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**TREND OF SOCIOLOGICAL STUDIES OF GAMBLING ADDICTION:
BIBLIOMETRIC ANALYSIS**

Abstract

This study conceptualizes ludomania (gambling addiction) not merely as an individual behavioral disorder but as a socially embedded form of dependency that reshapes patterns of well-being, institutional responsibility, and social inequality. We argue that while the prevalence of behavioral addictions has intensified in the context of digital transformation and market liberalization, the scholarly field examining gambling addiction remains unevenly structured and theoretically fragmented. Despite the considerable expansion of empirical research over the past two decades, existing knowledge has not been sufficiently integrated into a coherent interdisciplinary framework. This fragmentation limits the capacity of the field to move beyond biomedical explanations toward structurally informed sociological analysis. In response, the present study seeks to identify dominant research trajectories, structural imbalances, and methodological tendencies in gambling addiction scholarship. Methodologically, we employ a bibliometric analysis of Scopus-indexed publications (2000–2024), examining publication dynamics, citation hierarchies, geographical concentration of knowledge production, and conceptual clustering using VOSviewer. Rather than treating bibliometric mapping as a purely descriptive exercise, we interpret it as an epistemic diagnostic tool that reveals paradigmatic tensions within the field. Our findings indicate three dominant research orientations: neurocognitive, clinical-behavioral, and sociological. While the field demonstrates formal interdisciplinarity, we observe a pronounced skew toward biomedical paradigms. High-impact publications are disproportionately concentrated within neurocognitive and psychiatric frameworks, whereas sociological constructs such as stigma, social capital, institutional accountability, and regulatory governance remain comparatively peripheral.

Geographically, knowledge production is heavily concentrated in high-income, English-speaking countries, reflecting structural asymmetries in global research infrastructure. This concentration raises questions regarding epistemic bias and the limited representativeness of prevailing models in non-Western contexts. We suggest that future research must strengthen macro-social perspectives, integrate institutional and regulatory analysis, and expand empirical inquiry into underrepresented regions. By foregrounding structural determinants alongside individual-level mechanisms, addiction research can evolve toward a more comprehensive and socially responsive framework. The present study thus contributes not only a mapping of the field but a critical reflection on its current trajectory and policy implications.

Keywords: gambling addiction, problem gambling, behavioral addiction, social inequality, institutional governance, digital gambling.

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ЛУДОМАНИЯҒА ҚАТЫСТЫ СОЦИОЛОГИЯЛЫҚ ЗЕРТТЕУЛЕРДІҢ ҮРДІСТЕРІ: БИБЛИОМЕТРИЯЛЫҚ ТАЛДАУ

Аңдатпа

Бұл зерттеу лудоманияны (құмар ойындарға тәуелділік) тек жеке мінез-құлықтық бұзылыс ретінде емес, әлеуметтік құрылымдармен, институционалдық жауапкершілікпен және теңсіздік жүйелерімен тығыз байланыстағы әлеуметтік тәуелділік феномені ретінде қарастырады. Біз мінез-құлықтық аддикциялардың цифрландыру және нарықтық трансформация жағдайында күшейгеніне қарамастан, құмар ойындарға тәуелділікті зерттеу саласы теориялық тұрғыдан

фрагменттелген және құрылымдық теңгерімсіздікке ие деп пайымдаймыз. Соңғы жиырма жылда эмпирикалық зерттеулер саны артқанымен, жинақталған білім біртұтас пәнаралық теориялық жүйеге жеткілікті дәрежеде біріктірілмеген. Бұл жағдай биомедициналық түсіндіру шеңберінен шығып, құрылымдық-социологиялық талдауға көшу мүмкіндігін шектейді. Осыған байланысты зерттеудің мақсаты – құмар ойындарға тәуелділік бойынша ғылыми әдебиеттегі басым бағыттарды, парадигмалық ығыстарды және әдіснамалық үрдістерді анықтау, сондай-ақ тақырыптық және географиялық олқылықтарды айқындау. Зерттеу әдісі ретінде 2000–2024 жылдар аралығындағы Scopus базасында индекстелген жарияланымдарға библиометриялық талдау жүргізілді. Талдау жарияланым динамикасын, дәйексөз иерархиясын, білім өндірудің географиялық шоғырлануын және VOSviewer арқылы концептуалдық кластерлерді анықтауды қамтыды. Библиометриялық карта бұл жерде тек сипаттамалық құрал емес, ғылыми өрістегі парадигмалық кернеулерді айқындайтын аналитикалық тетік ретінде қарастырылады. Нәтижелер үш негізгі зерттеу бағдарын көрсетті: нейроексперименттік, клиникалық-поведенциялық және социологиялық. Дегенмен, формальды пәнаралық сипатқа қарамастан, ғылыми ықпал деңгейі биомедициналық модельдерге қарай ығысқан. Стигма, әлеуметтік капитал, институционалдық жауапкершілік, реттеу саясаты сияқты социологиялық категориялар негізгі дәйексөздік дискурста шеткері қалып отыр.

Географиялық тұрғыдан ғылыми өнім негізінен жоғары табысты, ағылшын тілді мемлекеттерде шоғырланған, бұл жаһандық білім өндірудегі құрылымдық теңсіздіктерді көрсетеді. Мұндай асимметрия зерттеу нәтижелерінің әмбебаптығын шектеп, өзге мәдени контексттердегі құмар ойын феноменін жеткілікті дәрежеде түсіндіруге мүмкіндік бермейді. Біз болашақ зерттеулерде макроәлеуметтік талдауды күшейту, институционалдық және реттеушілік факторларды терең зерттеу, сондай-ақ жеткіліксіз қамтылған аймақтардағы эмпирикалық зерттеулерді кеңейту қажет деп есептейміз. Осылайша, аддикция зерттеулері жеке деңгейдегі нейробиологиялық түсіндіруден әлеуметтік жауапкершілікке негізделген кешенді парадигмаға қарай эволюциялана алады.

Түйін сөздер: құмар ойынға тәуелділік, проблемалық ойын мінез-құлқы, мінез-құлықтық аддикция, әлеуметтік теңсіздік, институционалдық басқару, цифрлық құмар ойын.

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ТЕНДЕНЦИИ СОЦИОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ ЛУДОМАНИИ: БИБЛИОМЕТРИЧЕСКИЙ АНАЛИЗ

Аннотация

Данное исследование рассматривает лудоманию (зависимость от азартных игр) не только как индивидуальное поведенческое расстройство, но и как социальный феномен зависимости, тесно связанный с социальными структурами, институциональной ответственностью и системами неравенства. Несмотря на усиление поведенческих аддикций в условиях цифровизации и рыночных трансформаций, область исследований азартных игр остается теоретически фрагментированной и структурно несбалансированной. За последние двадцать лет значительно увеличилось количество эмпирических исследований, однако накопленные знания до сих пор не интегрированы в целостную междисциплинарную теоретическую систему. Это ограничивает переход от биомедицинской интерпретации к структурно-социологическому анализу.

Цель исследования выявить доминирующие направления, парадигмальные сдвиги и методологические тенденции в научной литературе по проблеме игровой зависимости, а также определить тематические и географические пробелы. В качестве метода использован библиометрический анализ публикаций, индексированных в базе Scopus за период 2000–2024 гг. Анализ включал динамику публикационной активности, иерархию цитируемости, географическую концентрацию производства знаний и выявление концептуальных кластеров с использованием программы VOSviewer. Библиометрическая карта рассматривается не только как описательный инструмент, но и как аналитический механизм выявления парадигмальных напряжений в научном поле.

