

The 7th International Conference on Economics and Social Sciences
**Exploring Global Perspectives:
The Future of Economics and Social Sciences**
June 13-14, 2024
Bucharest University of Economic Studies, Romania

**Two-Decade Bibliometric Analysis of Collaborative Trends
in Gambling Studies: A Structured Literature Review
and Analysis of Gambling Research (2004-2023)**

Daniel-Marius IORDACHE^{1*}, Florin MIHAI², Ofelia ALECA³

DOI: 10.24818/ICESS/2024/015

Abstract

This research analyses the field of gambling studies from the perspective of digital technologies over the past two decades (2004-2023). In the study, we use both qualitative and quantitative methods in order to identify the risks associated with gambling and the impact of digital technologies on them. We analysed 929 articles indexed on the Web of Science by Clarivate Analytics which contained the word “gambling” and were published exclusively in English. The analysis focuses on the themes which influence gambling studies, identifying the most popular topics utilised in studies: risk and technology. We have used qualitative analysis to identify and group the analysed subjects from each theme. Two main directions have been identified in the study: technological innovation and data analysis for business decision improvement. The bibliometric analysis and also the identified main themes from gambling studies ranging from 2004 to 2023 represents the originality of the study. The contribution this study brings is given by the main identified trend: gambling studies are steadily growing on a yearly basis.

Keywords: Gambling Research, Digital Technologies, Risk, Structured Literature Review.

JEL codes: L83, G41.

1. Introduction

In recent years, technological progress determined a rapid digitalisation of many fields of activity. Gambling has been impacted nonetheless, which determined us to engage in this study. As a goal of our study, we wanted to materialise the main

¹ Bucharest University of Economic Studies, Bucharest, Romania, iordachedaniel23@stud.ase.ro.

* Corresponding author.

² Bucharest University of Economic Studies, Bucharest, Romania, florin.mihai@cig.ase.ro.

³ Bucharest University of Economic Studies, Bucharest, Romania, ofelia.aleca@cig.ase.ro.

themes which influenced gambling studies which also refer to digital technologies. In order to do this, we have analysed 929 articles indexed in Web of Science by Clarivate Analytics, which have been published from 2004 to 2023. As gambling expanded online, becoming more and more accessible, more and more scientist started to be interested in the impact on the actual players, and the risks they pose to these players (Lawn et al., 2020).

The research questions we seek to answer are as follows:

RQ1. Which gambling related articles have been the most cited?

RQ2. What are the main themes which influenced gambling-related articles?

This being said, our bibliometric analysis sheds light on the direction of gambling studies. The qualitative analysis part provides an overview of the research direction.

2. Research Methodology

In this study, we combined both qualitative and quantitative analyses of the existing literature, also incorporating a standard literature review (SLR). Data was extracted from Web of Science and consists of articles written in English which contained the keyword “gambling” in the abstract.

A total of 929 articles were analysed and grouped in two categories: the ones referring to risks associated with players and the ones referring to digital technologies which facilitated access to online gambling.

To identify articles that refer to risks associated to players, we selected all articles that contain the word “risk” in their abstract.

To identify articles referring to digital technologies, we filtered those papers that contain words like “online”, “internet”, “digital”, “technology”, “web”, “virtual”, “cyber”, “online platform”, “online gamble”, “internet gamble”, “online betting” and “internet betting” in their abstract.

