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Mapping the Landscape of Gamification and User Engagement Research: A Bibliometric Analysis (2015–2025)

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ABSTRACT

Purpose: This study aims to systematically map the intellectual structure and thematic evolution of gamification and user engagement research from 2015 to 2025. It seeks to identify influential contributors, conceptual clusters, and emerging areas that shape the field.

Design/Methodology/Approach: A structured bibliometric review was conducted using 467 journal articles retrieved from Scopus. The study integrates performance analysis and science mapping techniques—namely citation analysis, co-citation mapping, bibliographic coupling -using VOSviewer, and keyword co-occurrence analysis using -Bibliometrix-R to uncover both intellectual and conceptual dimensions.

Findings: The study highlights key authors, journals, institutions, and countries driving gamification research. Co-citation analysis reveals three major intellectual clusters, while bibliographic coupling reveals four thematic areas: real-world gamification applications, design and social influence, loyalty and sustainability-focused apps, and psychological models of user motivation. Keyword analysis captures core behavioral constructs and indicates rising interest in AR, AI, and sustainable applications. Gaps related to personalization, cultural differences, and long-term engagement outcomes are also identified.

Originality/Value: This paper offers a comprehensive synthesis of a rapidly evolving research area. It provides actionable insights for scholars and practitioners by revealing knowledge gaps and guiding future investigation into user-centered gamification design.

Paper Type: Review of Literature

KEYWORDS: Gamification | User Engagement | Bibliometric Analysis | Tecgnology

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Introduction

Gamification, broadly defined as the use of game design elements in non-game contexts (Deterding et al., 2011), has gained considerable attention as a powerful strategy for enhancing user engagement, motivation, and behavioral outcomes across various digital platforms. Its application spans multiple domains including education, marketing, healthcare, and information systems where it is often used to improve user experience, retention, and trust (Hamari et al., 2014; Zichermann & Cunningham, 2011). Drawing on behavioral theories such as Self-Determination Theory (Deci & Ryan, 1985) and the Technology Acceptance Model (Davis, 1989), gamification research has evolved into an increasingly multidisciplinary field, attracting contributions from psychology, business, information systems, and computer science.

Over the last decade, gamification has transitioned from being a tactical engagement tool to a subject of sustained academic inquiry. This growth has led to a rapidly expanding and diverse body of literature. However, this diversity has also resulted in a fragmented landscape, with research scattered across different journals, conceptual frameworks, and methodological approaches. While prior reviews have explored gamification in specific domains (e.g., education, mobile apps), few have systematically mapped the intellectual structure, thematic clusters, and conceptual trends of gamification and user engagement research using robust bibliometric techniques (Aria & Cuccurullo, 2017a; van Eck & Waltman, 2010a).

To bridge this gap, the present study undertakes a detailed bibliometric investigation of gamification research published between 2015 and 2025, drawing on data retrieved from the Scopus database. By integrating performance analysis with science mapping approaches—including citation analysis, co-citation mapping, bibliographic coupling, and keyword co-occurrence analysis—the study seeks to uncover the intellectual foundations and evolving thematic structure of the field. In doing so, it aims to offer a comprehensive synthesis of existing literature and is guided by the following research questions.

RQ1: Who are the most influential authors, institutions, countries, journals, and articles?

RQ2: What are the key intellectual foundations based on co-citation patterns?

RQ3: What are the major thematic clusters identified through bibliographic coupling?

RQ4: What conceptual themes and trends emerge from keyword co-occurrence?

RQ5: What are the underexplored areas and future research opportunities in gamification research?

These questions guide the structure of the present bibliometric analysis and form the basis for the following research objectives, which outline the specific aims of the study.

Research Objectives

RO1: To identify the top contributing authors, institutions, countries, journals, and articles.

RO2: To examine the intellectual structure through co-citation analysis of cited references.

RO3: To identify thematic clusters through bibliographic coupling.

RO4: To explore conceptual trends using keyword co-occurrence analysis.

RO5: To suggest future research directions based on gaps and emerging themes.

Together, these research questions and objectives provide a structured foundation for analyzing the scope, depth, and evolution of gamification and user engagement literature. By uncovering influential contributions, mapping intellectual and thematic structures, and identifying future research directions, this study offers a comprehensive and evidence-based overview of the field. The following sections present the methodology, results, and key insights derived from this bibliometric investigation.

Methodology

Research Design

This study employs a structured bibliometric methodology to examine the intellectual and thematic dimensions of gamification research. It aims to identify the most influential scholarly contributions, trace knowledge linkages, and reveal key thematic clusters using citation-based methods and keyword analyses. To achieve these objectives, the study integrates both performance analysis and science mapping techniques. Citation analysis, co-citation mapping, and bibliographic coupling were applied to investigate the field's intellectual structure, while keyword co-occurrence analysis was used to uncover underlying conceptual patterns and emerging research themes.