Результаты показали наличие трех основных исследовательских направлений: нейрокогнитивного, клинико-поведенческого и социологического. Однако, несмотря на формально междисциплинарный характер исследований, научное влияние преимущественно сосредоточено в рамках биомедицинской модели. Такие социологические категории, как стигма, социальный капитал, институциональная ответственность и регуляторная политика, остаются периферийными в доминирующем цитатном дискурсе.

С географической точки зрения научная продукция в основном сконцентрирована в высокодоходных англоязычных странах, что отражает структурные неравенства глобального производства знаний. Подобная асимметрия ограничивает универсальность выводов и препятствует адекватному пониманию феномена азартных игр в иных культурных контекстах. В перспективе необходимо усиление макросоциального анализа, углубленное изучение институциональных и регуляторных факторов, а также расширение эмпирических исследований в недостаточно представленных регионах. Это позволит эволюционировать исследования аддикций от нейробиологической интерпретации индивидуального уровня к комплексной парадигме, основанной на принципах социальной ответственности.

Ключевые слова: лудомания, проблемное игровое поведение, поведенческая зависимость, социальное неравенство, институциональное управление, цифровой гемблинг.

Introduction

The problem of gambling is becoming increasingly significant in sociological research, particularly in the context of behavioral addictions and their impact on social and economic well-being. Gambling is not only a psychological or medical issue but also a complex social phenomenon shaped by cultural, institutional, and economic factors. While early studies primarily focused on individual-level explanations, such as impaired decision-making and reward-processing mechanisms (Beard & Wolf, 2001; Van Leijenhorst et al., 2010), more recent research highlights the importance of social inequality, demographic differences, and structural conditions influencing gambling behavior (Grönroos et al., 2022; Raybould et al., 2021; Resce et al., 2019; Welte et al., 2004). These findings demonstrate that gambling addiction is unevenly distributed across populations and is closely linked to broader patterns of marginalization (Floyd et al., 2024; Raybould et al., 2021).

Sociological approaches emphasize that gambling behavior is embedded within social environments, peer networks, and institutional frameworks. For instance, gambling participation is often influenced by social interactions and community contexts (Reith & Dobbie, 2011), while variations in social capital significantly affect the likelihood of problematic behavior (Awaworyi Churchill & Farrell, 2020). Network-based and latent class studies further show that gambling patterns correspond to distinct social profiles shaped by family support, socioeconomic status, and peer influence (Khazaal et al., 2017; Sanscartier et al., 2018). More recent studies similarly demonstrate the importance of family environments, intergenerational transmission, social identity, gender norms, and community relationships in shaping gambling participation and gambling-related problems (Dowling et al., 2021; Duggan & Mohan, 2023; Forrest & McHale, 2021; Man & Cheung, 2022; Tulloch et al., 2021).

Moreover, gambling-related harm extends beyond financial loss and includes psychological distress, social exclusion, relationship problems, reduced community engagement, and negative effects on family members and other affected persons, reinforcing its status as a public health and social issue

(Blank et al., 2021a; Hing et al., 2022; Langham et al., 2016; Price et al., 2021; Rockloff et al., 2022; Wilson et al., 2024). Research on affected others demonstrates that the consequences of gambling may extend across family relationships and influence subjective well-being, financial security, and health even when the affected individual is not personally engaged in problematic gambling (Suomi et al., 2024; Tulloch et al., 2021, 2023). Longitudinal research also indicates that gambling problems are associated with social and emotional difficulties, contributing to cycles of isolation and vulnerability (Horváth et al., 2023).

The rapid digitalization of gambling has introduced new social dynamics. Online platforms and virtual communities normalize gambling behavior through social interaction, algorithmic influence, advertising, and gamification (Kaakinen et al., 2020; Sirola et al., 2021). The growing integration of gambling promotion into digital media and everyday online environments has also increased concern about exposure among adolescents and young adults (De Jans, 2023; Kristiansen et al., 2022; Labrador et al., 2021; Syvertsen et al., 2022). Recent research suggests that gambling advertising can influence attitudes, intentions, and gambling behavior, with potentially stronger effects among already vulnerable groups (McGrane et al., 2025; Newall et al., 2020).

At the institutional level, corporate social responsibility practices often serve to legitimize gambling markets while shifting responsibility onto individuals (Tetreova, 2023). This issue has become particularly important in debates about “responsible gambling,” because individual-responsibility frameworks may obscure the role of commercial practices, regulatory environments, digital platform design, and broader structural determinants of gambling harm (Marko et al., 2023; Marionneau et al., 2023). Public-health approaches therefore increasingly conceptualize gambling harm as an outcome shaped not only by individual vulnerability but also by commercial, social, cultural, and environmental determinants (Blank et al., 2021b; Johnson et al., 2023; Price et al., 2021).

Additionally, gambling frequently co-occurs with other addictive behaviors, reflecting shared social and environmental determinants rather than isolated individual conditions (Walther et al., 2012). These perspectives support a shift toward a socio-ecological framework, where gambling is understood as the result of interactions between individual, social, and structural factors (Hearn et al., 2021; Oksanen et al., 2021). Such an approach is particularly important because contemporary gambling environments combine individual risk factors with social networks, commercial exposure, technological accessibility, and institutional regulation.

Despite the growing body of research, there remains a lack of systematic analysis of thematic trends, methodological approaches, and geographical distribution in the international literature. Existing bibliometric research also suggests that scholarship on gambling and young people is geographically uneven and that some regions remain underrepresented (Yalçın, 2023). Therefore, a bibliometric analysis is particularly relevant, as it allows the identification of dominant research areas, key methods, and underexplored topics.

This study analyzes 568 publications from the Scopus database covering the period from 2000 to 2024. The object of the study is scientific publications on gambling addiction, while its subject is the main trends and directions within this body of research. The aim is to identify key patterns and gaps in the literature. It is hypothesized that, although research on gambling addiction is interdisciplinary, it remains thematically and geographically imbalanced, with dominance of neurocognitive and clinical approaches and underrepresentation of sociological perspectives. Furthermore, most publications originate from high-income English-speaking countries, whereas regions such as Central Asia remain insufficiently studied.

Recent scholarship has further broadened the analysis of gambling by examining heterogeneity in risk, consumption patterns, and the social contexts in which gambling practices develop. Systematic evidence demonstrates that gambling-related harm cannot be reduced to a single behavioral profile, but instead emerges through combinations of individual, social, and environmental risk factors (Kesaite et al., 2024; Moreira et al., 2023). Population-level research likewise points to the considerable prevalence and public-health significance of gambling and problematic gambling (Tran et al., 2024), while more specific studies identify variation associated with gender, gambling expectations, particular forms of

gambling, and the meanings attached to gambling practices (Díaz et al., 2023; Richardson et al., 2024; Valenciano-Mendoza et al., 2023; Weidner, 2024). The overlap between gambling and other forms of addictive behavior further complicates conventional approaches to prevention and treatment, highlighting the importance of screening for co-occurring gambling and substance-use problems (Yarbakhsh et al., 2023). Taken together, these studies reinforce an understanding of gambling harm as heterogeneous and socially differentiated rather than as the consequence of individual pathology alone.

