.A., Sharma, A., Sigala, M., Veloutsou, C. and Wirtz, J. (2023), "Metaverse marketing: how the metaverse will shape the future of consumer research and practice", *Psychology and Marketing*, Vol. 40 No. 4, pp. 750-776, doi: [10.1002/mar.21767](https://doi.org/10.1002/mar.21767).
- Ezzatian, S., Toghraee, M.T. and Torabi Farsani, N. (2025), "Branding tourism destinations in the metaverse: insights from professionals and researchers", *Journal of Tourism Futures*, doi: [10.1108/JTF-08-2024-0176](https://doi.org/10.1108/JTF-08-2024-0176).
- Flavián, C., Ibáñez-Sánchez, S., Orús, C. and Barta, S. (2024), "The dark side of the metaverse: the role of gamification in event virtualization", *International Journal of Information Management*, Vol. 75, 102726, doi: [10.1016/j.ijinfomgt.2023.102726](https://doi.org/10.1016/j.ijinfomgt.2023.102726).
- Grand View Research (2025), "Industrial Metaverse market (2025-2030)", Grand View Research, available at: <https://www.grandviewresearch.com> (accessed May 2025).
- Gusenbauer, M. and Haddaway, N.R. (2020), "Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of google scholar, PubMed, and 26 other resources", *Research Synthesis Methods*, Vol. 11 No. 2, pp. 181-217, doi: [10.1002/jrsm.1378](https://doi.org/10.1002/jrsm.1378).
- Hao, Y., Shao, W., Quach, S. and Zhang, Y. (2025), "Digital luxury: how avatar marketing drives consumer engagement for luxury brands", *Asia Pacific Journal of Marketing and Logistics*, pp. 1-31, doi: [10.1108/APJML-02-2025-0225](https://doi.org/10.1108/APJML-02-2025-0225).
- Heo, J. (2025), "Marketing luxury fashion in the metaverse: the case of Gucci town on roblox", *Thunderbird International Business Review*, tie.70024, doi: [10.1002/tie.70024](https://doi.org/10.1002/tie.70024).
- Hu, X., Rousseau, R. and Chen, J. (2011), "On the definition of forward and backward citation generations", *Journal of Informetrics*, Vol. 5 No. 1, pp. 27-36, doi: [10.1016/j.joi.2010.07.004](https://doi.org/10.1016/j.joi.2010.07.004).
- Jacobides, M.G., Ma, M.D., Trantopoulos, K. and Vassalos, V. (2024), "The business value of gamification", *California Management Review*, Vol. 66 No. 2, pp. 91-107, doi: [10.1177/00081256231218469](https://doi.org/10.1177/00081256231218469).
- Jacquemin, P., Gräf, M., Hendriks, P. and Thao, T.N.P. (2025), "Virtual experiences, real impact: rethinking brand engagement in the metaverse", *PACIS 2025 Proceedings, presented at the Pacific Asia Conference on Information Systems (PACIS)*, AIS eLibrary.
- Jang, H. and Kim, Y. (2025), "The effects of social interaction and brand engagement in metaverse brand stores on consumer enjoyment, satisfaction, and purchase intentions", *Journal of Interactive Advertising*, pp. 1-20, doi: [10.1080/15252019.2025.2562215](https://doi.org/10.1080/15252019.2025.2562215).
- Kango, U., Gupta, A. and Sharma, D. (2025), "An exploratory analysis of metaverse from a lefebvrian lens", *Communications of the Association for Information Systems*, Vol. 55.

- Kitchenham, B. (2004), "Procedures for performing systematic reviews", Joint Technical Report TR/SE-0401, Keele University and NICTA, Keele.
- Kitchenham, B., Pearl Brereton, O., Budgen, D., Turner, M., Bailey, J. and Linkman, S. (2009), "Systematic literature reviews in software engineering – a systematic literature review", *Information and Software Technology*, Vol. 51 No. 1, pp. 7-15, doi: [10.1016/j.infsof.2008.09.009](https://doi.org/10.1016/j.infsof.2008.09.009).
- Koivisto, J. and Hamari, J. (2019), "The rise of motivational information systems: a review of gamification research", *International Journal of Information Management*, Vol. 45, pp. 191-210, doi: [10.1016/j.ijinfomgt.2018.10.013](https://doi.org/10.1016/j.ijinfomgt.2018.10.013).