Data Source and Search Strategy

The bibliographic data used for this study was retrieved from the Scopus database, which is recognized for its comprehensive coverage of peer-reviewed literature. The search was conducted on 12 July 2025, using a well-defined set of keywords to ensure relevance and precision. The search string applied in the TITLE-ABS-KEY field included terms such as "gamification," "game elements," "game mechanics," "serious games," and "motivational design," combined with outcome-related terms like "user engagement," "consumer engagement," "continued usage," and "behavioral intention." The initial search yielded a total of 1,376 records. After applying filters for document type and language, 467 relevant journal articles and review papers were finalized for analysis. (See Table 1).

Inclusion and Exclusion Criteria

To maintain the quality and relevance of the dataset, specific inclusion and exclusion criteria were applied (See Table 1). The analysis was limited to journal articles and review papers published in English between 2015 and 2025. The selected documents were limited to those falling under key subject categories such as "Business, Management, Social Sciences, Economics, Econometrics and Finance, Arts and Humanities Psychology, Decision Sciences, and Computer Science".

Conference papers, book chapters, editorial notes, and non-English publications were excluded. This refined approach ensured that the final dataset comprised high-quality and thematically consistent scholarly work relevant to the research objective.

Data Analysis Procedure

The finalized dataset was exported in both .csv formats for analysis using two specialized bibliometric tools. VOSviewer was employed for conducting citation analysis, co-citation analysis, and bibliographic coupling. These methods were used to identify highly cited sources, co-cited references, and the intellectual structure of the literature. The clustering algorithm in VOSviewer allowed the identification of distinct thematic groups within the scholarly network. In parallel, Bibliometrix, an R-based bibliometric package, was used for keyword co-occurrence analysis. This enabled a deeper understanding of the conceptual focus and emerging topics within the field. Appropriate thresholds were applied during the analysis to maintain clarity and relevance in the resulting visualizations. The combined use of VOSviewer (van Eck & Waltman, 2010b) and Bibliometrix (Aria & Cuccurullo, 2017b) provided a robust methodological foundation for capturing both structural and conceptual dimensions of gamification research.

Table 1: Document Search and Inclusion Criteria

Search Criteria and Article Selection		
Filtering Criteria	**EXCLUDE**	**INCLUDE**
Search Criteria	-	-
Search Date: 12 July 2025	-	-
Database: Scopus	-	-
Search Term: TITLE-ABS-KEY ((“gamification” OR “game elements” OR “game mechanics” OR “game-based system” OR “serious games” OR “motivational design” OR “reward systems” OR “points and badges” OR “leaderboards”) AND (“user engagement” OR “consumer engagement” OR “user motivation” OR “customer loyalty” OR “continued usage” OR “purchase intention” OR “habit formation” OR “behavioral intention”))	-	1376
Period of Publications: 2015-2025	89	1287
Subject Area: “Business, Management and Accounting, Social Sciences, Economics, Econometrics and Finance, Arts and Humanities, Computer Science, Decision Sciences, Psychology”	181	1106
Publication Type: Article, Review	606	500
Article Selection	-	-
Language Screening: Include Documents Published in English Only	4	496
Source Type: Journal	2	494
Publication Stage: Final	27	467

Source: Authors Compilation

Findings and Analysis

Top Author, Organizations & Country

To identify leading contributors to gamification research, a performance analysis was conducted focusing on top authors, institutions, and countries. This analysis was based on two key indicators: Total Publications (TP) and Total Citations (TC). As shown in Table 2, the results provide insights into individual scholarly productivity, institutional research strength, and geographical distribution of influential research. The findings reflect the global nature of gamification studies, with contributions emerging from diverse academic and cultural contexts.

Top Organizations: As shown in Table 2 (Top Organizations), the organizational analysis reveals that the University of Tampere (Finland) is the top-performing institution, having generated 526 citations from a single highly influential publication. Several other institutions also appear prominently, including the University of Louisville (United States) and Hong Kong Baptist University, each contributing impactful work despite a lower number of total publications. Institutions like City University of Hong Kong, University of Zaragoza (Spain), and University of Hong Kong also demonstrate concentrated academic output, signaling strong localized expertise in gamification-related research.