At the same time, a growing body of research has shifted attention from individual risk toward prevention, communication, industry practices, and institutional responsibility. Personalized feedback and lower-risk gambling interventions illustrate attempts to reduce harmful behavior at the individual and organizational levels (Auer & Griffiths, 2023; Egerer et al., 2025), whereas broader prevention frameworks emphasize the need to address gambling-related harm across multiple levels of the social environment (Wheaton et al., 2024). Research on public messaging, gambling advertising, and gambling-provider communication further demonstrates that the ways in which gambling is represented and promoted constitute an important part of the environment in which gambling decisions are made (Griffiths, 2025; Newall et al., 2019; Newall, 2026; Ray et al., 2026; Singer et al., 2023). Critical analyses have consequently questioned the ethical foundations of “responsible gambling” advertising and the distribution of responsibility between consumers, industry actors, and regulators (De Vita, 2025; Myles et al., 2024). Alongside these developments, interventions based on lived experience indicate that public understandings of gambling harm and stigma can themselves become targets of preventive action (Thomas et al., 2024). Collectively, this literature points toward a more explicitly social and institutional conception of gambling harm in which prevention requires attention not only to individual behavior but also to communication, commercial practices, public attitudes, and regulatory environments.

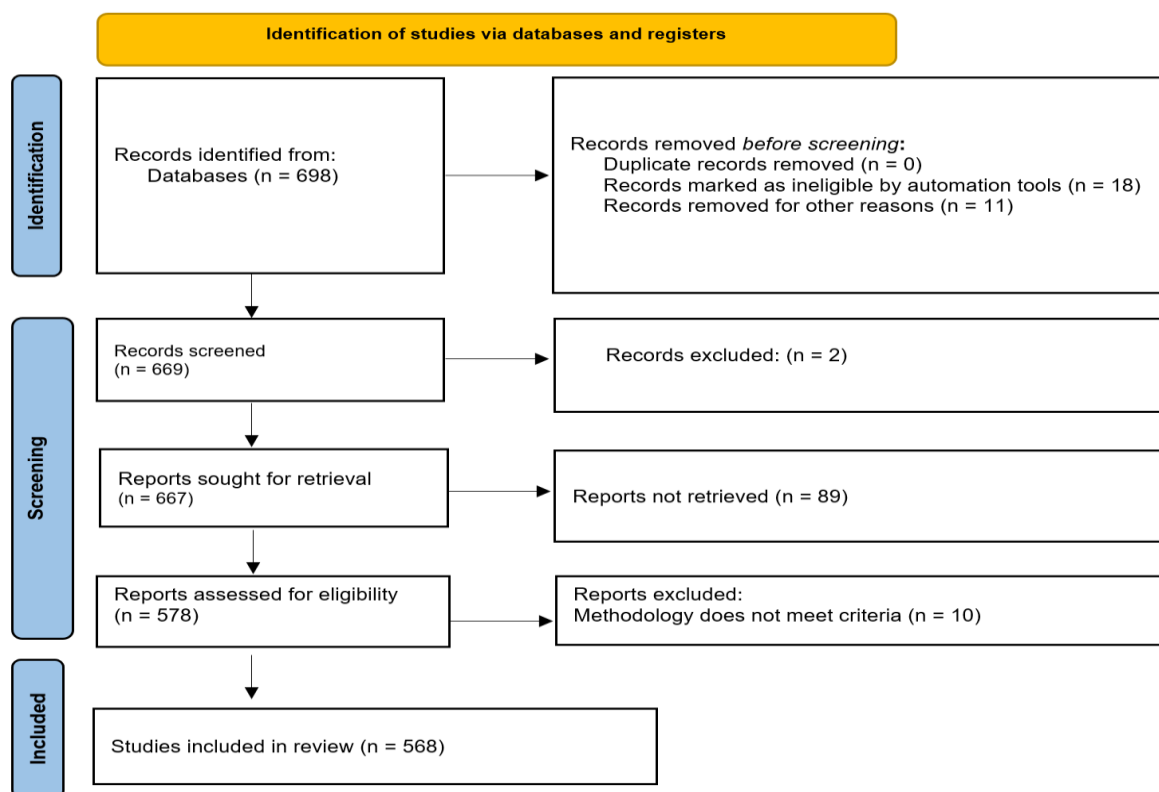
Research methodology

This study adopts a bibliometric research design to examine the structural configuration of scholarly production on gambling addiction. Rather than treating bibliometric analysis as a purely descriptive counting exercise, it is applied as an analytical instrument for identifying epistemic hierarchies, thematic concentrations, and geographical asymmetries within the field. This approach enables not only the measurement of publication dynamics but also a critical interpretation of how knowledge is structured and reproduced across different academic contexts.

The empirical data were obtained from the international Scopus database, selected due to its broad disciplinary coverage, reliable citation tracking, and global indexing standards. At the same time, reliance on a single database introduces certain structural limitations, particularly a bias toward English-language publications and Western academic systems. However, this limitation itself reflects the broader architecture of global academic visibility and knowledge production.

Data collection was carried out using a structured search strategy designed to ensure relevance and consistency with the sociological focus of the study. The search included publications containing the term “gambling” in the title, abstract, and keywords, with subject areas restricted to socioeconomics and social behavior. Only peer-reviewed journal articles published in English between 2000 and 2024 were included. The initial search yielded 11,185 records. To ensure analytical coherence, the dataset was subsequently refined by limiting it to publications classified under Social Sciences, resulting in 698 records.

A systematic screening procedure was then applied in accordance with the PRISMA framework to ensure transparency and replicability. Duplicate entries, non-bibliographic materials, and records with incomplete metadata were excluded. Following this filtration process, the final analytical corpus consisted of 568 publications that met all inclusion criteria. The selection process is illustrated in Figure 1.

Figure 1.*Scopus database selection process for scientific publications on gambling addiction**Note: Created by the authors based on the PRISMA methodology*

The analytical procedure combined quantitative bibliometric indicators with network-based analysis. Key indicators included annual publication output, citation frequency based on Scopus metrics, and the distribution of publications across countries, journals, and authors. These measures made it possible to trace both the quantitative growth of the field and patterns of intellectual influence.

To further explore the conceptual structure of gambling addiction research, a keyword co-occurrence analysis was conducted using VOSviewer software. This method allows the identification of thematic clusters based on the frequency and co-occurrence of key terms, revealing dominant research areas and latent subfields. In this study, keyword clustering is interpreted not as neutral mapping but as an indicator of conceptual proximity and disciplinary alignment. The emergence of clusters reflects structured research communities, while the relative marginalization of certain themes may indicate gaps in the literature.