- Kostelić, K. and Etinger, D. (2025), "Metaverse business models and framework: a systematic search with narrative synthesis", *Systems*, Vol. 13 No. 11, p. 968, doi: [10.3390/systems13110968](https://doi.org/10.3390/systems13110968).
- Kraus, S., Mahto, R.V. and Walsh, S.T. (2023), "The importance of literature reviews in small business and entrepreneurship research", *Journal of Small Business Management*, Vol. 61 No. 3, pp. 1095-1106, doi: [10.1080/00472778.2021.1955128](https://doi.org/10.1080/00472778.2021.1955128).
- Krüger, K., Weking, J., Fietl, E., Böttcher, T., Kowalkiewicz, M. and Krcmar, H. (2025), "Value drivers for metaverse business models: a complementor perspective", *Journal of Management Information Systems*, Vol. 42 No. 1, pp. 143-173, doi: [10.1080/07421222.2025.2452679](https://doi.org/10.1080/07421222.2025.2452679).
- Kumar, J. (2013), "Gamification at work: designing engaging business software", in Marcus, A. (Ed.), *Design, User Experience, and Usability: Health, Learning, Playing, Cultural, and Cross-Cultural User Experience*, Springer, Berlin, pp. 528-537, doi: [10.1007/978-3-642-39241-2\\_58](https://doi.org/10.1007/978-3-642-39241-2_58).
- Lau, O. and Ki, C.-W. (2021), "Can consumers' gamified, personalized, and engaging experiences with VR fashion apps increase in-app purchase intention by fulfilling needs?", *Fashion and Textiles*, Vol. 8 No. 1, p. 36, doi: [10.1186/s40691-021-00270-9](https://doi.org/10.1186/s40691-021-00270-9).
- Liu, D., Santhanam, R. and Webster, J. (2017), "Toward meaningful engagement: a framework for design and research of gamified information systems", *MIS Quarterly*, Vol. 41 No. 4, pp. 1011-1034, doi: [10.25300/MISQ/2017/41.4.01](https://doi.org/10.25300/MISQ/2017/41.4.01).
- Mancuso, I., Messeni Petruzzelli, A. and Panniello, U. (2023), "Digital business model innovation in metaverse: how to approach virtual economy opportunities", *Information Processing and Management*, Vol. 60 No. 5, 103457, doi: [10.1016/j.ipm.2023.103457](https://doi.org/10.1016/j.ipm.2023.103457).
- Marabelli, M. and Newell, S. (2023), "Responsibly strategizing with the metaverse: business implications and DEI opportunities and challenges", *The Journal of Strategic Information Systems*, Vol. 32 No. 2, 101774, doi: [10.1016/j.jsis.2023.101774](https://doi.org/10.1016/j.jsis.2023.101774).
- Moon, J. and Han, S.-L. (2023), "The effect of gamified brand experience using metaverse on user's purchase intention and brand attitude: moderating effect of user-to-user interactivity", *Journal of Channel and Retailing*, Vol. 28 No. 4, pp. 81-106, doi: [10.17657/jcr.2023.10.31.4](https://doi.org/10.17657/jcr.2023.10.31.4).
- Nayal, P. (2026), "Embarrassed but hooked: how gamified social coupons drive users to spread PWOM in the metaverse", *Journal of Promotion Management*, Vol. 32 No. 1, pp. 38-58, doi: [10.1080/10496491.2026.2615459](https://doi.org/10.1080/10496491.2026.2615459).
- Nosikov, A. (2025), "Virtualization of communication in metaverses: key trends and prospects", *Proceedings of the 2025 Communication Strategies in Digital Society Seminar (ComSDS)*, pp. 254-257, doi: [10.1109/ComSDS65569.2025.10971286](https://doi.org/10.1109/ComSDS65569.2025.10971286).
- Okoli, C. (2015), "A guide to conducting a standalone systematic literature review", *Communications of the Association for Information Systems*, Vol. 37 No. 1, doi: [10.17705/1CAIS.03743](https://doi.org/10.17705/1CAIS.03743).