Table 2: Top Author, Institutions & Country

TC	Author	TP	TC	organization	TP	TC	country	TP
920	hamari, juho	6	526	university of tampere, finland	1	2029	united states	59
472	suh, ayoung	3	277	university of louisville, united states	1	1178	spain	24
460	wagner, christian	2	277	hong kong baptist university, hong kong	1	1113	finland	10
387	catalán, sara	4	277	city university of hong kong	1	891	united kingdom	39
355	bitrián, paula	3	277	university of hong kong	1	881	hong kong	15
355	buil, isabel	3	261	university of zaragoza, spain	1	880	china	46
347	russell-bennett, rebekah	5	261	university of zaragoza, spain	1	878	australia	21
289	cheung, christy m.k.	2	233	university of north carolina, united states	1	712	taiwan	28
277	ahuja, manju	1	233	colorado state university, united states	1	647	india	34
254	mulcahy, rory	3	224	university of hong kong, hong kong	1	500	belgium	10

Source: Authors Compilation

Top Authors: As presented in Table 2 (Top Authors), among the most influential authors in the domain, Juho Hamari stands out prominently with 6 publications and a total of 920 citations, establishing him as a central figure in gamification research. His prolific and highly cited work indicates both productivity and academic impact. Other leading contributors include Ayoung Suh with 3 publications and 472 citations, and Christian Wagner with 2 publications and 460 citations. Notably, authors such as Sara Catalán, Paula Bitrián, and Isabel Buil have also gained substantial recognition, each contributing three or more papers with over 250 citations, reflecting consistent engagement in the field.

Top Contributing Countries: As illustrated in Table 2 (Top Contributing Countries), in terms of country-level contributions, the United States leads by a wide margin with 59 publications and 2,029 citations, indicating both volume and influence. Spain follows with 24 publications, while the United Kingdom, China, and India also appear among the top contributors with substantial publication counts. Interestingly, countries like Finland, Hong Kong, and Taiwan, despite having fewer total publications, show high citation counts relative to output, suggesting the high quality and visibility of their research in the field. This distribution highlights the global and interdisciplinary nature of gamification scholarship.

Top Articles

Table 3 presents, the performance analysis of the most cited articles reveals the central scholarly contributions shaping gamification research. Leading the list is the article by (Hamari, 2017a) titled "Do badges increase user activity? A field experiment on the effects of gamification," which has been cited 526 times, making it the most influential publication in the domain. This empirical study highlights how gamified elements like badges significantly impact user engagement over time. The second most cited work is by (Suh et al., 2017a), "Gamification in the Workplace: The Central Role of the Aesthetic Experience," which has garnered 277 citations, focusing on how aesthetic experiences in gamified workplace systems influence employee engagement. In third position, (Bitrián et al., 2021a), with 261 citations, explore how gamification enhances user engagement in mobile app contexts, emphasizing personalization and motivational design. These top-cited works collectively reflect a strong academic interest in understanding how gamification mechanisms affect behavioral outcomes in both consumer and organizational settings.

Top Journals

Table 4 presents, the journal-wise performance analysis highlights the most prominent publication outlets contributing to gamification research. Computers in Human Behavior emerges as the most impactful journal, with 12 publications and a total of 1,014 citations, reflecting its central role in publishing high-quality empirical and theoretical work on user behavior in digital environments. Journal of Business Research also demonstrates significant influence with 6 publications and 896 citations, indicating strong contributions at the intersection of gamification, marketing, and consumer engagement. Other notable journals include Computers and Education (4 publications, 508 citations) and Journal of Management Information Systems (2 publications, 445 citations), suggesting a diverse disciplinary spread across education, psychology, information systems, and management domains. The data also reveals increasing contributions from open-access platforms like Sustainability (Switzerland) in recent years, pointing to the growing interdisciplinarity and global interest in gamification research.

Table 3: Top Articles

Authors	Title	Cited by
Hamari (2017)	"Do badges increase user activity? A field experiment on the effects of gamification"	526
Suh et al. (2017)	"Gamification in the Workplace: The Central Role of the Aesthetic Experience"	277
Bitrián et al. (2021)	"Enhancing user engagement: The role of gamification in mobile apps"	261
Hwang & Choi (2020)	"Having fun while receiving rewards?: Exploration of gamification in loyalty programs for consumer loyalty"	233
Hew et al. (2016)	"Engaging Asian students through game mechanics: Findings from two experiment studies"	224
Mitchell et al. (2020)	"Gamification and the impact of extrinsic motivation on needs satisfaction: Making work fun?"	195
Tobon et al. (2020)	"Gamification and online consumer decisions: Is the game over?"	189
Suh et al. (2018)	"Enhancing User Engagement through Gamification"	183
Hamari et al. (2019)	"Uses and Gratifications of Pokémon Go: Why do People Play Mobile Location-Based Augmented Reality Games?"	177
Silic & Lowry (2020)	"Using Design-Science Based Gamification to Improve Organizational Security Training and Compliance"	168