Importantly, the methodological framework of this study is informed by an integrated theoretical perspective derived from the literature. The analysis is guided by key approaches identified in previous research, including the neurocognitive model (Beard & Wolf, 2001; Van Leijenhorst et al., 2010), the clinical-psychiatric framework (Welte et al., 2002, 2004), the social-ecological perspective (Oksanen et al., 2021), and sociological approaches based on social capital and network theory (Awaworyi Churchill & Farrell, 2020; Reith & Dobbie, 2011; Sanscartier et al., 2018). In addition, the study takes into account research on stigma and moral regulation (Hing et al., 2014; Langham et al., 2016), as well as institutional and corporate governance perspectives (Gonçalves et al., 2023; Tetreva, 2023). Recent research further strengthens the need to conceptualize gambling through relational and structural rather than exclusively individual-level explanations. Floyd et al. (2025) demonstrate that the relationship between social gambling motives and problem gambling is intertwined with deficits in social

connectedness, reinforcing the relevance of social relationships to understanding gambling vulnerability. At the institutional level, recent studies increasingly locate gambling-related harm within commercial and regulatory environments, highlighting the role of advertising practices, regulatory frameworks, and other commercial determinants in shaping exposure and risk (Badu et al., 2025). Longitudinal evidence further indicates that exposure to online gambling advertising should be considered within the broader digital environment in which contemporary gambling practices develop (Savolainen et al., 2025).

By incorporating these theoretical orientations into the bibliometric design, the study moves beyond descriptive analysis and enables a deeper interpretation of the structure of the research field. Specifically, the identified thematic clusters are examined in relation to dominant paradigms, allowing for the assessment of which approaches are most visible and which remain underrepresented.

From a methodological standpoint, this study adopts a critical perspective, emphasizing that bibliometric patterns are not neutral representations of scientific activity. Instead, they reflect institutional priorities, disciplinary hierarchies, and global inequalities in knowledge production. By analyzing citation structures, thematic clusters, and geographical distribution, the research seeks to uncover patterns of epistemic dominance and marginalization.

Thus, the methodological framework serves a dual purpose. On the one hand, it provides a systematic mapping of the development of gambling addiction research over time. On the other hand, it offers a critical lens through which the structural composition of the field can be examined, enabling the identification of gaps and directions for more inclusive and interdisciplinary scholarship.

Results

According to the bibliometric analysis, a significant share of scientific interest in gambling addiction and behavioral dependencies is focused on neurocognitive, clinical, and sociocultural aspects of the problem (Table 1).

Table -1

Top 10 most cited scientific articles

№	Article Title	Authors	Journal	Year	Citations
1	Modification in the proposed diagnostic criteria for Internet addiction	Beard, K.W., Wolf, E.M.	Cyberpsychology and Behavior	2001	713
2	Impaired decision making in suicide attempters	Jollant, F., Bellivier, F., Leboyer, M., Malafosse, A., Courtet, P.	American Journal of Psychiatry	2005	435
3	Asymmetric functional roles of right and left ventromedial prefrontal cortices in social conduct, decision-making, and emotional processing	Tranel, D., Bechara, A., Denburg, N.L.	Cortex	2002	375
4	Adolescent risky decision-making: Neurocognitive development of reward and control regions	Van Leijenhorst, L., Moor, B.G., Op de Macks, Z.A., Westenberg, P.M., Crone, E.A.	NeuroImage	2010	368
5	Friend or foe: The effect of implicit trustworthiness judgments in social decision-making	van 't Wout, M., Sanfey, A.G.	Cognition	2008	298
6	Pathological gambling associated with dopamine agonist therapy in	Driver-Dunckley, E., Samanta, J., Stacy,	Neurology	2003	285

	Parkinson's disease	M.			
7	Young Adult Patients with a History of Pediatric Disease: Impact on Course of Life and Transition into Adulthood	Stam, H., Hartman, E.E., Deurloo, J.A., Groothoff, J., Grootenhuys, M.A.	Journal of Adolescent Health	2006	277
8	Gambling participation in the U.S. – Results from a national survey	Welte, J.W., Barnes, G.M., Wieczorek, W.F., Tidwell, M.-C.O., Parker, J.C.	Journal of Gambling Studies	2002	274
9	Risk factors for pathological gambling	Welte, J.W., Barnes, G.M., Wieczorek, W.F., Tidwell, M.-C.O., Parker, J.C.	Addictive Behaviors	2004	257
10	Co-occurrence of addictive behaviours: Personality factors related to substance use, gambling and computer gaming	Walther, B., Morgenstern, M., Hanewinkel, R.	European Addiction Research	2012	239

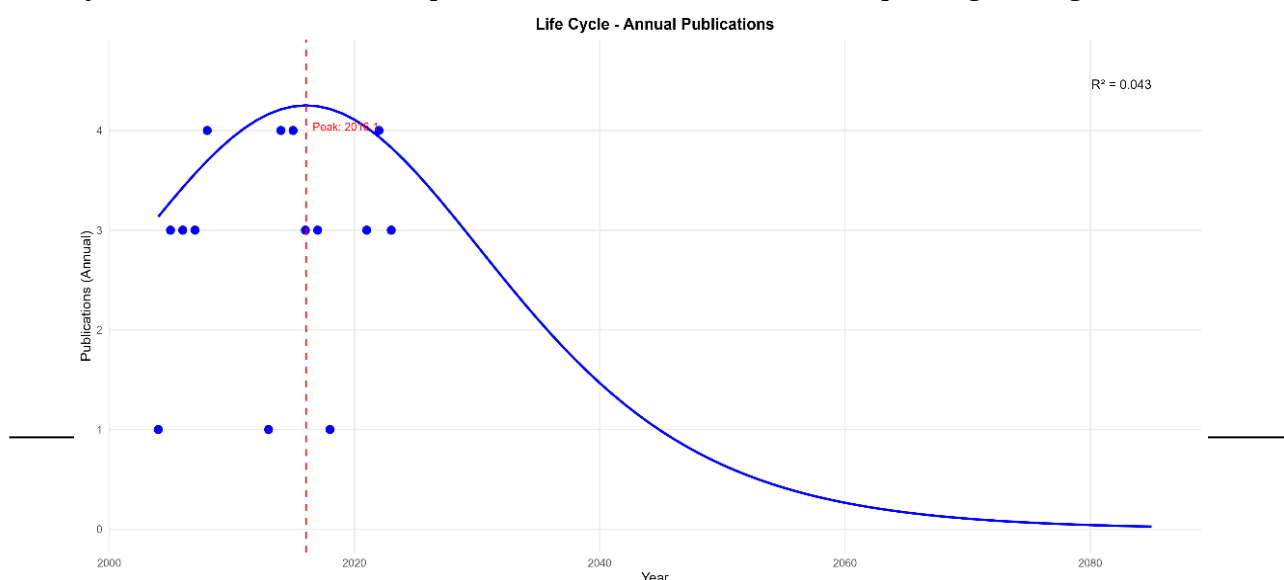
Note: Created by the authors

An analysis of the most cited works shows a clear trend in gambling studies. These studies have evolved from narrow clinical accounts to an interdisciplinary view of addictive behaviors. The article by Beard and Wolf 713 citations was a turning point. It established criteria for Internet addiction by comparing it to pathological gambling (Beard & Wolf, 2001). This reflected a growing interest in expanding addiction research beyond just chemical dependencies. Later contributions have focused on the brain processes underlying decision-making, impulsivity, and emotional regulation, particularly in adolescents. This reinforced how neuroscience helps explain vulnerabilities related to gambling. Meanwhile, clinical and medical viewpoints expanded and studies connected gambling disorders to treatments, like dopamine agonists. Epidemiological research showed that gambling is not just about individual issues. It is closely linked with demographic, socioeconomic, and psychological factors. More recently, Walther et al. (2012) pointed out how multiple addictions, including gambling, gaming, and substance use, often occur together. This highlights the complex shared risk factors involved. Overall, these studies show two trends: more interdisciplinary approaches and the growth of gambling research towards digital and behavioral addictions.

