Research trends in gambling tax dynamics: A bibliometric analysis

Tren penelitian pada dinamika pajak perjudian: Analisis bibliometrik

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Abstract

Gambling has been around for a long time and continues to evolve as it becomes integrated with video games. In its development, gambling continues to have negative impacts both economically and socially, such as unemployment, tax losses, divorce, and suicide. However, gambling can also have a positive impact, such as an increase in government revenue if taxed appropriately. This study aims to offer a thorough analysis of many publications from the last decade and monitor the progress of scientific research on gambling taxes as found in the Scopus database, utilizing VOSviewer and WordStat. In this study, the method used was bibliometric analysis. Between 2014 and 2023, a total of 132 scientific articles were dedicated to studying gambling taxes. There are a total of seven groups consisting of 111 keywords that are directly connected to gambling taxes. There are three groups of eight authors who are collaborating on a research project about gambling taxes. The study found that the University of Macau has affiliations with the majority of publications that impose gambling taxes. The United States has the biggest number of publications on the topic of gambling taxes. Studies on gambling taxes frequently confront issues of tax evasion and focus on a significant topic, namely the impact on public health and individuals. The study concluded that publications related to gambling taxes are dominated by articles from various multidisciplinary fields. This study recommends a wider range of publications and research from a more varied range of time and sources.

Keywords: bibliometric analysis; gambling tax dynamics; Scopus-driven research trends

Abstrak

Perjudian telah ada sejak lama dan terus berkembang seiring terintegrasinya dengan permainan video. Dalam perkembangannya, perjudian terus membawa dampak negatif baik itu secara ekonomi maupun sosial, seperti pengangguran, kerugian pajak, perceraian, serta bunuh diri. Meski demikian, perjudian juga dapat membawa dampak positif seperti peningkatan pendapatan negara apabila dikenai pajak secara tepat. Penelitian ini bertujuan untuk menawarkan analisis menyeluruh dari banyak publikasi dari dekade terakhir dan memantau kemajuan penelitian ilmiah tentang pajak perjudian seperti yang ditemukan dalam database Scopus menggunakan VOSviewer dan WordStat. Dalam penelitian ini, metode yang digunakan adalah analisis bibliometrik. Sekitar tahun 2014 hingga 2023 terdapat total 132 artikel ilmiah yang meneliti tentang pajak perjudian. Ada total tujuh kelompok yang terdiri dari 111 kata kunci yang terkait langsung dengan pajak perjudian. Terdapat tiga kelompok dengan delapan penulis yang bekerja sama pada proyek penelitian tentang pajak perjudian. Studi ini menemukan bahwa Universitas Macau memiliki afiliasi dengan sebagian besar publikasi yang membahas pajak perjudian. Amerika Serikat memiliki jumlah publikasi terbesar pada topik pajak perjudian. Studi tentang pajak perjudian sering membahas masalah penghindaran pajak dan berputar pada topik yang signifikan, yaitu dampaknya pada kesehatan masyarakat dan individu. Studi ini menyimpulkan bahwa publikasi berkaitan dengan pajak perjudian didominasi oleh artikel dari berbagai multidisiplin ilmu. Studi ini merekomendasikan untuk lebih banyak menjangkau publikasi dan penelitian dari rentang waktu dan sumber yang lebih bervariasi.

Kata kunci: analisis bibliometrik; dinamika pajak perjudian; tren penelitian berdasarkan Scopus

Introduction

Gambling is the act of wagering money in a game, with the potential for both gain and loss. Historically, gambling was consistently linked to activities involving dice or cards. In the present day, gambling has undergone changes and advancements due to the progression of time and technology. One instance

of this progress is the rise of methods and systems called loot boxes or gacha in video games. In their study, Xiao et al. (2024) discovered an immediate correlation between the acquisition of loot boxes in video games and the emergence of gambling-related problems. This issue is exacerbated by children's inclination to obtain digital items in video games by purchasing them through loot boxes (Mills et al. 2024). Loot boxes are predominantly incorporated into video games originating from Western countries, employing algorithms based on chance and a system that limits supply. Gacha refers to the major procedures and systems found in video games that originate from Eastern countries such as China and Japan. Therefore, prohibiting gambling proves to be counterproductive, given that numerous popular video games incorporate features like loot boxes or gacha that function similarly to gambling systems.

Gambling has numerous detrimental economic consequences. Several studies have shown that many European countries experience unemployment due to gambling (Spångberg & Svensson 2020), including the Czech Republic (Drbohlavová 2015). Not only does it contribute to unemployment, but gambling can also cause tax losses. In Indonesia, it is recorded that the number of transactions and the total value of money turnover from illegal online gambling during the 2017–2022 period have reached 157 million and IDR 190 trillion, respectively. These values show an upward trend every year. Given the substantial influx of funds into the illegal gambling industry that is not subject to tax, it can certainly lead to reduced public spending, which weakens the economy. Gambling also has many negative societal impacts. Many studies have shown that gambling is one of contributing factors to divorce in many countries, such as Australia (Dowling et al. 2020), Indonesia (Latifah & Ratinga 2022), and Norway (Syvertsen et al. 2023). In Indonesia, there were a total of 1,191 divorce cases in 2022, according to the BPS (2023). Not only is divorce a concern, but gambling also contributes to suicide in many parts of the world, including Europea, America, Asia (Giovanni et al. 2017), and East Africa (Kaggwa et al. 2022).

Gambling itself is an illegal activity in some countries, such as Indonesia. Even so, gambling remains a scourge for today's society in Indonesia. It can be seen from the Ministry of Communication and Information Technology (Kominfo), which recorded 10,921 specific public complaints regarding negative internet gambling content in March 2022 alone. Furthermore, the APJII survey (2023) showed 34.26% of respondents who claim to know about gambling sites on the internet, while only 5.61% reported accessing the gambling site. This illustrates that although only a small number of entities participate in gambling, specifically online gambling, its effect is tangible. The problem of gambling is highly challenging to eliminate. Gambling has become a tradition for some people and for certain government officials who permit it (Nooteboom 2015). Many people engage in gambling to find entertainment and to improve their economic conditions. This is the factor that contributes to the popularity of gambling among those with fragile economies. Moreover, adolescents who are already ensnared in online gambling addiction face significant challenges when trying to alter their habits.