Source: Authors Compilation

Table 4: Top Journals

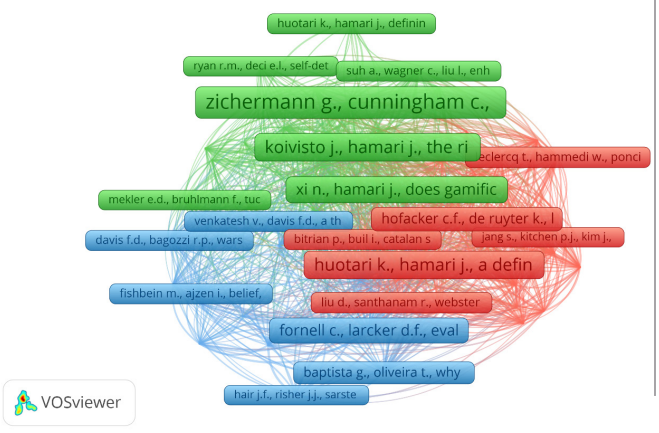
Journal	TP	TC	2015-2020	2021-2025
computers in human behavior	12	1014	7	5
journal of business research	6	896	3	3
computers and education	4	508	4	0
journal of management information systems	2	445	2	0
international journal of human-computer interaction	11	437	3	8
decision support systems	5	348	1	4
international journal of information management	3	311	1	2
international journal of human computer studies	9	299	3	6
frontiers in psychology	10	251	4	6
sustainability (switzerland)	10	194	1	9

Source: Authors Compilation

Co-Citation Analysis through Cited Reference

To understand the core knowledge structure of the research domain, a co-citation analysis was conducted using VOSviewer, based on cited references. From a total of 28,301 cited references, a minimum citation threshold of 10 was applied, resulting in 57 highly cited references being selected for the analysis. These were automatically grouped into three distinct clusters using VOSviewer's clustering algorithm, each representing a key thematic area within the literature. As shown in Figure 1: Co-Citation Analysis (Cited Reference), Cluster 1 (22 items, green nodes) focuses on gamification mechanics and user engagement. Cluster 2 (20 items, red nodes) highlights design limitations and strategic integration of gamification. Cluster 3 (15 items, blue nodes) includes theoretical and methodological foundations related to gamification and digital adoption. This clustering provides a clear and organized view of the most influential academic contributions in the field.

Figure 1: Co-Citation Analysis (Cited Reference)



Source: VosViewer

Cluster 1 (Green Nodes), consisting of 22 items, focuses on gamification as a strategic mechanism to enhance consumer engagement, trust, and knowledge contribution. (Zichermann & Cunningham, 2011) laid the groundwork for integrating game mechanics like points, badges, and feedback loops into consumer apps. (Xi & Hamari, 2020) demonstrated how gamified elements significantly boost brand engagement and equity. (Suh & Wagner, 2017) applied gamification in enterprise collaboration systems, showing that affordances like visibility and competition increase knowledge sharing through enhanced hedonic value. (Marache-Francisco & Brangier, 2012) reframed gamification through a service marketing lens, stressing experiential value co-creation. Together, these co-cited works position gamification as a powerful tool for driving retention, loyalty, and user interaction key constructs aligned with consumer privacy, trust, and digital experience in fintech and marketing contexts.

Cluster 2 (Red Nodes), consisting of 20 items, focuses on the design, effectiveness, and boundaries of gamification, especially in mobile marketing and information systems. (Leclercq et al., 2018) highlight the risks of gamification, showing how losing competitions in co-creation communities can reduce engagement moderated by prior user involvement. (Hofacker et al., 2016) integrate game design principles into mobile marketing, emphasizing structured design over hype. (Huotari & Hamari, 2017) reconceptualize gamification within service marketing theory, positioning users as value co-creators. (Liu et al., 2017) provide a design framework for gamified information systems, balancing experiential and instrumental outcomes. Collectively, this cluster refines our understanding of how gamification should be meaningfully and ethically embedded in service and digital system design to sustain engagement and trust.

Cluster 3 (Blue Nodes), comprising 15 items, brings together the foundational theories and methodological tools underpinning gamification and technology acceptance research. (Fishbein & Ajzen, 1975a) Theory of Reasoned Action (TRA) provides a behavioral framework to understand how beliefs and attitudes shape intention and use. (Fornell & Larcker, 1981a) introduce vital measurement validation criteria for structural equation models, crucial in behavioral studies. (Baptista & Oliveira, 2017) empirically link gamification to mobile banking acceptance, extending the UTAUT2 model. (Hair et al., 2019) offer comprehensive guidelines for applying PLS-SEM, a statistical method widely used to test complex models in gamification and fintech studies. This cluster supports rigorous, theory-driven empirical research into how gamified systems influence digital trust, adoption, and retention.