The analysis of the yearly trends in publication activity and citations in gambling addiction research is shown in Figure 2. This figure displays two main indicators: the number of publications in a bar chart and the number of citations in a line chart for the years 2000 to 2024. The data we gathered help us follow the changes in scientific interest in this area. We can also pinpoint times of significant growth and decline while linking the amount of scientific publications to their academic impact.

Figure 2.

Dynamics of the number of publications and citations on the topic of gambling addiction in the



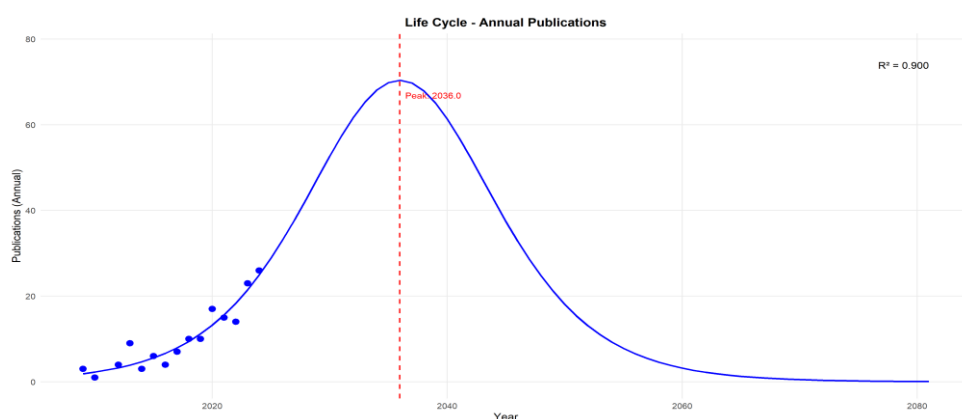
Scopus database for 2000–2024

Note: Created by the authors

The trends in publications and citations show a clear two-phase path in the academic study of gambling and related addictions. Between 2000 and 2010, the field saw a steady but modest rise in publications, with yearly output rarely surpassing 20 articles. Despite the low number of studies, citations grew significantly during this time, peaking at over 1,600 in 2009. The growth is related to the activity in the field of clinical studies related to gambling addiction and this research has become a key reference for further work including the study of social aspects as an essential part. The highest growth occurred between 2011 and 2017, where the trend exceeded 20 with a subsequent peak of 43 articles in 2016. Similar to the growth dynamics, there was a parallel increase in the number of citations, which peaked in 2011, namely 1,609 citations and then this trend shows that the area of research has matured. These findings were also confirmed by a bibliometric analysis of RStudio, which shows that the peak of publication activity occurred in 2016-2019, which is also related to the rise of gambling online and growing public concern, which resulted in a number of social problems (see fig. 3).

Figure 3.

Life-cycle pattern of academic publications on gambling addiction: annual publication trends



Note: Created by the authors RStudio program

These changes have contributed to an intensification of the debate on the issue at the level of political leaders and the public. The model then shows that there is a decline in publication activity specifically in the field of clinical psychology, medicine and behavioral sciences, but the results obtained in the area of study of game dependence as a social problem in interdisciplinary studies shows potential for (see fig. 4). The model points to a predicted peak of scientific activity around 2036 and in the future issues related to the continued growth of digital and online gambling platforms, risks for the institution of family, Increasing social inequality and intensifying the debate on regulation and ethics regarding risky behavior and social harm. A high determinism ($R^2 = 0.900$) indicates the reliability of the data correspondence and means that the observed trend follows a systematic pattern rather than random changes. The resulting model shows that the development of studies on game dependency in sociology will grow and signals a shift from descriptive studies to more integrated and interdisciplinary studies related to institutional regulation, social vulnerability and long-term social consequences.

Figure 4.

Dynamics of sociological studies on gambling addiction: life-cycle model of annual publications

Note: Created by the authors RStudio program

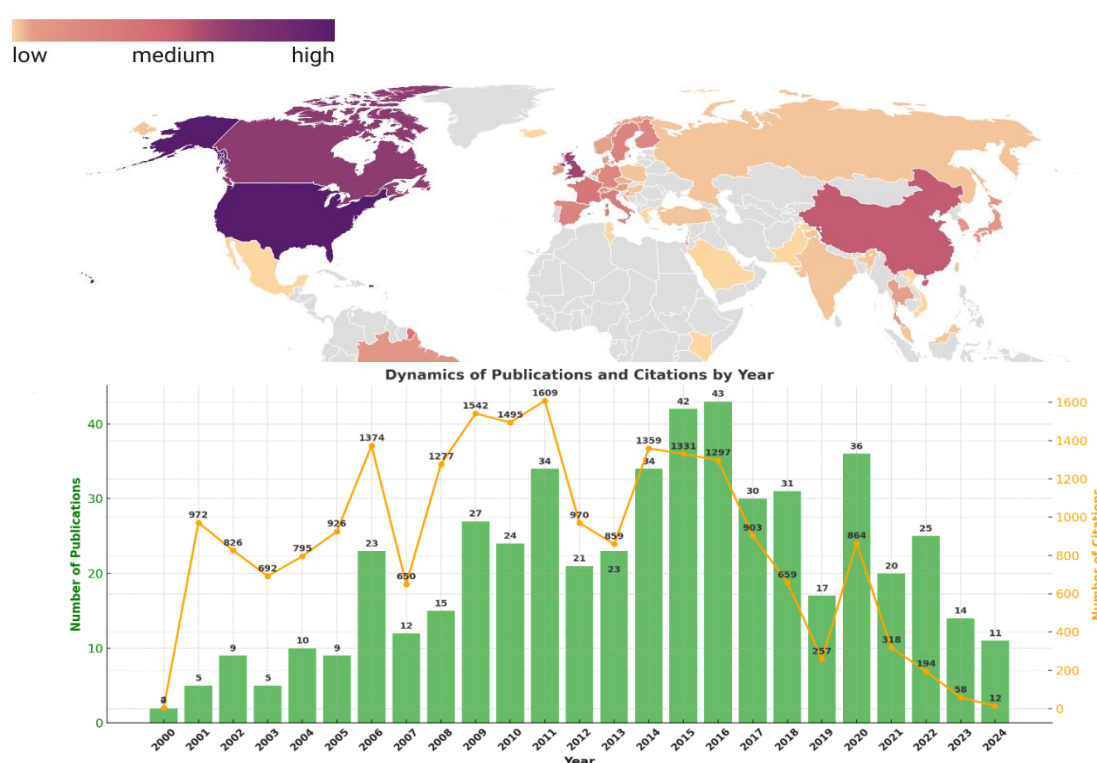
Further analyzing the publication dynamics after 2017, the number of citations decreased sharply, while the number of publications remained relatively stable, peaking at 36 articles in 2019 and 25 in 2021. The difference indicates that although research activities are still active, new studies have not yet received the same level of citation as earlier landmark works, and also reflects the division of research topics into areas such as Internet-related disorder games, online gambling and research of multiple dependencies, which leads to different citation models. Further, the number of publications and citations shows a decrease and in 2024 only 14 works and citations 12 were published. This decline is likely due to a lag in citations for recent works. It suggests that while scholarly work continues, its broader academic influence is still unfolding.