The tax itself is a policy instrument used to increase government revenue, both central and regional. The government can impose taxes on several aspects, including individuals' earnings and business profits, and integrate them into the prices of certain goods, services, and transactions. Tax rates that are too high or too low have both positive and negative impacts on business and economic growth, as well as on consumer behavior. High tax rates can lead to tax avoidance and a decrease in business and economic growth (Vasilopoulou & Thomakos 2017). This suggests that consumers are sensitive to tax changes and adjust their behavior in response. On the other hand, revenue generated from taxes can be used to fund infrastructure projects, which can have a positive impact on businesses and the economy. An analysis of the effects of high-speed rail lines on tax revenue and regional economies in Japan revealed that establishing high-speed rail links with major cities positively affected the tax revenues of the connected regions (Yoshino & Abidhadjaev 2017).

On the other hand, tax rates that are too low can lead to an increase in business and economic growth. However, if the tax rate is too low, then the government will not have enough revenue to do its job. If forced, the government budget will experience a deficit, which eventually leads to higher interest rates and the risk of a greater fiscal crisis (Nelson & Phillips 2021). Hence, it is imperative to establish the tax rate at an ideal level, striking a balance between being excessively high or excessively low.

Research on gambling taxes has been done before. First, there is a study by Myles et al. (2024) discussing public support for gambling harm reduction policies in Australia. Second, there is a study by Radvan (2017) discussing the new Czech Gambling Tax Law could help protect the interests of municipalities by giving municipalities adequate authority to combat gambling, as they could completely ban all gambling machines in their areas. Based on aforementioned explanation, the problem addressed in this study is how to identify and analyze the gaps in prior research on gambling taxes using bibliometric analysis tools such as VOSviewer and WordStat. The objective of this study is to offer a thorough analysis of many publications from the last decade and monitor the progress of scientific research on gambling taxes as found in the Scopus database. It aims to identify novel research gaps and understand the interrelationships between areas of interest and other research disciplines through bibliometric analysis.

The structure of this research is as follows: First, it provides background to the research. Second, the research method is applied to evaluate the proposed research objectives. Following that, the researchers present the findings as scientific data, including keyword mapping, prominent authors, co-authorships, institutions, and countries; the most cited and recently published articles; as well as important theme analysis, Proximity Plot, and WordCloud. Finally, researchers will summarize key findings, note limitations, and make recommendations for future research.

Research Method

In this study, the method used was bibliometric analysis. Bibliometrics is a research method that involves quantitative and qualitative analysis of research publications, such as articles, books, conference papers, and the like, to understand the structure, trends, and impact of a particular field of study. It is used to map, analyze, and visualize scientific literature, providing insight into research topic development, collaboration networks, and citation patterns (Pahrudin et al. 2022, Sadat & Lawelai 2023). Bibliometric analysis can help identify principal investigators, institutions, and countries involved in specific research fields, as well as emerging trends and knowledge gaps (Rodrigues et al. 2023).

The search strategy was carried out on the Scopus database using keywords (TITLE-ABS-KEY("gambling") AND TITLE-ABS-KEY("tax")) AND PUBYEAR > 2013 AND PUBYEAR < 2024. Researchers selected a ten-year time frame spanning from 2014 to 2023 to track the latest and relevant data developments. The results obtained are then exported in RIS and plain text formats on January 19, 2024. There are 132 documents that have been found, according to Figure 1. As of that date, no documents have been published in 2024. The types of documents included are articles, conference papers, reviews, notes, letters, books, and book chapters. All documents are analyzed by keywords, year, author name, document type, subject area, and country.
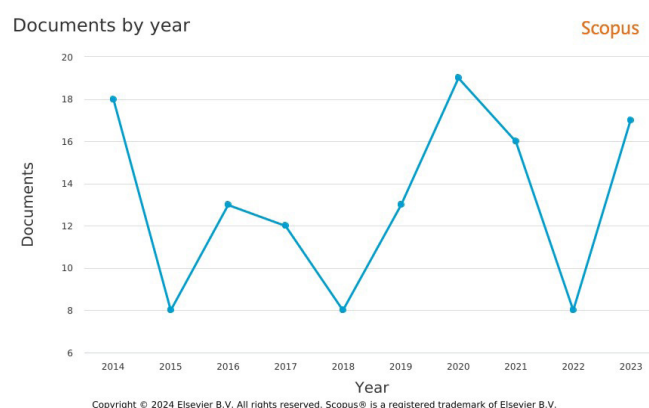
Figure 1.
Comparison of the number of document publications each year
Source: Primary data processed from Scopus database, 2024

From the exported documents, bibliometric analysis was performed using VOSviewer (version 1.6.20) and WordStat (version 2023.2.8). Researchers initiated the process with VOSviewer by importing documents in the produced RIS format. Then, a keyword distribution map is created through co-

authorship and co-occurrence features, including network visualisation, overlay visualisation, and density visualization. In contrast, with WordStat, researchers uploaded plain text documents that have been exported. This gives rise to the various data visualizations needed. Researchers used features such as Topics, Proximity Plot, and WordCloud to understand the distribution of the keywords "gambling" and "tax" in this study. The results obtained were compared with each other and summarized to answer the research aims. Finally, researchers drew conclusions based on the findings.

Results and Discussion

The results of this study provide a comprehensive overview of the research landscape on gambling taxes over the past decade. By utilizing bibliometric analysis tools such as VOSviewer and WordStat, we identified key trends, prominent authors, and significant themes within the field. This section delves into the detailed findings, including keyword mapping, co-authorship networks, and the distribution of publications across various institutions and countries. Additionally, we explore the most cited and recent documents as well as important theme analysis, Proximity Plot, and WordCloud to highlight influential works and emerging research areas. Through this analysis, we aim to offer valuable insights for future research in the realm of gambling taxation.