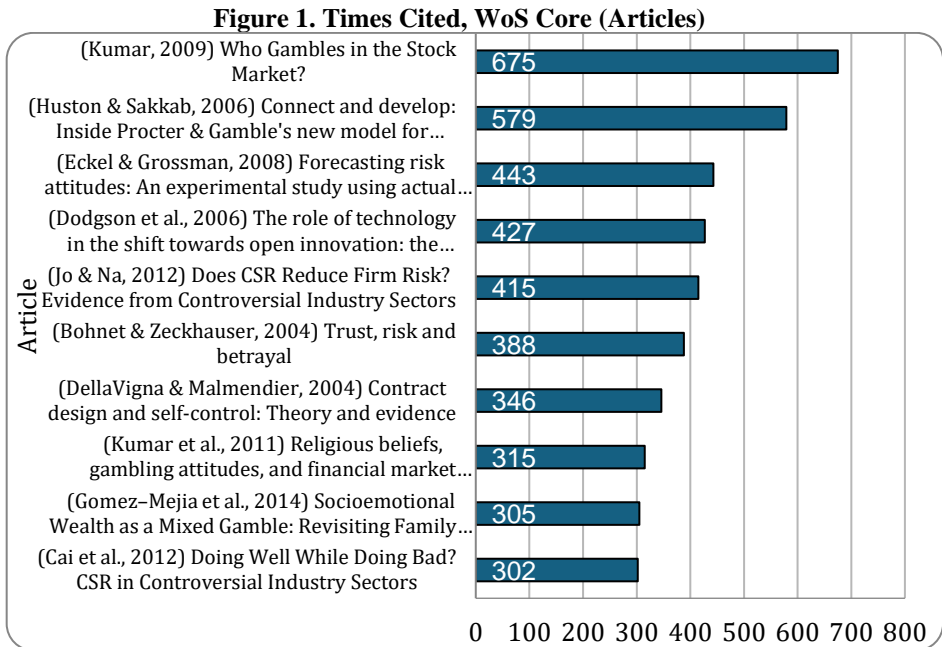
3. Top Cited Articles in Gambling Research

The initial analysis of the data shows that an increasing number of researchers are interested in studying gambling. In recent papers, the topics which were of the most influential were the ones pointing out the negative or harmful aspects of gambling, including it on the list of sinful industries along with industries such as tobacco, alcohol, and even weapons (Grougiou et al., 2016).

Figure 1 presents the top 10 most cited articles in the field of gambling studies. The most cited article in the field of gambling is an article published by Kumar (2009) work titled “Who Gambles in the Stock Market?”. Due to their high citation count, these articles play an important role in influencing future research and developments related to gambling.

The top 10 most cited articles have been collectively cited 4,195 times over the course of the 20 years analysed. This represents 18.1% of the total citations in the entire analysed dataset, despite comprising only 1.1% of the total articles (10 out of 929). In total, all 929 analysed articles have been cited 23,180 times.

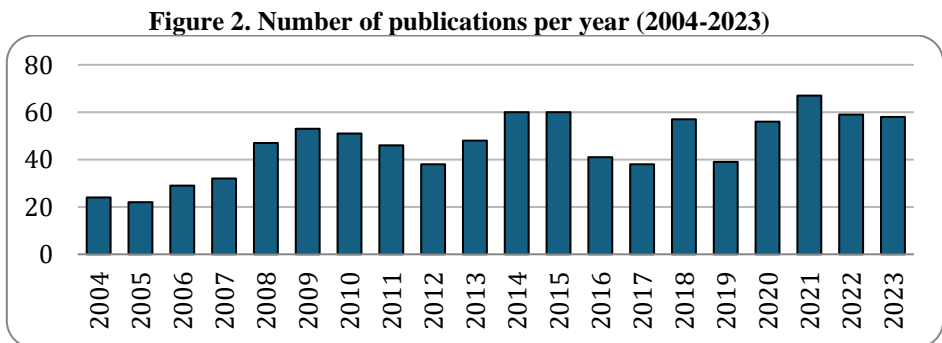
This high number illustrates the bibliographic foundations upon which gambling research has been built over the past 20 years, revealing the important articles that have influenced this field and the primary interests of researchers.



Source: authors' processing using Microsoft Excel application (Microsoft Excel, 2024).

4. Trends in Publication Over Time

The line graph in Figure 2 illustrates the trends in the gambling research publications from 2004 to 2023.



Source: authors' processing using Microsoft Excel application (Microsoft Excel, 2024).

As it can be observed, the number of publications over these years fluctuated noticeably. At the beginning of the analysed period, the number of articles was 24 in

the year 2004 and 22 in 2005. This was also the year with the fewest publications within the interval.

The years with the most publications were 2021 with a record number of 67 publications, 2014 and 2015 with 60 each.

4.1 Main Themes Addressed

The most common themes in these articles are:

- a) The risks associated with gambling, focused on the negative effect that they have on societies and individuals
- b) The internet, digital platforms, and new technologies which created a new landscape for gambling in terms of accessibility and interactions

a. Risks Associated with Gambling

Some articles focus on the effectiveness of implemented regulations for controlling gambling and methods to prevent addiction. A total of 337 articles contain the word “risk”.