Geographic analysis of publication activity

The map shows data on where scientific activity is focused regarding lucidity and behavioral dependencies. Using quantitative data (see Fig. 5), we divided countries into three groups based on how many publications they had: low, medium, and high. The analysis reveals a clear imbalance in research interest across different parts of the world. This reflects both global inequalities in scientific resources and how much obscurity is discussed in various sociocultural contexts.

Figure 5

Geographical distribution of scientific publications (Scopus, 2000-2024)



Note: Created by the authors

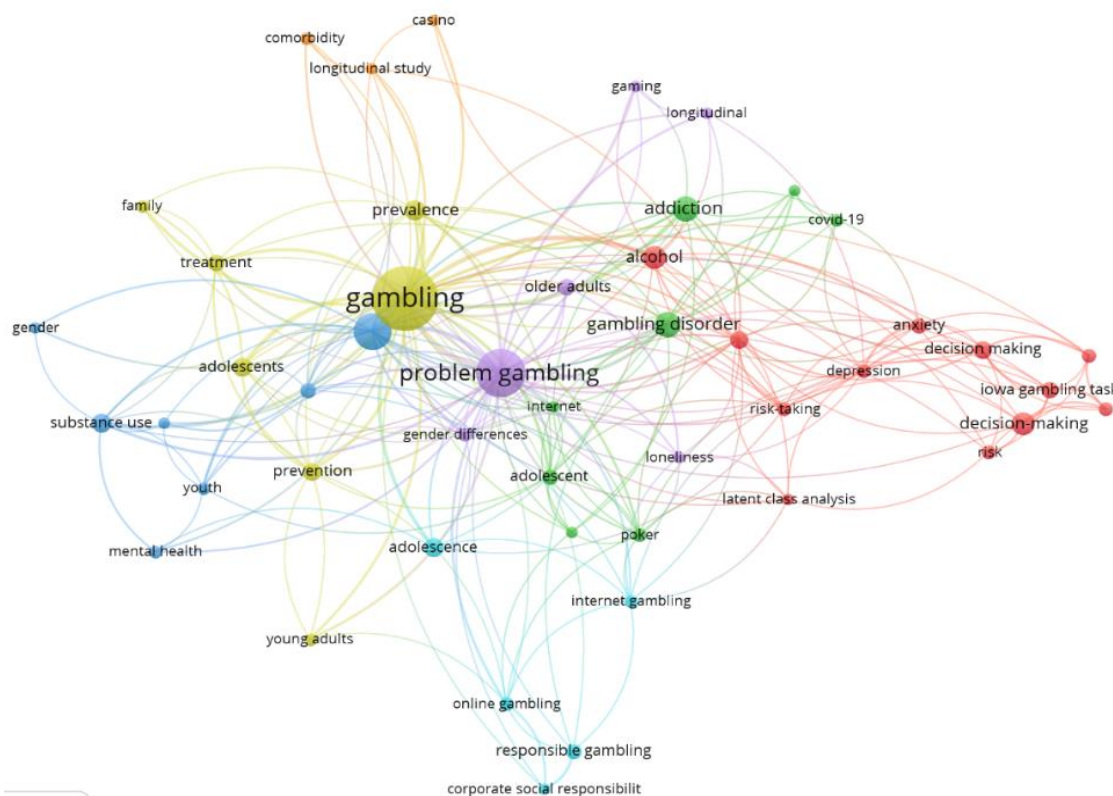
A high level of publication activity is seen in four countries: the USA, Australia, Canada, and the UK. This is understandable, as these countries are traditional leaders in social and behavioral sciences. This is evident not only from the number of publications but also from the high citation rate. Well-funded research centers, interdisciplinary programs, and the growth of social epidemiology and digital sociology explain the focus on behavioral issues, including gambling addiction. A moderate level of publication activity exists in several European countries, notably Germany, France, Italy, and Sweden,

as well as in Asia, including China, South Korea, and Japan, along with New Zealand and Israel. These countries show ongoing interest in the subject. However, studies focus on specific areas like clinical psychology, the digital environment, and drug epidemiology, rather than taking a broad interdisciplinary approach and creating a comparative database, especially regarding cultural differences in understanding and regulating gambling. Involving countries with low publication activity in international research networks could help expand the scientific foundation and promote social policy development and preventive practices in these regions.

The other map shown in Figure 6 is a network of co-clustering terms, grouped into five dominant clusters, each reflecting a specific area of scientific interest. From the point of view of sociological analysis, this clustering demonstrates the interdisciplinary nature of the problem. It allows for highlighting both macro-level and micro-level contexts in which the phenomenon of gambling addiction is considered.

Figure 6

Key clusters in the field of research on the topic of gambling



Note: Created by the authors

The keyword co-occurrence map shows the main themes that shape current research on gambling. At the center are the terms “gambling” and “problem gambling” which are the largest nodes and have the most connections. Their importance indicates that even with a variety of approaches and topics, the academic discussion remains focused on understanding gambling as a behavioral and social problem. “Problem gambling” serves as the main entry point for conversations across different fields. One primary direction looks at the neurocognitive and psychological aspects of gambling research. This area includes terms like “decision making” “Iowa Gambling Task” “anxiety” and “depression”. Studies in this area stress issues with decision-making processes, cognitive biases, and emotional regulation. They build on clinical and experimental traditions. This perspective has been essential for spotting individual vulnerabilities, but it mainly focuses on problems at the individual level. Another direction emphasizes

the social, demographic, and developmental aspects. Terms like “adolescents” “young adults” and “older adults” show the increasing focus on age-specific vulnerabilities. The attention on youth and adolescence addresses global concerns about online gambling and risk-taking behaviors during crucial stages of development. Meanwhile, research on older adults connects gambling with loneliness, health issues, and quality of life. Gender differences and family context also broaden this view, highlighting how social factors influence gambling participation and harm. The third theme centers on public health and co-occurrence with other issues. Keywords such as “addiction” “substance use” “alcohol” and “mental health” indicate that gambling is being studied alongside other behavioral and chemical dependencies. This reflects a trend of understanding gambling within a broader context of overlapping addictions and shared psychological or social risks. It also highlights how gambling research is becoming part of mainstream public health discussions. A fourth direction focuses on the digital and institutional aspects. In this case, we can talk about the transition from mere diagnostic methods to practical and institutional solutions, and collectively the map shows how gambling research has changed from its early clinical and cognitive roots to a complex and interdisciplinary field. Current trends show a twofold movement of continuing development of neurocognitive and clinical knowledge and increasing inclusion of social, demographic, digital and institutional perspectives and highlights the growing ecological and systemic approach in contemporary gambling studies where gambling is seen not only as an individual problem but also as a social and structural one.

Sociological interpretation of bibliometric results

Quantitative indicators, like the number of publications, citation trends, and keyword co-occurrence, highlight the interdisciplinary nature of this research area. However, the analysis goes beyond just numbers. It offers insights into the social meanings and interpretations of gambling across different societies. The keyword co-occurrence map identified five main thematic clusters:

- neuropsychological mechanisms and decision-making;
- clinical and comorbidity studies;
- prevention and family-related factors;
- social vulnerability and inequality;
- digital gambling, corporate responsibility, and regulation.