Gambling tax keyword mapping

There are seven clusters with a total of 111 keywords from 132 documents found in publications on gambling taxes. Table 1 presents a list of identified clusters along with the keywords included in each cluster. These clusters are designed to analyze frequently discussed keywords in previous studies and provide opportunities for further research. The visualization in the form of mapping, as shown in Figure 2, can assist researchers, especially newcomers, in understanding their research position relative to prior studies as a starting point. If a researcher finds a concept intriguing to explore, they can refer to other related concepts within the same cluster.
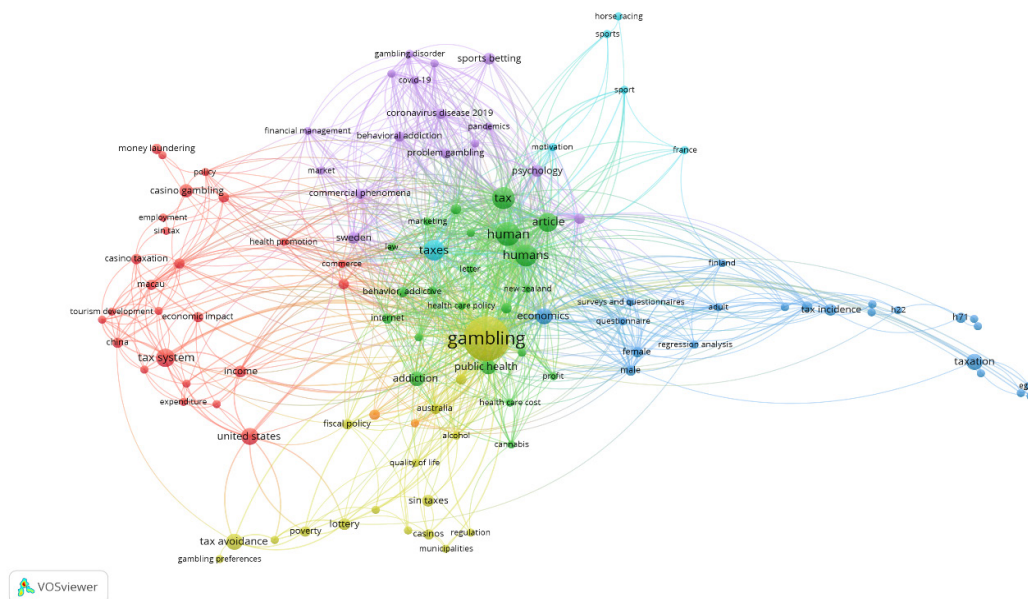

Figure 2.
VOSviewer Network Visualization results based on keywords
Source: Processed primary data, 2024

Based on Table 1, Cluster 1 involves casino taxation and tourism development. Cluster 2 emphasizes addiction, alcoholic beverages, and taxes. Cluster 3 discusses gambling taxes and tax incidence. Cluster 4 centers on the study of individuals' inclinations towards gambling and tax avoidance. Cluster 5 discusses the correlation between online gambling and the pandemic. Cluster 6 pertains to the domains of sports and taxes. Cluster 7 focuses on societal issues and the lack of employment opportunities. The seven clusters can serve as a reference for conducting further research into gambling taxes.

Table 1.
VOSviewer keyword cluster results

Cluster No.	Keywords	Number of keywords
Cluster 1	Casino gambling, casino taxation, China, commerce, competition (economics), economic impact, empirical analysis, employment, expenditure, health promotion, income, internet gambling, Macao, Macau, money laundering, policy, public policy, recreational facility, sin tax, social costs, socioeconomic impact, tax system, tourism development, tourism economics, united states	25 Keywords
Cluster 2	Addiction, alcohol consumption, alcoholic beverage, article, behavior addictive, cannabis, health care cost, health care policy, human, humans, internet, law, legislation and jurisprudence, letter, marketing, New Zealand, pathological gambling, politics, profit, public health, recreation, tax	22 Keywords
Cluster 3	Adult, economic, egms, electronic gaming machines, female, Finland, gambling industry, gambling taxes, h22, h71, herfindahl–hirschman index, incidence, l83, male, questionnaire, regression analysis, regressivity, sports gambling, survey and questionnaire, tax incidence, taxation, two-part model	22 Keywords
Cluster 4	Alcohol, Australia, casinos, fiscal policy, gambling, gambling preferences, household income, local government, lottery, municipalities, poverty, prevention and control, quality of life, regulation, sin taxes, South Africa, tax avoidance, tobacco	18 Keywords
Cluster 5	Behavioral addiction, commercial phenomena, coronavirus disease 2019, covid-19, epidemiology, financial management, gambling disorder, market, online casino, online gambling, pandemic, pandemics, problem gambling, psychology, sports betting, Sweden	16 Keywords
Cluster 6	France, horse racing, motivation, sport, sports, taxes	6 Keywords
Cluster 7	Social problem, unemployment	2 Keywords
Total keywords		**111 Keywords**

Source: Primary data processed, 2024

In Cluster 3, there are important keywords that can be used as references, namely gambling taxes and tax incidence. Several studies indicate that gambling taxes are highly regressive in various countries, including in Switzerland (Kohler 2016), Italy (Gandullia & Leporatti 2019), and Finland (Roukka & Salonen 2020). This can serve as a valuable lesson for the government, highlighting the importance of implementing a progressive tax system for the legalization of gambling. Further research could potentially be conducted about a progressive gambling tax system to ensure that individuals, especially those from weak economies, can feel the impact of the tax so that it fulfills the values of social justice.

Cluster 4 presents intriguing keywords that researchers should take into account, specifically gambling preferences and tax avoidance. Multiple studies have found a correlation between the gambling preferences of local individuals and business tax avoidance (Alharbi et al. 2022, Lei et al. 2023, Yin et al. 2023). Further investigation could potentially be conducted through case studies in locations where there is a notable preferences towards gambling, but the government has banned it.
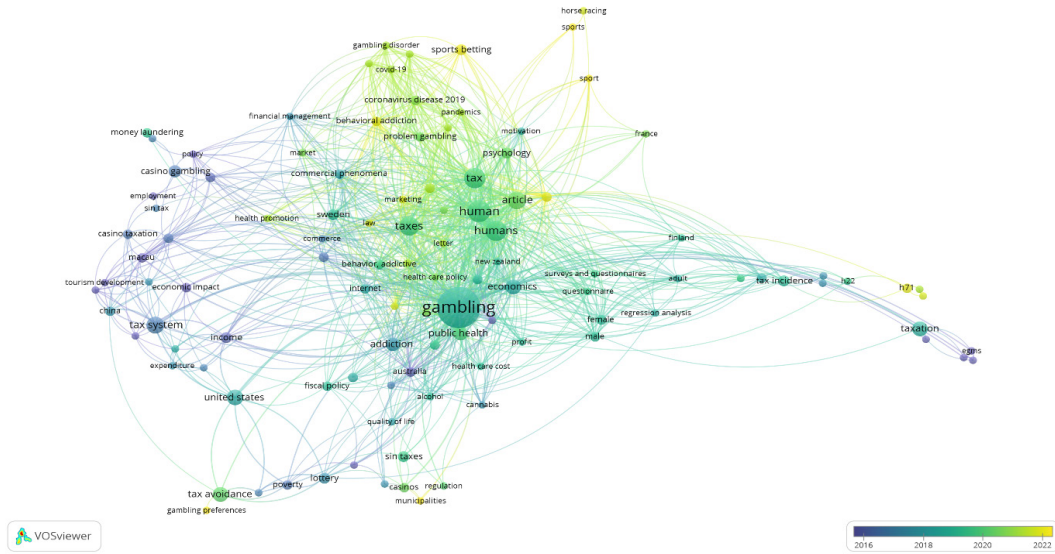
Figure 3.
VOSviewer Overlay Visualization results based on keywords
Source: Primary data processed, 2024