- Pagani, M. and Xie, L. (2025), "Customer experiences in branded metaverse events: effects on brand equity", *Journal of Interactive Marketing*, Vol. 61 No. 1, pp. 1-24, doi: [10.1177/10949968251334302](https://doi.org/10.1177/10949968251334302).
- Pandey, D. and Mukherjee, S. (2024), "Can multi-sensory affordance mitigate the shortcomings of metaverse offerings?", *Journal of Marketing Theory and Practice*, Vol. 34 No. 1, pp. 55-87, doi: [10.1080/10696679.2024.2404422](https://doi.org/10.1080/10696679.2024.2404422).
- Rincon Soto, I.B. and Sanchez Leon, N.S. (2022), "How artificial intelligence will shape the future of metaverse: a qualitative perspective", *Metaverse Basic and Applied Research*, Vol. 1, p. 12, doi: [10.56294/mr202212](https://doi.org/10.56294/mr202212).

- Rowe, F. (2014), "What literature review is not: diversity, boundaries and recommendations", *European Journal of Information Systems*, Vol. 23 No. 3, pp. 241-255, doi: [10.1057/ejis.2014.7](https://doi.org/10.1057/ejis.2014.7).
- Sailer, M., Hense, J.U., Mayr, S.K. and Mandl, H. (2017), "How gamification motivates: an experimental study of the effects of specific game design elements on psychological need satisfaction", *Computers in Human Behavior*, Vol. 69, pp. 371-380, doi: [10.1016/j.chb.2016.12.033](https://doi.org/10.1016/j.chb.2016.12.033).
- Sánchez-Adame, L.M., Monroy-Rodríguez, G., Mendoza, S., Decouchant, D. and Mateos-Papis, A.P. (2023), "Framework for ethically designed microtransactions in the metaverse", *IEEE Access*, Vol. 11, pp. 140687-140700, doi: [10.1109/ACCESS.2023.3341057](https://doi.org/10.1109/ACCESS.2023.3341057).
- SanMiguel, P., Sádaba, T. and Sayeed, N. (2024), "Fashion brands in the metaverse: achievements from a marketing perspective", *Journal of Global Fashion Marketing*, Vol. 15 No. 3, pp. 320-340, doi: [10.1080/20932685.2024.2331518](https://doi.org/10.1080/20932685.2024.2331518).
- Schryen, G. (2013), "Revisiting IS business value research: what we already know, what we still need to know, and how we can get there", *European Journal of Information Systems*, Vol. 22 No. 2, pp. 139-169, doi: [10.1057/ejis.2012.45](https://doi.org/10.1057/ejis.2012.45).
- Seaborn, K. and Fels, D.I. (2015), "Gamification in theory and action: a survey", *International Journal of Human-Computer Studies*, Vol. 74, pp. 14-31, doi: [10.1016/j.ijhcs.2014.09.006](https://doi.org/10.1016/j.ijhcs.2014.09.006).
- Sharma, W., Lim, W.M., Kumar, S., Verma, A. and Kumra, R. (2024), "Game on! A state-of-the-art overview of doing business with gamification", *Technological Forecasting and Social Change*, Vol. 198, 122988, doi: [10.1016/j.techfore.2023.122988](https://doi.org/10.1016/j.techfore.2023.122988).
- Singh, G., Roy, S.K., Apostolidis, C., Quaddus, M. and Sadeque, S. (2025), "Identifying the metaverse value recipe(s) affecting customer engagement and well-being in retailing", *Technological Forecasting and Social Change*, Vol. 210, 123870, doi: [10.1016/j.techfore.2024.123870](https://doi.org/10.1016/j.techfore.2024.123870).
- Suh, A. (2024), "How users cognitively appraise and emotionally experience the metaverse: focusing on social virtual reality", *Information Technology and People*, Vol. 37 No. 4, pp. 1613-1641, doi: [10.1108/ITP-06-2022-0461](https://doi.org/10.1108/ITP-06-2022-0461).
- Tayal, S., Rajagopal, K. and Mahajan, V. (2022), "Virtual reality based metaverse of gamification", *Proceedings of the 2022 6th International Conference on Computing Methodologies and Communication (ICCMC)*, pp. 1597-1604, doi: [10.1109/ICCMC53470.2022.9753727](https://doi.org/10.1109/ICCMC53470.2022.9753727).