Each cluster reflects not only academic interests but also sociological trends in how societies view gambling behavior. The first two clusters, focused on neurocognitive and clinical approaches, relate to the medicalization of gambling. This interpretation is common in Western contexts with well-developed public health systems. These studies present gambling as a behavioral disorder that needs therapy and medication. In contrast, the clusters related to prevention, social vulnerability, and digital gambling emphasize social, cultural, and institutional factors. In these cases, gambling is seen as a sign of wider social changes, like economic insecurity, the rise of digital leisure, and the decline of traditional family structures. A deeper interpretation of the bibliometric data uncovered three consistent sociological dimensions (see Table 2).

2-Table. Sociological Dimensions Identified in the Bibliometric and Content Analysis

Dimension	Description and Sociological Interpretation
Social and family factors	Publications on prevention and family influence highlight the importance of social responsibility, intergenerational communication, and parental oversight. These studies often link gambling to the breakdown of family unity, loss of control, and stress in domestic environments. They demonstrate that behavioral dependence functions less as an individual pathology and more as a social issue rooted in family and community dynamics.
Institutional and economic contexts	Research on corporate social responsibility and online gambling examines how industry practices, market expansion, and weak regulation normalize gambling. These studies reveal how neoliberal economic structures and digital gamification blur the boundaries between entertainment and addiction, connecting gambling behavior to broader systems of inequality, consumer manipulation, and economic vulnerability.

Cultural and moral dimensions	Studies addressing stigma and moral judgment conceptualize gambling as a socially deviant yet culturally embedded behavior. They show that in collectivist or conservative societies, stigma fosters silence and underreporting, while in liberal contexts it coexists with the commercial normalization of gambling. This duality reflects the tension between moral regulation and market-driven acceptance of risky leisure.
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Note: Created by the authors

The geographical analysis supports these sociological differences. In developed countries, people often view gambling as a problem through clinical and policy-focused perspectives. They stress regulation, responsible gambling, and health initiatives. In developing or post-Soviet regions, like Central Asia, gambling is seen in moral, cultural, and socio-economic terms, reflecting unemployment, poverty, and weak institutional control. These differences show how global academic discussions reflect local social realities and power structures in knowledge creation. Overall, the findings from bibliometric and content analysis show that biomedical views mainly influence research on gambling addiction. It often overlooks social and cultural aspects. However, new themes are emerging around corporate responsibility, social inequality, and stigma. This suggests a slow shift toward a broader sociological understanding. These findings set the stage for the sociological interpretation that follows. In this section, we will re-evaluate the theoretical perspectives from the literature review in light of the empirical data.

The findings from the bibliometric analysis clearly confirm the study's hypothesis that research on gambling addiction is focused on biomedical and neurocognitive perspectives. In contrast, sociological approaches are less common and vary by region. First, the thematic breakdown of the most cited publications reveals an overwhelming focus on neurocognitive and clinical frameworks. Eight of the top ten cited articles examine brain mechanisms, psychiatric disorders, and decision-making. This confirms that biomedical views play a central role in academic discussions about gambling addiction. On the other hand, sociological concepts like stigma, social capital, and institutional responsibility are not present in the most cited literature, supporting the idea that they are marginalized. Second, the analysis of publication trends reveals that the peak growth period from 2011 to 2017 coincided with the rise of interdisciplinary approaches integrating neuroscience, psychiatry, and psychology. Finally, the clustering of keywords highlights the marginal status of sociological and cultural categories and there are clusters that refer to “family,” “prevention,” and “social vulnerability,” these terms are not as prominent as central clusters focused on “addiction,” “decision-making,” and “neuropsychology. This indicates that sociological and institutional perspectives have not yet reached the same level of influence as clinical and biomedical models in shaping knowledge in the field. Overall, the results show that the current research landscape features a strong biomedical focus, geographic imbalances, and fragmented themes. This provides empirical support for the study's hypothesis about the limited inclusion of sociological frameworks in the global conversation on gambling addiction.

Discussion

The bibliometric findings position gambling addiction research as a formally interdisciplinary yet structurally stratified field. While the literature has expanded well beyond its psychiatric origins, encompassing neuroscience, sociology, public health, and digital governance studies, this expansion does not automatically imply epistemic balance. We argue that what appears as pluralism conceals persistent hierarchies in explanatory authority.

The temporal trajectory of scholarly production reflects not only academic growth but also broader socio-technological shifts. The early 2000s marked the conceptual stabilization of gambling addiction within behavioral science. Between 2006 and 2016, exponential growth coincided with the globalization of internet gambling markets and intensified regulatory debates. During this period, gambling became firmly institutionalized as a behavioral addiction analogous to substance dependence (Walther et al., 2012; Welte et al., 2002). Publication volume and citation rates peaked, signaling disciplinary consolidation.

However, the post-2017 moderation in citation intensity and publication output suggests a reconfiguration of scholarly attention. This may represent saturation around established paradigms or a diffusion of research into adjacent domains such as gaming disorder, social media dependency, and fintech-driven behavioral risk (Beard & Wolf, 2001, p. 380; Ghelfi et al., 2024; Sirola et al., 2021). The abrupt citation decline in 2020 plausibly reflects the systemic disruption caused by the COVID-19 pandemic, which altered both research infrastructures and everyday gambling practices. Yet the longer-term implications of this decline remain theoretically open: does it indicate consolidation, fragmentation, or paradigm displacement?

A central finding concerns thematic asymmetry. Neurocognitive and clinical paradigms continue to dominate high-impact scholarship. Brain function, executive control, impulsivity, and psychiatric comorbidity constitute the symbolic center of the field (Jollant et al., 2005; Van Leijenhorst et al., 2010). These approaches have undoubtedly advanced understanding of individual vulnerability and treatment pathways. Yet their predominance marginalizes structural and cultural explanations.

Sociological constructs-economic inequality, family systems, social capital, stigma, regulatory governance- remain comparatively peripheral in citation hierarchies (Hing et al., 2014; Lloyd et al., 2025; Quigley, 2022). The keyword map demonstrates this imbalance: social capital and policy accountability appear as dispersed, low-frequency terms rather than central organizing concepts (Awaworyi Churchill & Farrell, 2020). We suggest that this reflects a broader epistemic bias toward biomedical authority. Gambling addiction, while biologically mediated, is also socially produced. It unfolds within economic precarity, digital platform design, and normative cultural environments (Beckert & Lutter, 2009; Floyd et al., 2025; Ghelfi et al., 2024; Raybould et al., 2021). Without integrating these structural determinants, explanation risks reductionism.

Geographically, the field mirrors global inequalities in knowledge production. Research output is overwhelmingly concentrated in North America, Western Europe, and Australia regions characterized by consolidated academic infrastructures and funding ecosystems (Oksanen et al., 2021). In contrast, Eastern Europe, Central Asia, Latin America, Africa, and parts of Asia remain underrepresented.

This asymmetry constrains theoretical generalizability. Gambling practices are culturally embedded and institutionally mediated; they do not manifest uniformly across regulatory regimes and socio-economic systems (Reith & Dobbie, 2011, p. 489). Informal gambling networks, hybrid gaming-betting practices, or culturally specific moral framings may remain invisible in dominant Anglophone scholarship. We argue that epistemic centralization limits analytical diversity. Strengthening cross-regional collaboration and supporting locally grounded research particularly in regions such as Central Asia would broaden the empirical and conceptual base of the field.