Figure 3 shows a timeline of gambling tax publications differentiated by color, i.e. purple, green, and yellow. It can be seen that publications regarding gambling taxes over the past ten years have increased sharply since 2019, represented by the color green. This indicates that the COVID-19 epidemic could potentially encourage gambling behavior, making it imperative to gather more data for research purposes. For example, a study by Andersson et al. (2022) revealed a significant trend shift in the positive direction for overall commercial and sports-based online gambling during the pandemic.

Distinguished authors, co-authorships, institutions, and countries

Publications on the subject of gambling taxes between 2014 and 2023 have featured numerous writers from diverse institutions, nations, and academic fields. A total of 260 authors were discovered. According to Figure 4, there are 13 authors who have published two or more documents. Gu was the most prolific author in terms of both being the initial author and co-author.
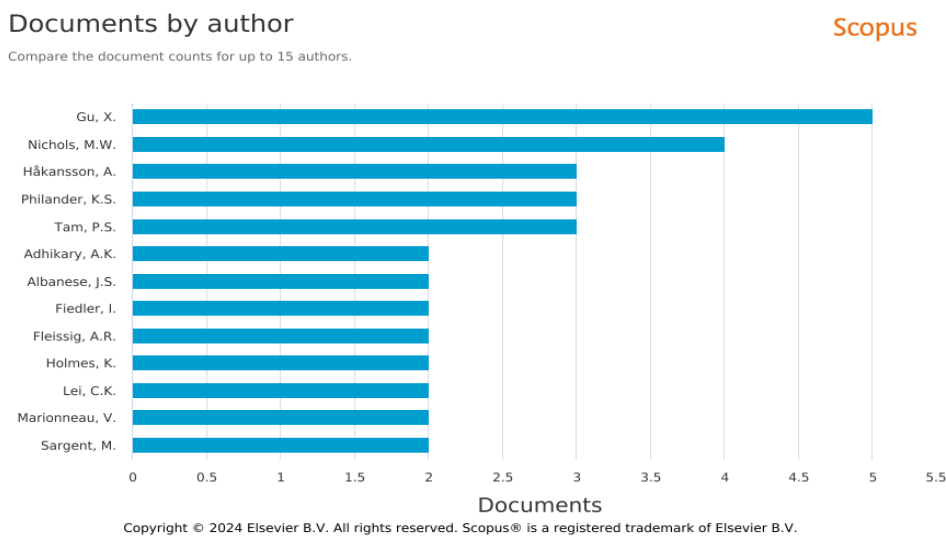
Figure 4.
Comparison of number of document publications per author
Source: Primary data processed from Scopus database, 2024

Of the many authors who have published publications on gambling taxes over the past ten years, several authors collaborate on co-authorship analysis. Figure 5 shows are eight authors divided into three clusters. Cluster 1 (red) includes three authors, namely Lei, Sheng, and Yuen. Cluster 2 (green) also has three authors, namely Gu, Li, and Wu. Cluster 3 (blue) consists of two authors, Chang and Tam. The overall publication discussed through co-authorship of the three clusters focuses on casino taxes in Macau (Gu & Tam 2014a, Gu & Tam 2014b; Li et al. 2015, Gu et al. 2016, Gu et al. 2021). Authors in these cluster are predominately affiliated with the University of Macau.
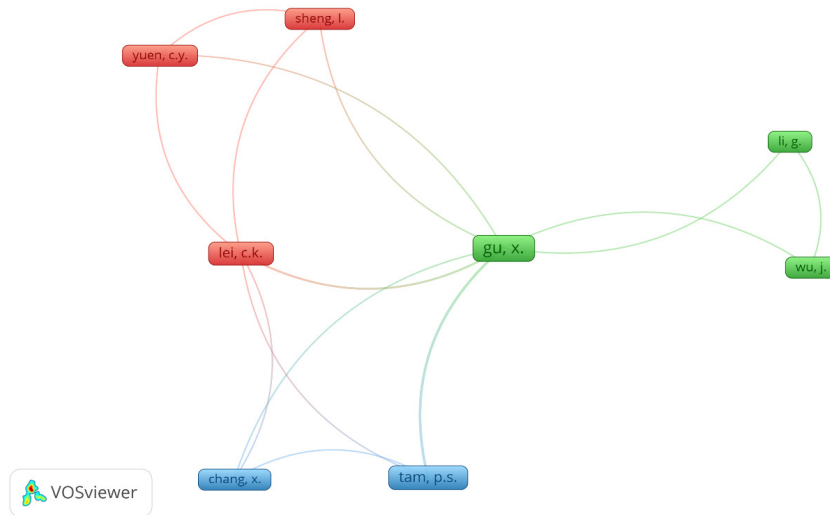

Figure 5.
VOSviewer Network Visualization results based on author
Source: Primary data processed, 2024