Bibliographic Coupling Through Thematic Clusters

Figure 2: Bibliographic Coupling presents, a bibliographic coupling analysis of 26 highly cited documents (each cited at least 100 times) revealed four major thematic clusters. Among these, 23 documents formed the largest connected component, grouped through total link strength using VOSviewer. Each cluster reflects a distinct conceptual focus within gamification research and is discussed below with reference to its node color, number of items, and total citation count.

Cluster 1: Applied Gamification in Real-World Domains

Represented by red nodes, this cluster includes 9 documents with a combined 1186 citations (See Figure 2: Bibliographic Coupling, Table 5: Thematic Clusters).. It focuses on the application of gamification across domains such as education, software systems, healthcare, and financial services. Some top cited papers like (Hew et al., 2016) investigated the effects of game mechanics on student engagement in Asian higher education. (Hakulinen et al., 2015) demonstrated how achievement badges influenced student behavior in a computer science course. Extending gamification into the financial sector, (Rodrigues et al., 2016) showed how social cues and gamified elements shaped customer intention in e-banking applications.

Cluster 2: Gamification Design, Feedback & Social Influence

This cluster, visualized by green nodes, contains 5 documents with a total of 1132 citations (See Figure 2: Bibliographic Coupling, Table 5: Thematic Clusters). It highlights how gamification design and feedback mechanisms shape user behavior, particularly in digital and social contexts. (Hamari, 2017b) showed that implementing badges in online systems significantly increased user activity. (Hamari et al., 2019) explored motivations for using Pokémon Go, linking

Table 5: Thematic Clusters

Themes	Authors	Title	Cited by
Applied Gamification in Real-World Domains	Hew et al. (2016)	"Engaging Asian students through game mechanics: Findings from two experiment studies"	224
	Hakulinen et al. (2015)	"The effect of achievement badges on students' behavior: An empirical study in a university-level computer science course"	141
	Rodrigues et al. (2016)	"Playing seriously - How gamification and social cues influence bank customers to use gamified e-business applications"	137
Gamification Design, Feedback & Social Influence	Hamari (2017)	"Do badges increase user activity? A field experiment on the effects of gamification"	526
	Hamari et al. (2019)	"Uses and Gratifications of Pokémon Go: Why do People Play Mobile Location-Based Augmented Reality Games?"	177
	Silic & Lowry (2020)	"Using Design-Science Based Gamification to Improve Organizational Security Training and Compliance"	168
Gamified Apps for Loyalty and Sustainable Behavior	Bitrián et al. (2021)	"Enhancing user engagement: The role of gamification in mobile apps"	261
	Hwang & Choi (2020)	"Having fun while receiving rewards?: Exploration of gamification in loyalty programs for consumer loyalty"	233
	Tobon et al. (2020)	"Gamification and online consumer decisions: Is the game over?"	189
Gamification Psychology: User Types & Motivation Models	Suh et al. (2017)	"Gamification in the Workplace: The Central Role of the Aesthetic Experience"	277
	Mitchell et al. (2020)	"Gamification and the impact of extrinsic motivation on needs satisfaction: Making work fun?"	195
	Suh et al. (2018).	"Enhancing User Engagement through Gamification"	183

Source: Authors Compilation

enjoyment and nostalgia to reuse and spending intentions. (Silic & Lowry, 2020) applied a design-science approach to develop a gamified security training system that improved user compliance through intrinsic motivation.

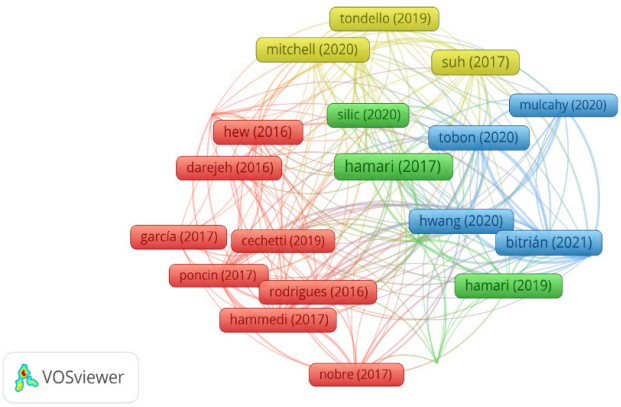
Cluster 3: Gamified Apps for Loyalty and Sustainable Behavior

Represented by blue nodes, this cluster includes 5 documents and accounts for 902 total citations (See Figure 2: Bibliographic Coupling, Table 5: Thematic Clusters). It focuses on how gamified mobile applications promote consumer loyalty and sustainable behavior. (Bitrián et al., 2021b) emphasized the role of need satisfaction in driving user engagement with gamified apps. (Hwang & Choi, 2020) demonstrated the effectiveness of gamified loyalty programs in increasing participation and app downloads. (Tobon et al., 2020) conducted a systematic review of gamification's influence on digital consumer decision-making, identifying key elements like rewards and challenges.