- Thomas, N.J., Baral, R., Crocco, O.S. and Mohanan, S. (2023), "A framework for gamification in the metaverse era: how designers envision gameful experience", *Technological Forecasting and Social Change*, Vol. 193, 122544, doi: [10.1016/j.techfore.2023.122544](https://doi.org/10.1016/j.techfore.2023.122544).
- Tranfield, D., Denyer, D. and Smart, P. (2003), "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", *British Journal of Management*, Vol. 14 No. 3, pp. 207-222, doi: [10.1111/1467-8551.00375](https://doi.org/10.1111/1467-8551.00375).
- Vakeel, K.A., Chakraborty, S. and Black, L. (2025), "Remote work in the metaverse: the impact of gamification and online social connectedness on job satisfaction", *Decision Support Systems*, Vol. 193, 114447, doi: [10.1016/j.dss.2025.114447](https://doi.org/10.1016/j.dss.2025.114447).
- Vidal-Tomás, D. (2023), "The illusion of the metaverse and meta-economy", *International Review of Financial Analysis*, Vol. 86, 102560, doi: [10.1016/j.irfa.2023.102560](https://doi.org/10.1016/j.irfa.2023.102560).
- Wang, Y. and Guo, R. (2025), "How does the metaverse tourism experience form tourists' happiness: a mixed-methods study", *Journal of Vacation Marketing*, doi: [10.1177/13567667241307958](https://doi.org/10.1177/13567667241307958).
- Wasiq, M., Bashar, A., Khan, I. and Nyagadza, B. (2024), "Unveiling customer engagement dynamics in the metaverse: a retrospective bibliometric and topic modelling investigation", *Computers in Human Behavior Reports*, Vol. 16, 100483, doi: [10.1016/j.chbr.2024.100483](https://doi.org/10.1016/j.chbr.2024.100483).
- Webster, J. and Watson, R.T. (2002), "Analyzing the past to prepare for the future: writing a literature review", *MIS Quarterly*, Vol. 26 No. 2, pp. xiii-xxiii, doi: [10.2307/4132319](https://doi.org/10.2307/4132319).
- Williams, R.I., Clark, L.A., Clark, W.R. and Raffo, D.M. (2021), "Re-examining systematic literature review in management research: additional benefits and execution protocols", *European Management Journal*, Vol. 39 No. 4, pp. 521-533, doi: [10.1016/j.emj.2020.09.007](https://doi.org/10.1016/j.emj.2020.09.007).

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- Xi, N., Chen, J., Gama, F., Korkeila, H. and Hamari, J. (2024), "Acceptance of the metaverse: a laboratory experiment on augmented and virtual reality shopping", *Internet Research*, Vol. 34 No. 7, pp. 82-117, doi: [10.1108/INTR-05-2022-0334](https://doi.org/10.1108/INTR-05-2022-0334).
- Xie, B., Shiratuddin, M.F., Hamadi, M., Park, J.Y. and Duong, T.-T. (2026), "Designing gamified social interaction for Gen Z in the metaverse: a framework-oriented systematic literature review", *Journal of Metaverse*, No. 6, pp. 57-70, doi: [10.57019/jmv.1736387](https://doi.org/10.57019/jmv.1736387).
- Yang, X., Xi, N., Tang, H. and Hamari, J. (2023), "Gamification and marketing management: a literature review and future agenda", *AMCIS 2023 Proceedings*.
- Zhang, J., Quoquab, F. and Mohammad, J. (2025), "'Do video game players dream of metaverse traveling?' The role of gamification technology and game immersion experience", *Tourism Review*, Vol. 81 No. 2, pp. 807-838, doi: [10.1108/TR-09-2024-0821](https://doi.org/10.1108/TR-09-2024-0821).
- Zhou, Z., Chen, Z., Li, W., Zhang, Y. and Jin, X.-L. (2025), "Demystifying the dimensions and roles of metaverse gaming experience value: a multi-study investigation", *Journal of Management Information Systems*, Vol. 42 No. 1, pp. 39-69, doi: [10.1080/07421222.2025.2452014](https://doi.org/10.1080/07421222.2025.2452014).

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