According to Figure 6, Gu is the author who is distinguished by the most intense hue. The more vibrant the hue associated, the greater the level of impact on the author's publishing. This demonstrates that Gu deserves to be recognized once more for being the most productive author in cooperating on studies related to gambling tax.
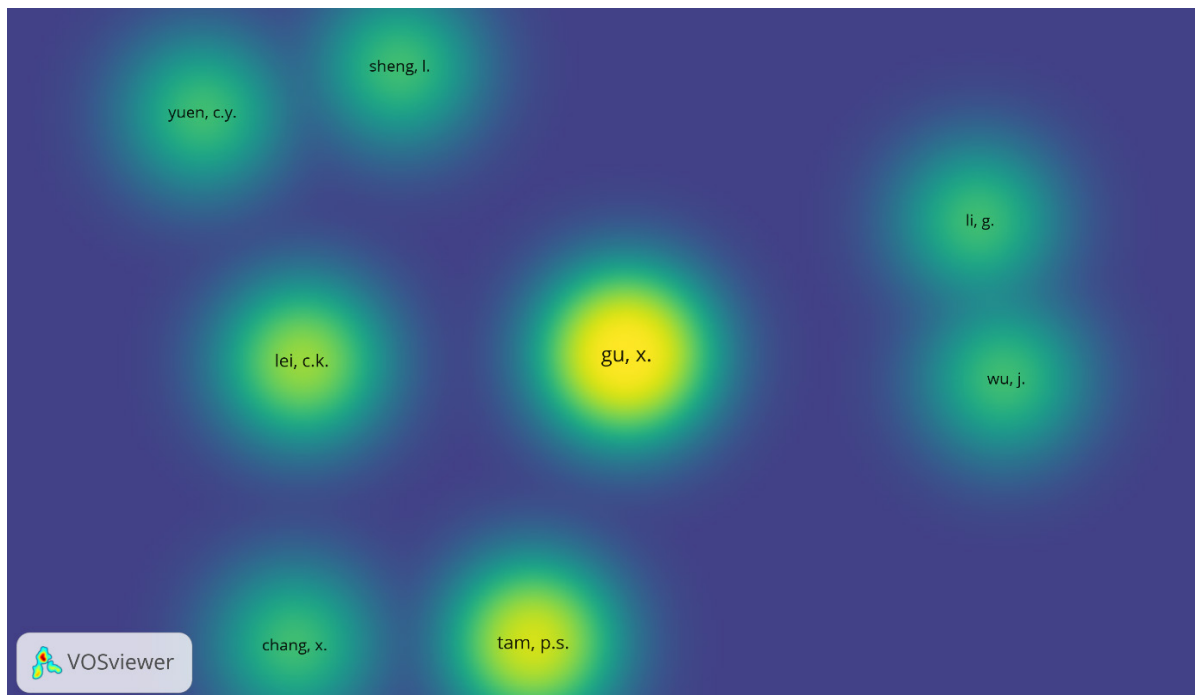

Figure 6.
VOSviewer Density Visualization results based on author
Source: Primary data processed, 2024

Various institutions affiliated of the author who researched gambling taxes over the past ten years are scattered around the world as shown in Figure 7. The institution that managed to contribute the most documents was the University of Macau with a total of 6 documents. This is because the location where the University of Macau is established is in the Macau region which relies heavily on its income generated from casino revenues.
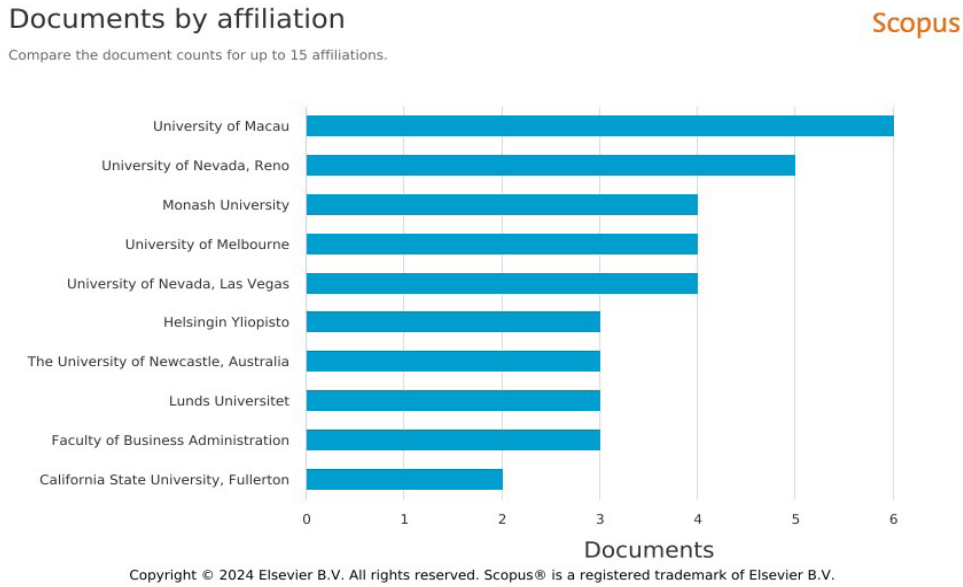
Figure 7.
Comparison of number of document publications for each institution
Source: Primary data processed from Scopus database, 2024

Research on gambling taxes over the past decade has been conducted by various countries in parts of the world as shown in Figure 8. There are 15 countries that have published three or more documents. The United States dominates the number of publications with a total of 55 documents. It is followed by Australia with the number of publications of 17 documents. Canada, China, Macau, and the United Kingdom collectively have published a total of 7 documents. Finland, Italy, New Zealand, and Sweden each have published 4 documents. Additionally, the Czech Republic, France, India, the Russian Federation, and Spain have each published a total of 3 documents.
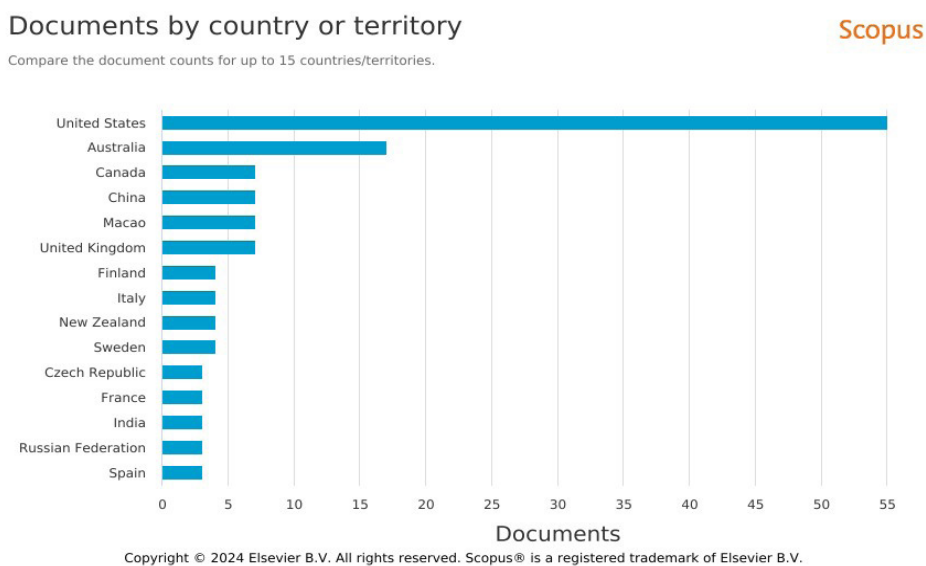
Figure 8.
Comparison of number of document publications by country
Source: Primary data processed from Scopus database, 2024