Cluster 4: Gamification Psychology: User Types & Motivation Models

This final cluster is shown with yellow nodes, comprising 4 documents and accumulating 777 citations, (See Figure 2: Bibliographic Coupling, Table 5: Thematic Clusters). It delves into the psychological and motivational foundations of gamification. (Suh et al., 2017b) proposed aesthetic experience as a key predictor of continued engagement with gamified systems. (Mitchell et al., 2020) examined how extrinsic motivation affects psychological need satisfaction and behavioral intention in workplace gamification. (Suh et al., 2018) used cognitive evaluation theory to explain how game dynamics fulfill intrinsic needs and enhance user enjoyment.

Figure 2: Bibliographic Coupling



Source: VosViewer

Keyword Co-Occurrence Analysis

To identify the core themes in the existing literature, a word co-occurrence analysis was conducted using Bibliometrix-R (see Table 6, Figure 3 & Figure 4: Word Tree). The TreeMap visualization highlights the most frequent keywords found across the dataset. Terms like "gamification," "user engagement," "motivation," and "serious games" dominate the landscape, indicating a strong focus on behavioral interaction and psychological engagement in gamified systems. This analysis offers valuable insights into the intellectual structure and interdisciplinary scope of the research domain.

Figure 3: Word Cloud

Table 6: Most Frequent words

Terms	Frequency
gamification	311
user engagement	69
motivation	54
serious games	39
human	38
engagement	28
behavioral research	25
article	24
female	24
virtual reality	24

Source: Bibliometrix-R

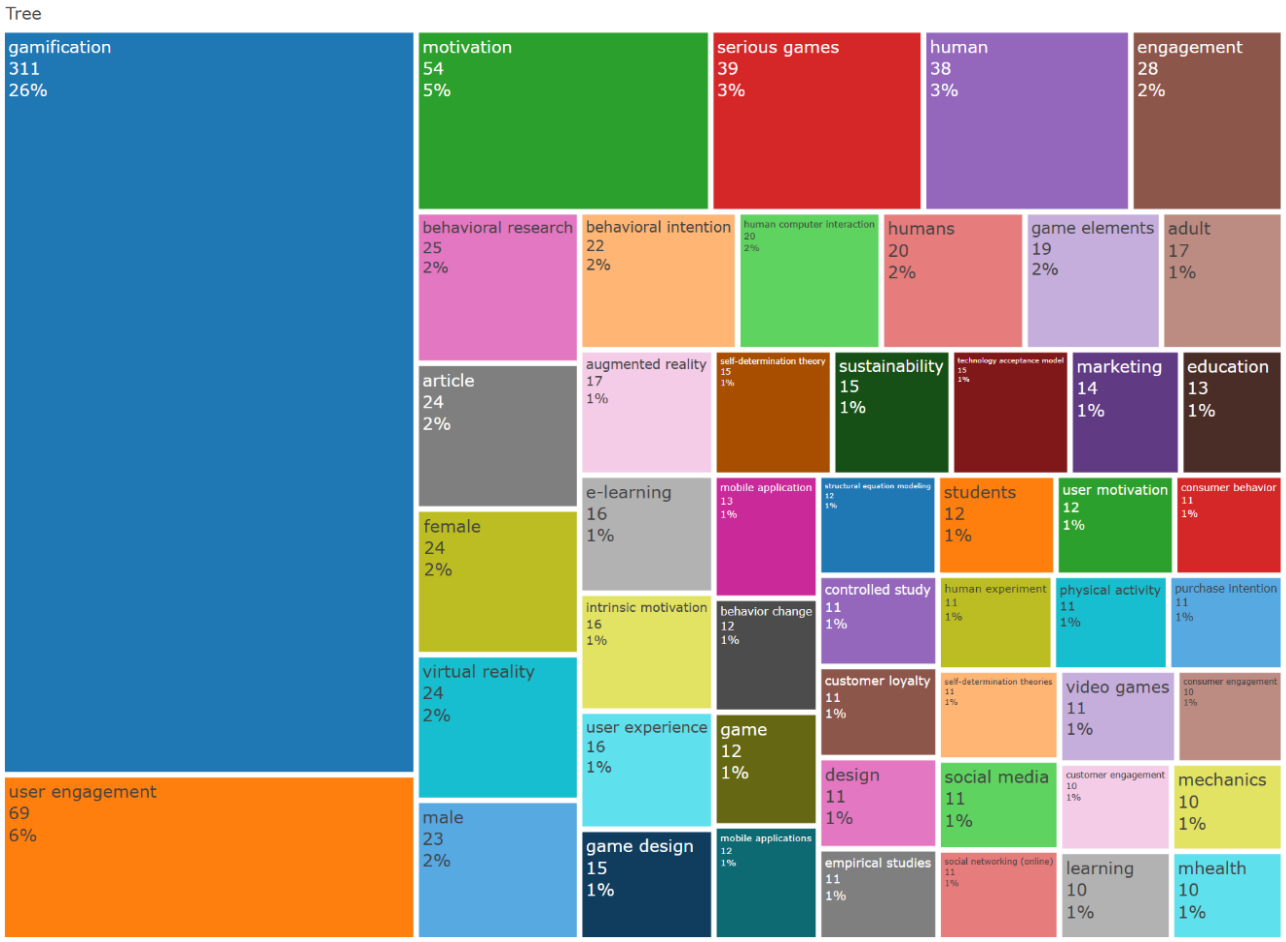
The TreeMap visualization illustrates the most frequently occurring keywords in the bibliometric dataset, highlighting dominant themes within the literature. "Gamification" emerges as the most prominent keyword, appearing 311 times and representing 26% of the dataset, underscoring its centrality to the research domain. This is followed by