Analysing the themes addressed within the top 10 most cited papers that include the term “risk” in their abstracts identified how attitudes toward risk are influenced by gender, education, and social or economic context, as observed in studies by Eckel and Grossman (2008) and Bohnet and Zeckhauser (2004). Gender differences in risk attitudes and stereotypes, as well as the reliability of predictions about risk preferences, are highlighted by Jo & Na (2012). Another identified theme is the interaction between trust and risk in decision making (Bohnet & Zeckhauser, 2004). The comparison between firms in controversial and noncontroversial industries is illustrated by Ross (2004), and modelling uncertainty and its connections to decision theories are analysed in the work of Eckel et al. (2009). The work of Chetty and Szeidl (2007) addresses the impact of consumption commitments on risk preferences. These represent some of the most impactful themes addressed by the top 10 most cited articles, as shown in Table 1.

Table 1. The Top 10 Most Cited Articles in the Gambling Field Referring to “Risk”

No.	Reference	Main Themes	Times Cited, WoS Core
1	Eckel and Grossman (2008)	Measurement of Risk Attitudes through Gamble-Choice Task Gender Differences in Risk Attitudes Exploration of Stereotyping in Risk Preferences Accuracy of Risk Preference Predictions	443

No.	Reference	Main Themes	Times Cited, WoS Core
2	Jo and Na (2012)	CSR Impact on Firm Risk in Controversial Sectors Risk reduction versus window dressing hypotheses Methodological Approach to Address Endogeneity Comparative Analysis Between Controversial and Non-Controversial Firms	415
3	Bohnet and Zeckhauser (2004)	Trust vs. Risk in Decision Making Comparative Analysis of Trust and Risk Games Measurement of Risk Acceptance through MAPs Higher Risk Premium for Trust Decisions	388
4	Ross (2004)	Myth of incentives and risk willingness Conditions Influencing Risk Aversion Through Incentives Analysis of Common Incentive Structures Duality of Fee Schedules and Risk Modification	280
5	Chetty and Szeidl (2007)	Impact of Consumption Commitments on Risk Preferences Resolution of Expected Utility Theory Puzzles Applications to Policy Design and Economic Behaviour Empirical Evidence Supporting the Model	183
6	Booth and Nolen (2012)	Influence of Gender Composition on Risk Preferences Impact of the Educational Environment on Risk-Taking Behaviour Risk Behaviour among Girls in Different Educational Settings Social Learning vs. Inherent Gender Traits in Risk Behaviour	182
7	Eckel et al. (2009)	Temporal Evolution of Risk Preferences Post-Disaster Comparison with the Resident Population Gender Differences in Risk Preferences Emotional states as Predictors of Risk Choices	167
8	Jin and Yu Zhou (2008)	Behavioural Portfolio Selection in Prospect Theory Challenges of Model Formulation Novel Solution Approach for Well-Posed Models Optimal Wealth Positions and Policy Implications	158
9	Aumann and Serrano (2008)	Novel Definition of Gamble Riskiness Axiomatic Characterisation of the Risk Index Properties of the Riskiness Index	147

No.	Reference	Main Themes	Times Cited, WoS Core
10	Grougiou et al. (2016)	CSR Reporting Strategies in Stigmatised Industries Increased CSR Reporting Among Sin Firms Litigation Risk Influencing CSR Reporting Strategic Goals Behind CSR Disclosures	141

Source: authors' processing using Microsoft Excel application (Microsoft Excel, 2024).

b. Internet, Online Platforms, and Technologies

Technology advancements have transformed the landscape of gambling activities. Having access to internet and online platforms, a high number of people have engaged in online gambling activities.

We have trimmed out a database of 929 articles using the keywords “online”, “internet”, “digital”, “technology”, “web”, “virtual”, and “cyber”.