Figure 9 identifies seven types of documents relates to gambling tax that have been identified, namely articles, conference papers, reviews, notes, letters, books, and book chapters. In a list of the 132 documents, the category labeled as "article" had the highest count, with 94 documents, accounting for 71.2 percent of the total.

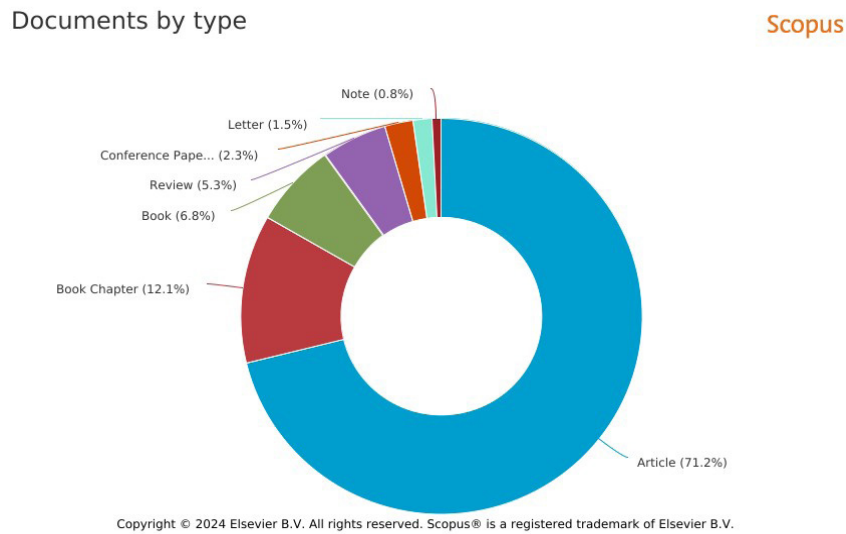Documents by type   Scopus

Figure 9.
Comparison of number of document publications of each type
Source: Primary data processed from Scopus database, 2024

On the other hand, 38 documents, which make up 28.8 percent of the total, are categorized into six different types. This indicates that the research conducted on gambling taxes in the past decade has been of high standards, with over 50% of the study being in the form of "article."

Documents by subject area   Scopus
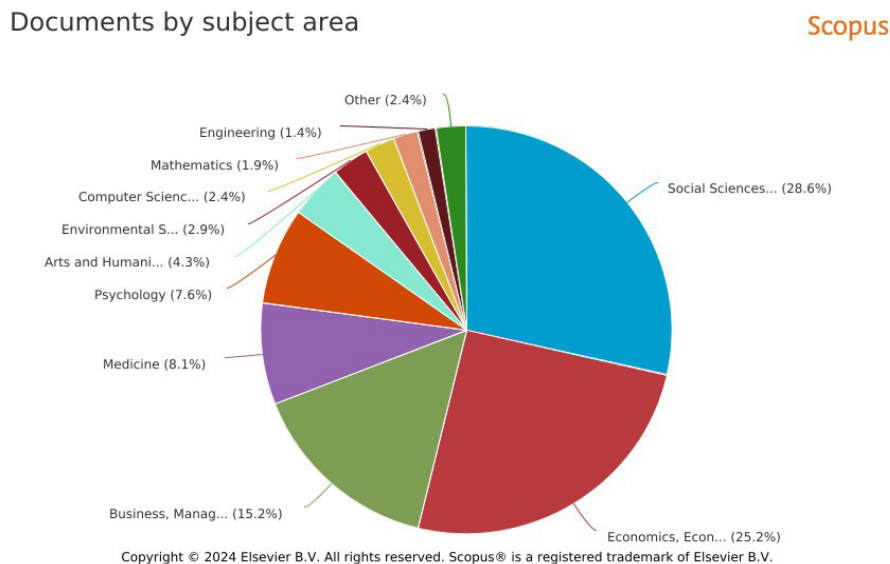
Figure 10.
Comparison of the number of document publications per subject area
Source: Primary data processed from Scopus database, 2024

Figure 10 illustrates that the study of gambling tax throughout the previous decade has been approached from many scientific perspectives or disciplines, due to its multidisciplinary nature. Social science emerges as the top-ranked subject area upon analysis, followed by economics, econometrics, and finance in the second position. Furthermore, business, management, and accounting hold the third position in the ranking. Following that, more subject areas were explored.

Most cited and recent documents

According to Kumar et al. (2020), the citation count of articles serves as one of the metrics used to assess the Impact Factor (IF). Based on Table 2, the most influential document is by Liu et al. (2021) with 56 citations, discussing the success of the gambling industry in Macau in managing the adverse effects of COVID-19 by taking a very rational approach to complying with government requirements and guidelines. The second most influential document is by Hmaittane et al. (2019), with 51 citations, discussing the relationship between corporate social responsibility and the cost of equity capital of companies operating in controversial industrial sectors, including gambling. The third most influential document is by Hofmarcher (2020), with 26 citations, discussing the social costs of problem gambling in Sweden.