"user engagement" (69 occurrences, 6%), reflecting the field's focus on how gamified systems influence behavioral interaction. Other notable terms include "motivation" (54), "serious games" (39), "human" (38), and "engagement" (28), indicating a strong behavioral and psychological orientation. Keywords such as "behavioral intention," "technology acceptance model," "intrinsic motivation," and "self-determination theory" further suggest that gamification research often draws from established theories in psychology and information systems. Emerging topics like "augmented reality," "mHealth," "virtual reality," and "sustainability" also appear, reflecting the field's growing interdisciplinary reach. Overall, the keyword distribution demonstrates a balanced integration of technical design concepts, behavioral constructs, and applied domains, pointing to the multifaceted nature of gamification research. (See Figure 4: Word Tree)

Future Research Directions

The findings of this study highlight several promising directions for future research. While much of the current literature focuses on traditional gamification elements such as badges, points, and leaderboards (Zichermann & Cunningham, 2011), there is a growing need to explore adaptive and personalized gamification strategies that align with user-specific motivations and behaviors (Suh & Wagner, 2017). Future studies should also examine cross-cultural differences in gamification responses, especially in underrepresented regions such as Africa, Southeast Asia, and Latin America, where user engagement patterns may vary due to cultural and technological contexts (Hamari & Koivisto, 2015). With emerging technologies like artificial intelligence, augmented reality, and blockchain being increasingly integrated into digital platforms, further research

Figure 4: Word Tree



Source: Bibliometrix-R

is needed to assess their impact on gamified experiences (Baptista & Oliveira, 2017). Moreover, scholars could adopt longitudinal or experimental designs to evaluate the sustained effects of gamification on trust, satisfaction, and behavioral intention over time (Fishbein & Ajzen, 1975b; Hair et al., 2019)Expanding research into these areas will enrich both theoretical models and practical applications of gamification.

Implications

This study contributes significantly to both academic research and practical application. Theoretically, it consolidates and extends prior work by highlighting key frameworks that shape gamification research, including the Self-Determination Theory (Deci & Ryan, 1985), the Technology Acceptance Model (TAM) (Davis, 1989), and the Theory of Reasoned Action (Fishbein & Ajzen, 1975b). These foundational theories have consistently informed how game mechanics influence motivation, intention, and behavior in digital environments. By identifying major intellectual clusters and co-citation patterns, this study provides scholars with a comprehensive map of how gamification research has evolved and where conceptual gaps remain (Aria & Cuccurullo, 2017a; van Eck & Waltman, 2010a).

From a practical perspective, the insights offer value for professionals designing gamified systems across industries. As user trust and sustained engagement become critical in sectors such as finance, education, and healthcare, understanding which game elements such as feedback loops, reward systems, and personalized challenges enhance user loyalty is essential (Hamari, 2017b; Xi & Hamari, 2020). This study equips practitioners with empirical evidence to design experiences that are not only engaging but also ethically grounded and responsive to diverse user needs. By bridging academic theory with applied design, the study promotes the development of gamified platforms that are meaningful, inclusive, and strategically effective.