Within these highly cited works addressing digital technologies, we identify the utilisation of other keywords such as technological innovation and open collaboration in innovation, as discussed by Dodgson et al. (2006), and data collection technologies, talent analysis, and their impact on organisational performance described by Davenport et al. (2010). The work of Cotte and Latour (2009) examines the challenges and opportunities of online gambling, highlighting how digital technologies affect user access and experience. Coussement and De Bock (2013) focuses on customer retention through improving on-line experiences to enhance loyalty to platforms. In their work, Brick and Visser (2015) explore technology diffusion and the adoption of innovations in the gambling sector. The need for effective talent acquisition strategies are emphasised in Ready and Conger (2007), which is identified as crucial for innovation and business growth. The motivation to attract players toward online gambling and addressing challenges related to legislation, online security, and social ethics is brought to light by Yanide-Soriano et al. (2012). Jolley et al. (2006) highlight how operators can meet customer expectations by enhancing service offerings.

All are below, as part of Table 2.

Table 2. The top 10 articles most cited in the field of gambling that reference technology

No	Reference	Main Themes	Times Cited, WoS Core
1	Dodgson et al. (2006)	Innovation Technology Open Innovation	427
2	Davenport et al. (2010)	Data-Collection Technology Talent Analytics Business Performance	146

No	Reference	Main Themes	Times Cited, WoS Core
3	Humphreys and Latour (2013)	Media Frames Consumer judgments Online gambling	110
4	Viney et al. (2014)	Discrete Choice Experiments (DCEs) Quality-of-life health states Utility function EQ-5D Health States	98
5	Cotte and Latour (2009)	Online gambling Consumption experience Social welfare implications	98
6	Coussement and De Bock (2013)	Churn Prediction Customer Relationship Management Generalised Additive Models	88
7	Brick and Visser (2015)	Technology diffusion Risk-induced poverty trap Framed index insurance	85
8	Ready and Conger (2007)	Talent management systems Strategic Management Roles High-potential employees	84
9	Yani-de-Soriano et al. (2012)	Online gambling Corporate Social Responsibility (CSR) Health Issue	65
10	Jolley et al. (2006)	Customer satisfaction Online gambling experiment Past behaviour (habit) Actual behaviour (retention)	59

Source: authors' processing using Microsoft Excel application (Microsoft Excel, 2024).

5. Conclusions

The analysis of the most cited articles that reference digital technologies highlights the significant contributions of previous research to studying the impact of digital and innovative technologies on the gambling industry. In our study, we also identified which articles are the most cited and most influential in the field.

Looking at the themes addressed, we can notice that they are diverse, ranging from challenges and opportunities in online gambling, customer retention strategies, innovation adoption, talent acquisition, the influence of digital and social media, to aspects related to problematic gambling.

Combining the analysis of the top 10 most cited articles referencing digital technologies and the top 10 referencing risks, we can conclude that the internet plays a significant role in gambling behaviour and that there is a growing concern over the importance of identifying problematic behavioural interventions related to gambling. Other themes also relate to gambling income and excessive spending, highlighting the necessity of monitoring the social risks associated with gambling.

As a general conclusion, researchers tend to show more interest in gambling studies and the social impact of gambling in general.

Acknowledgment

This paper was co-financed by the Bucharest University of Economic Studies during the Ph.D. programme.

Bibliography

- [1] Aumann, R.J., Serrano, R. (2008). An Economic Index of Riskiness. *Journal of Political Economy*, 116(5), 810-836. <https://doi.org/10.1086/591947>.
- [2] Bohnet, I., Zeckhauser, R. (2004). Trust, risk and betrayal. *Journal of Economic Behavior & Organization*, 55(4), 467-484. <https://doi.org/10.1016/j.jebo.2003.11.004>.
- [3] Booth, A.L., Nolen, P. (2012). Gender Differences in Risk Behaviour: Does Nurture Matter? *The Economic Journal*, 122(558), F56-F78. <https://doi.org/10.1111/j.1468-0297.2011.02480.x>.
- [4] Brick, K., Visser, M. (2015). Risk preferences, technology adoption and insurance uptake: A framed experiment. *Journal of Economic Behavior & Organization*, 118, 383-396. <https://doi.org/10.1016/j.jebo.2015.02.010>.
- [5] Chetty, R., Szeidl, A. (2007). Consumption Commitments and Risk Preferences. *The Quarterly Journal of Economics*, 122(2), 831-877. <https://doi.org/10.1162/qjec.122.2.831>.
- [6] Cotte, J., Latour, K.A. (2009). Blackjack in the Kitchen: Understanding Online versus Casino Gambling. *Journal of Consumer Research*, 35(5), 742-758. <https://doi.org/10.1086/592945>.
- [7] Coussement, K., De Bock, K.W. (2013). Customer churn prediction in the online gambling industry: The beneficial effect of ensemble learning. *Journal of Business Research*, 66(9), 1629-1636. <https://doi.org/10.1016/j.jbusres.2012.12.008>.
- [8] Davenport, T.H., Harris, J., Shapiro, J. (2010). Competing on Talent Analytics. *Harvard Business Review*. <https://hbr.org/2010/10/competing-on-talent-analytics>.
- [9] Dodgson, M., Gann, D., Salter, A. (2006). The role of technology in the shift towards open innovation: The case of Procter & Gamble. *R&D Management*, 36(3), 333-346. <https://doi.org/10.1111/j.1467-9310.2006.00429.x>.