Table 2.
Top ten most cited documents

No.	Author	Title	Source	Year	Cited
1	Liu MT, Wang S, McCartney G, Wong IA	Taking a break is for accomplishing a longer journey: hospitality industry in Macao under the COVID-19 pandemic	International Journal of Contemporary Hospitality Management, 33(4), pp. 1249–1275	2021	56
2	Hmaittane A, Bouslah K, M'Zali B	Does corporate social responsibility affect the cost of equity in controversial industry sectors?	Review of Accounting and Finance, 18(4), pp. 635–662	2019	51
3	Hofmarcher T, Romild U, Spångberg J, Persson U, Håkansson A	The societal costs of problem gambling in Sweden	BMC Public Health, 20(1), 1921	2020	26
4	Kypri, K, McCambridge J, Robertson N, Martino F, Daube M, Adams P, Miller P	'If someone donates $1000, they support you. If they donate $100 000, they have bought you'. Mixed methods study of tobacco, alcohol and gambling industry donations to Australian political parties	Drug and Alcohol Review, 38(3), pp. 226–233	2019	25
5	Walker DM, Sobel RS	Social and Economic Impacts of Gambling	Current Addiction Reports, 3(3), pp. 293–298	2016	18
6	Wilkins C	A "not-for-profit" regulatory model for legal recreational cannabis: Insights from the regulation of gaming machine gambling in New Zealand	International Journal of Drug Policy, 53, pp. 115–122	2018	17
7	Alharbi S, Atawnah N, Al Mamun M, Ali MJ	Local culture and tax avoidance: Evidence from gambling preference behavior	Global Finance Journal, 52, 100585	2022	15
8	Zaleskiewicz, T, Traczyk J	Psychological Perspectives on Financial Decision Making	Psychological Perspectives on Financial Decision Making, pp. 1–356	2020	13
9	Rude J, Surry Y, Kron R	A generalized double-hurdle model of Swedish gambling expenditures	Applied Economics, 46(34), pp. 4151–4163	2014	13
10	Albanese JS	Illegal gambling businesses & organized crime: an analysis of federal convictions	Trends in Organized Crime, 21(3), pp. 262–277	2018	11

Source: Primary data processed from Scopus database, 2024

Table 3 lists the ten most recent documents. The most recent published document by Miéra et al. (2023,) which discusses the social surplus in France, finding positive impacts on gambling types like lottery images and scratch cards, but negative on poker and sports betting. The second most recent published document is by Yang et al. (2023), discussing that lower risk appetite among company leaders is one of the main factors driving lower tax avoidance. The third most recent document is by Ferguson (2023), which focuses on taxpayers who avoid third-party reporting to reduce reporting income to the IRS in the United States of America.

Table 3.
Ten recent published documents

No.	Author	Title	Source	Source	Cited
1	Miéra M, Massin S, Eroukmanoff V	The social value of gambling: surplus estimates by gambling types for France	European Journal of Health Economics, 24(9), pp. 1531–1543	2023	0
2	Yang S, Feng, D, Xu J	Do chairmen with China's Great Famine experience in early-life affect firm tax avoidance activities?	Review of Development Economics, 27(4), pp. 2214–2247	2023	0
3	Ferguson D	Gaming the IRS' Third-Party Reporting System: Evidence from Pari-Mutuel Wagering	Journal of Accounting Research, 61(4), pp. 1225–1261	2023	0
4	Zeng H, Li X, Zhou Z, Ma Y, Lv F	Local gambling culture and corporate tax aggressiveness: A trait activation perspective on informal institutions	Managerial and Decision Economics, 44(6), pp. 3166–3184	2023	0
5	Whelan K	US Taxation of Gambling Winnings and Incentives to Bet	Journal of Gambling Studies, 39(3), pp. 1253–1271	2023	0
6	Lei G, Qiu B, Yu J, Zuo J	"Hitting the jackpot" in corporate tax strategy: A perspective on gambling preferences	Economic Modelling, 125, 106333	2023	0
7	Molina-Fernández AJ, Robert-Segarra A, Martín-Herrero JA, Sánchez-Iglesias I, Saiz-Galdós J, Fernández-Mora K	Regulating Gambling Use through the Overton Window: From an Addictive Behavior to a Social and Epidemiological Problem	International Journal of Environmental Research and Public Health, 20(8), 5481	2023	0
8	Clotfelter CT	Better State Lotteries	Public Finance Review	2023	0
9	Tarray TA & Ganie ZA	An Adroit Unrelated Question Randomized Response Model with Sundry Strategies	Journal of Applied Mathematics and Informatics, 41(6), pp. 1377–1391	2023	0
10	Petrotta BA	From Prohibition to Promotion: Framing and Sourcing the Legalization of Sports Betting in the U.S.	Communication and Sport	2023	0

Source: Primary data processed from Scopus database, 2024

Newly published documents typically do not have many citations or even none at all. However, there are three documents that already have one citation. The first is by Egerer & Marionneau (2023), discussing the implementation, effectiveness, risks, and alternatives of blocking action against offshore online gambling. The second is by Marriott & Lai (2023), exploring how antisocial factors, such as gambling, are more likely to be referred to by benefit fraudsters as techniques of neutralization in justifying their crimes in the Aotearoa New Zealand justice system. The third, a document by Björklund (2023) discussing the Georgian tax lottery as a failed system that only reinforces citizens' uneasy relationship with their government authorities.

Important theme analysis, proximity plot, and WordCloud

Table 4 presents a summary of key themes identified, along with the keywords associated with each theme. The higher the eigenvalue of a theme, the more significant the theme. The most important theme of the analysis results was "public health humans" with an eigenvalue of 4.23. This was followed by the theme "insurance companies takaful," which has an eigenvalue of 4.11. Then, the theme of controversial industry sectors has an eigenvalue of 3.78.

Table 4.
WordStat essential themes based on keywords

Theme	Keywords	Eigenvalue	Coherence (NPMI)	Frequency
Public health Humans	Health, humans, smoking, human, addictive, alcohol, consumption, behaviors, gender, mental, gap, public, behavior, control, economics, article, tobacco, social, addiction, gambling, taxes, alcohol consumption, sin taxes, gender gap, public health, mental health, health promotion, risky addictive behaviors, public policy, sin tax, excise taxes, societal costs, health care.	4,23	0,468	329
Insurance companies takaful	Insurance, takaful, companies, traditional, conventional, differences, work, company, study, related, insurance companies, conventional insurance, traditional insurance companies, takaful companies, takaful insurance.	4,11	0,486	145
Controversial industry sectors	Controversial, sectors, csr, firm, capital, cost, industry, alcohol, tobacco, corporate, effect, avoidance, industries, firms, activities, preferences, responsibility, political, controversial industry sectors, sin firms, design methodology approach, tax avoidance, corporate tax avoidance.	3,78	0,507	157

|				
Ethical issues	Ethical, issues, american, regulations, including, book, crime, related, benefits, communities, laws, life, funding, social, activities, professional, decisions, land, control, regulatory, community, issue, laundering, transactions, money, legal, positive, impacts, industry, ethical issues, money laundering, video game, organized crime, illegal gambling businesses.	3,64	0,478	178
Gaming machines electronic	Electronic, machines, machine, gaming, slot, distribution, humans, egms, gambling, human, community, index, expenditure, article, economics, control, profit, problem, economic, cost, proposed, egm, analysis, horse racing, gambling machines, slot machines, gambling taxation, responsible gambling, socio economic, gaming machines, herfindahl hirschman index, casino taxation, consumer surplus, electronic gaming machines, gambling market, related harm, casino tourism, spatial spillover, short run, local government, covid pandemic, gambling expenditures, tourism development, gambling activity, gambling revenue, economic growth, time series, online gambling, online casino, tax system.	3,26	0,267	380