The emergence of a cluster centered on responsible gambling and corporate social responsibility signals an institutional turn (Tetreova, 2023). Increasingly, scholarship recognizes that gambling addiction is shaped not only by individual choices but by corporate architecture, algorithmic engagement systems, and regulatory frameworks (Aonso-Diego et al., 2025; Badu et al., 2025; Savolainen et al., 2025). However, empirical evaluation of these governance instruments remains limited. Few studies rigorously test whether CSR initiatives or “responsible gambling” programs measurably reduce harm. Moreover, comparative analysis of regulatory regimes across jurisdictions is scarce.

This gap is policy-relevant. As digital gambling platforms expand transnationally, governance must adapt to platform capitalism’s structural incentives. Without systematic evaluation, responsible gambling frameworks risk functioning as symbolic compliance rather than substantive harm reduction (Tetreova, 2023, p. 526; Aonso-Diego et al., 2025; Badu et al., 2025).

Taken together, our findings suggest that gambling addiction research stands at a methodological and theoretical crossroads. Advances in clinical and cognitive research have been substantial. Yet macro-social analysis remains comparatively underdeveloped. Concepts such as stigma, social capital, and institutional trust require deeper operationalization. Stigma, in particular, remains a powerful barrier to treatment in many societies but is rarely modeled quantitatively in gambling research (Hing et al., 2014; Lloyd et al., 2025; Quigley, 2022; Singer, 2025).

Methodologically, the field would benefit from greater pluralism. The dominance of quantitative, English-language, Western scholarship highlights the need for qualitative, ethnographic, and comparative approaches. Understanding how gambling is lived, normalized, or resisted across diverse cultural settings requires methodological diversification (Oksanen et al., 2021).

From a policy standpoint, these results illuminate strategic gaps. Interventions informed solely by biomedical paradigms risk overlooking structural determinants such as labor insecurity, digital exposure, and regulatory permissiveness (Beckert & Lutter, 2009; Raybould et al., 2021; Savolainen et al., 2025). A strengthened sociological orientation would enable more holistic policy design addressing family dynamics, economic vulnerability, social support systems, and institutional accountability.

Understudied themes such as digital gambling in developing economies or culturally specific stigma regimes represent promising directions for future research. In regions like Central Asia, including Kazakhstan, localized empirical inquiry could inform context-sensitive regulatory frameworks and prevention programs. Policy measures might integrate stigma reduction campaigns (Hing et al., 2014; Lloyd et al., 2025; Singer, 2025), community-based support systems, and digital literacy initiatives targeting youth populations.

Limitations

This study is subject to several limitations. First, the analysis was restricted to the Scopus database and English-language publications. Consequently, research published in other languages or indexed elsewhere may be underrepresented, reinforcing existing epistemic asymmetries.

Second, bibliometric analysis is inherently quantitative. Citation counts measure visibility and influence, not theoretical quality or policy effectiveness. High citation frequency does not necessarily equate to explanatory adequacy.

Third, recent years (2021–2024) are affected by citation lag and publication delays, potentially distorting short-term trend interpretation. These methodological constraints must be considered when evaluating temporal fluctuations.

In theoretical terms, the field's current configuration reflects a tension between biomedical consolidation and sociological expansion. Advancing a more coherent understanding of ludomania requires not only interdisciplinary synthesis but also epistemic rebalancing where structural, cultural, and institutional determinants occupy a more central position in explanatory frameworks.

Conclusion

The present study set out to examine the structural architecture of gambling addiction research through a bibliometric lens. Beyond mapping publication trends, our objective was to interrogate the epistemic configuration of the field its thematic hierarchies, geographical asymmetries, and paradigmatic tensions.

Our findings demonstrate that gambling addiction research has achieved formal interdisciplinarity, yet remains substantively uneven. Neurocognitive and clinical paradigms occupy the symbolic center of the field, shaping citation hierarchies and methodological standards. These approaches have yielded indispensable insights into executive dysfunction, reward processing, and psychiatric comorbidity. However, their dominance has also contributed to a partial reduction of gambling addiction to individual-level pathology.

In contrast, sociological frameworks particularly those addressing social capital, stigma, inequality, institutional governance, and regulatory accountability remain comparatively peripheral. The bibliometric evidence suggests that structural and cultural determinants are present but not proportionally integrated into high-impact scholarship. This imbalance reflects broader epistemic hierarchies within global knowledge production, where biomedical models often command greater institutional legitimacy.

Geographical concentration further reinforces this asymmetry. Knowledge production is disproportionately centralized within English-speaking, high-income countries. Such concentration risks universalizing context-specific findings and marginalizing locally embedded gambling practices in

underrepresented regions. The relative absence of Central Asia, Eastern Europe, Africa, and Latin America from high-impact discourse underscores the need for epistemic diversification.

We therefore argue that the field currently stands at a paradigmatic crossroads. Future development requires not merely additive interdisciplinarity, but integrative synthesis one that systematically connects neurobiological vulnerability with socio-economic inequality, digital platform governance, cultural framing, and institutional accountability. Without this synthesis, gambling addiction research risks remaining compartmentalized despite its conceptual breadth.

From a policy perspective, our findings carry significant implications. If intervention strategies continue to be primarily informed by biomedical paradigms, structural drivers such as economic precarity, digital platform architecture, marketing practices, and regulatory design may remain insufficiently addressed. A strengthened sociological orientation would enable multi-level policy frameworks integrating:

- family and community-level prevention,
- digital literacy and youth protection measures,
- institutional regulation of online platforms,
- stigma reduction campaigns,
- and cross-sectoral collaboration between public health, education, and regulatory authorities.

In regions such as Central Asia, including Kazakhstan, localized empirical research is especially urgent. Digital gambling expansion, transitional regulatory regimes, and culturally specific stigma dynamics require context-sensitive investigation. Supporting regional scholarship is not only a matter of representation but of analytical adequacy.

Methodologically, the study reaffirms the utility of bibliometric analysis as an epistemic diagnostic tool. While citation-based approaches cannot capture qualitative nuance, they illuminate structural patterns of influence and marginalization. By revealing thematic concentrations and blind spots, bibliometric mapping provides strategic guidance for future research agendas.

Ultimately, advancing a more coherent understanding of ludomania demands epistemic rebalancing. Integrating macro-social analysis with biomedical insight, incorporating non-Western perspectives, and critically examining governance structures are necessary steps toward a more comprehensive and socially responsive paradigm of gambling addiction research.

Funding

This research received no external funding.

Ethical Considerations

The study was based on publicly available documents and publications. It did not involve interaction with human participants, the collection of personal data, or any form of intervention; therefore, ethical committee approval was not required.

Data Availability

All materials used in the study are listed in the References section and are accessible via the DOI or URL provided. No separate dataset containing personal or confidential data was created as part of the study. The analytical criteria and interpretation rules are presented in Table 1.

Conflict of Interest

The author declares that there is no conflict of interest that could have influenced the results or interpretation of this study.

Author Contribution

CRedit: All authors contributed to the conceptualization of the study, development of the methodology, research and analysis of the materials, preparation of the initial draft of the manuscript, and review and editing of the final version. All authors have read and approved the final version of the manuscript.

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