- [10] Eckel, C.C., El-Gamal, M.A., Wilson, R.K. (2009). Risk loving after the storm: A Bayesian-Network study of Hurricane Katrina evacuees. *Journal of Economic Behavior & Organization*, 69(2), 110-124. <https://doi.org/10.1016/j.jebo.2007.08.012>.
- [11] Eckel, C.C., Grossman, P.J. (2008). Forecasting risk attitudes: An experimental study using actual and forecast gamble choices. *Journal of Economic Behavior & Organization*, 68(1), 1-17. <https://doi.org/10.1016/j.jebo.2008.04.006>.
- [12] Grougiou, V., Dedoulis, E., Leventis, S. (2016). Corporate Social Responsibility Reporting and Organizational Stigma: The Case of “Sin” Industries. *Journal of Business Research*, 69(2), 905-914. <https://doi.org/10.1016/j.jbusres.2015.06.041>.
- [13] Humphreys, A., Latour, K.A. (2013). Framing the Game: Assessing the Impact of Cultural Representations on Consumer Perceptions of Legitimacy. *Journal of Consumer Research*, 40(4), 773-795. <https://doi.org/10.1086/672358>.
- [14] Jin, H., Yu Zhou, X. (2008). Behavioral Portfolio Selection in Continuous Time. *Mathematical Finance*, 18(3), 385-426. <https://doi.org/10.1111/j.1467-9965.2008.00339.x>.
- [15] Jo, H., Na, H. (2012). Does CSR Reduce Firm Risk? Evidence from Controversial Industry Sectors. *Journal of Business Ethics*, 110(4), 441-456. <https://doi.org/10.1007/s10551-012-1492-2>.
- [16] Jolley, B., Mizerski, R., Oлару, D. (2006). How habit and satisfaction affects player retention for online gambling. *Journal of Business Research*, 59(6), 770-777. <https://doi.org/10.1016/j.jbusres.2006.01.017>.
- [17] Kumar, A. (2009). Who Gambles in the Stock Market? *The Journal of Finance*, 64(4), 1889-1933. <https://doi.org/10.1111/j.1540-6261.2009.01483.x>.
- [18] Lawn, S., Oster, C., Riley, B., Smith, D., Baigent, M., Rahamathulla, M. (2020). A Literature Review and Gap Analysis of Emerging Technologies and New Trends in Gambling. *International Journal of Environmental Research and Public Health*, 17(3), Article 3. <https://doi.org/10.3390/ijerph17030744>.
- [19] Ready, D.A., Conger, J.A. (2007). Make Your Company a Talent Factory. *Harvard Business Review*. <https://hbr.org/2007/06/make-your-company-a-talent-factory>.
- [20] Ross, S.A. (2004). Compensation, Incentives, and the Duality of Risk Aversion and Riskiness. *The Journal of Finance*, 59(1), 207-225. <https://doi.org/10.1111/j.1540-6261.2004.00631.x>.
- [21] Viney, R., Norman, R., Brazier, J., Cronin, P., King, M. T., Ratcliffe, J., Street, D. (2014). An Australian Discrete Choice Experiment to Value Eq-5d Health States. *Health Economics*, 23(6), 729-742. <https://doi.org/10.1002/hec.2953>.
- [22] Yani-de-Soriano, M., Javed, U., Yousafzai, S. (2012). Can an Industry Be Socially Responsible If Its Products Harm Consumers? The Case of Online Gambling. *Journal of Business Ethics*, 110(4), 481-497. <https://doi.org/10.1007/s10551-012-1495-z>.