Limitations

Although this study provides a comprehensive overview of the gamification research landscape, it has certain limitations. First, the analysis relied solely on the Scopus database, which may have excluded relevant literature indexed in other databases such as Web of Science or EBSCOhost (Aria & Cuccurullo, 2017a). As a result, some influential but non-Scopus indexed works may not have been captured. Second, bibliometric techniques, while effective for revealing structural patterns and citation trends, do not account for the qualitative richness or contextual depth of individual studies (van Eck & Waltman, 2010a). Third, citation-based analysis tends to favor older publications due to their longer citation window, potentially underrepresenting recent but high-quality contributions (Fornell & Larcker, 1981b). Additionally, co-occurrence and coupling outcomes are highly dependent on threshold settings and keyword selection, which may influence the representation of clusters. These limitations suggest that future research could integrate qualitative content analysis or systematic literature reviews alongside bibliometric methods for a more holistic understanding.

Conclusion

This bibliometric analysis offers a holistic and nuanced understanding of the gamification and user engagement research landscape from 2015 to 2025. Using tools such as VOSviewer and Bibliometrix, the study identifies the most influential authors, journals, documents, and conceptual clusters within the field (Aria & Cuccurullo, 2017a; van Eck & Waltman, 2010a). The analysis reveals that gamification is no longer treated as a novelty but has matured into a dynamic, interdisciplinary field with strong theoretical foundations and expanding practical relevance. The convergence of disciplines ranging from information systems and marketing to psychology and education reflects the field's adaptability and richness.

More than a retrospective summary, this study serves as a forward-looking resource. It highlights critical themes such as motivation design, technology adoption, and trust formation offering a roadmap for future inquiry. Ultimately, the research affirms that gamification is a powerful and evolving approach to understanding digital behavior, with vast potential to reshape how individuals engage, learn, and interact in an increasingly digital world.

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Annexure 17.1.5

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Reviewers Memorandum

Reviewer's Comment 1: The manuscript presents a comprehensive and well-executed bibliometric analysis of gamification and user engagement research over a decade. The integration of performance analysis, co-citation mapping, bibliographic coupling, and keyword co-occurrence provides a rich and multi-dimensional view of the field. The paper's strength lies in its systematic methodology and clarity of presentation. One area of improvement could be the inclusion of more comparative insights between earlier and later phases of research (2015–2020 vs. 2021–2025), which would highlight the evolution of themes more vividly.

Reviewer's Comment 2: The paper demonstrates strong methodological rigor by combining VOSviewer and Bibliometrix, ensuring both structural and conceptual dimensions are well captured. The visualizations (e.g., co-citation clusters, thematic clusters, keyword analysis) add clarity and enhance readability. However, some figures and tables could be accompanied by more critical interpretation rather than descriptive reporting. For instance, while the clusters are identified effectively, a deeper discussion on how these clusters interrelate would further strengthen the contribution.

Reviewer's Comment 3: The study's contribution is significant in mapping knowledge gaps and pointing to future research opportunities, particularly in areas such as personalization, cross-cultural studies, and emerging technologies like AR and AI. The limitation section is also well addressed, acknowledging database restrictions and citation bias. One suggestion would be to provide a concise conceptual framework diagram that visually integrates the study's findings (e.g., linking intellectual clusters with future research directions). This would enhance the utility of the paper for both researchers and practitioners.

Citation

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Editorial Excerpt

The article has 9% of plagiarism which is the accepted percentage as per the norms and standards of the journal for publication. As per the editorial board's observations and blind reviewers' remarks the paper had some minor revisions which were communicated on a timely basis to the authors (Navneet and Rajeev), and accordingly, all the corrections had been incorporated as and when directed and required to do so. The comments related to this manuscript are related to the topic "Mapping the Landscape of Gamification and User Engagement Research: A Bibliometric Analysis (2015–2025)" both subject-wise and research-wise. This manuscript makes a strong and timely contribution by consolidating a fragmented body of gamification research into a coherent intellectual and thematic landscape. It balances methodological rigor with practical relevance, offering clear insights for academics and industry professionals alike. The paper is well-written, logically structured, and data-driven. Minor enhancements, such as emphasizing thematic evolution across time periods and expanding the interpretive depth of visual results, would further enrich the paper. After comprehensive reviews and the editorial board's remarks, the manuscript has been categorized and decided to publish under the "Review of Literature" category.

Acknowledgement

The acknowledgment section is an essential part of all academic research papers. It provides appropriate recognition to all contributors for their hard work and effort taken while writing a paper. The data presented and analyzed in this paper by (Navneet and Rajeev) were collected first handily and wherever it has been taken the proper acknowledgment and endorsement depicts. The authors are highly indebted to others who facilitated accomplishing the research. Last but not least, endorse all reviewers and editors of GJEIS in publishing in the present issue.

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