Source: Primary data processed, 2024
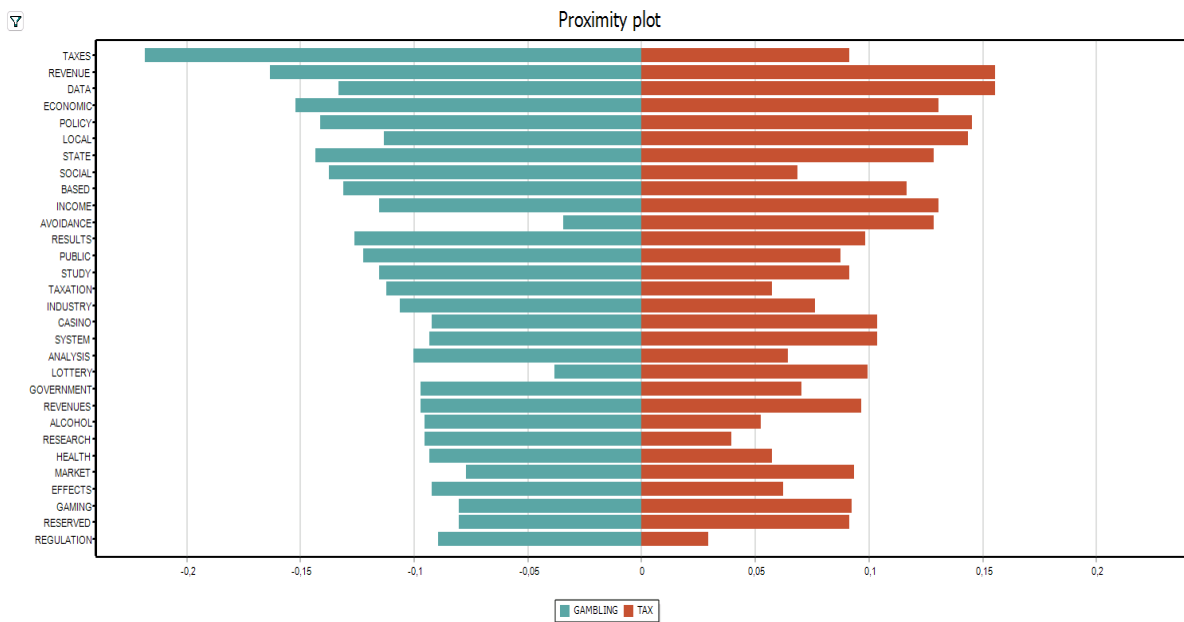
Figure 11.
WordStat Proximity Plot results based on keywords
Source: Primary data processed, 2024

Proximity Plot serves to identify all keywords that occur along with one or more target keywords. Based on Figure 11, the first target keyword, "gambling," often appears alongside the keyword "taxes" 65 times with an association value of 0.218. "Taxes" often appear together because the keyword is the plural of "tax" which is one of the target keywords.

The second target keyword, "tax", appears more often along with two keywords, namely "revenue" and "data" 38 and 35 times with the same association value of 0.155. "Revenue" often appears together because taxes are a form of revenue for the state. Furthermore, the keyword "data" is frequently utilized in research on gambling taxes due to its significance as a primary study material.

Figure 12.
WordStat Word Cloud results by phrase
Source: Primary data processed, 2024

According to Figure 12, the analysis of 132 documents using the WordCloud tool in WordStat reveals that the phrase "tax avoidance" has the highest magnitude. There is a positive correlation between the size of a term and its frequency of appearance and discussion in research on gambling taxes over the past decade. It can be inferred that when it comes to inspecting gambling taxes, tax avoidance is frequently observed. One of the largest multinational gambling companies has even been the subject of several studies because it was indicated to be involved in tax avoidance (Lowenstein & Joseph 2017, Sharife 2017). As a bibliometric study, this research offers novelty through a thorough analysis of numerous publications from the last decade and tracks the progress of scientific research on gambling taxes as documented in the Scopus database utilizing VOSviewer and WordStat.

Conclusion

This bibliometric review offers a thorough and critical summary of research related to gambling taxation. Gu stands out as the most prolific author in this field, while gambling tax publications are predominantly of the "article" type. Furthermore, as a multidisciplinary study, gambling tax has been examined from various perspectives, such as social sciences; economics, econometrics, and finance; and business, management, and accounting. This study contributes to understanding the evolution of gambling tax publications and highlights areas for future research, such as on a progressive gambling tax system that ensures individuals, especially those from economically weaker countries, experience its social justice

impact, as well as through case studies in regions that have a high preference for gambling but are prohibited by the government, with additional analysis of the impact of the COVID-19 pandemic that is suspected of driving gambling behavior, so it is important to collect more research data. Nevertheless, it is important to note that this study has many limitations. Firstly, it focuses exclusively on the time frame between 2014 and 2023. Additionally, the data used for analysis is derived solely from a single global index, namely Scopus.

To gain a more comprehensive understanding of gambling taxes, several considerations for future research are recommended: (1) Researchers should consider conducting bibliometric analyses that go beyond simply checking publication year and Scopus index. This would allow for a more in-depth analysis of the earliest publications, current studies, and future research plans on the subject. (2) Further research could potentially be conducted about a progressive gambling tax system to ensure that individuals, especially those from weak economies, can feel the impact of the tax so that it fulfills the values of social justice. (3) Further investigation could potentially be conducted through case studies in locations where there is a notable preferences towards gambling, but the government has banned it. (4) The COVID-19 epidemic could potentially encourage gambling behavior, making it imperative to gather more data for research purposes.

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