



# How Do State Gambling Monopolies Affect Levels of Gambling Harm?

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## Abstract

**Purpose of Review** This systematic literature review evaluates the potential of gambling monopolies to affect gambling harms. It compares the occurrence of gambling harms in jurisdictions with gambling monopolies to jurisdictions with license-based regimes.

**Recent Findings** The review identified 21 publications concerning three gambling-related harm indicators: problem gambling prevalence, total consumption, and the appearance of conflicts of interest. Due to the dearth of literature, concept papers and older publications were also included.

**Summary** Results show that there is a paucity of empirical research on the effectiveness of different regulatory regimes in affecting gambling harms. Available research demonstrates that monopolistic regimes appear to perform somewhat better in terms of problem gambling prevalence and total consumption but may also be more prone to conflicts of interest than license-based regimes. Monopolistic configurations also differ between themselves, and issues such as availability, accessibility, product range, scope of preventive work, monitoring, as well as the recognition of the public health approach may better predict the levels of harm in society than the existence of a monopoly.

**Keywords** Gambling · Monopoly · Licensing · Problem gambling · Total consumption · Conflict of interest · Review

## Introduction

The organisation of legalised gambling can take place through different regimes, including prohibitions, monopolies, and various forms of licensing. The most common forms of regulation are public monopolies and licensing to the private sector, but even these basic regulatory models can differ depending on other policy choices such as product ranges, availability, ‘responsible gambling’ policies, or ownership structures. The choice of regime ranges between jurisdictions and between different forms of gambling. Approximately 20% of the regimes globally are still public monopolies [1••]. Public monopolies are particularly prevalent in lottery gambling across jurisdictions, including the United States, but in many European as well as Canadian and Australian jurisdictions,

also casino gambling may be subject to a local, often privately operated, monopoly. The monopoly model also appears to be gradually disappearing. Particularly in Europe, where gambling monopolies were still the prevalent form of gambling provision some 20 years ago [2], these have been replaced by licensing models under which former monopolies have become one of many licensed operators in many market segments. Currently only Finland and Norway operate fully monopolistic gambling regimes in Europe.

The choice of regime is partly constrained by the legal status of gambling. This issue is particularly pressing in the European Union (EU), where institutional constraints have impacted national legislations on gambling via legislative means. These include, inter alia, infringement proceedings initiated by the European Commission, and court cases brought to the Court of Justice of the European Union (CJEU). The rulings of the CJEU, in particular, have gained considerable importance in the choice of regulatory regimes in the EU. In practice, the provision of gambling from other EU countries can be restricted by means of a monopoly if this restriction is justified in acceptable terms, including prevention of gambling harms and promotion of public order [3, 4•].

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Furthermore, the CJEU has ruled that Member States need to show a ‘causal link’ between restrictions in their gambling legislation and their justifications [3]. Although the burden of proof is minimal, this does put pressure on Member States to show some connection between their gambling regime and its potential to reduce harms [3].

Monopolies have become increasingly burdensome to maintain particularly since the rise in popularity of online gambling. Channelling consumption to the monopoly holder is costly and may require heavy control measures such as IP blocking [5, 6••, 7]. Monopolies are also increasingly difficult to justify both legally and to consumers [6••]. European countries that have maintained their monopolies are increasingly focusing their gambling legislation on the prevention of gambling-related harms and the ‘particular capability of monopoly-based systems to tackle these problems’ [8]. In official justifications, monopolies are claimed to better achieve the task of both harm reduction and harm prevention. For example, in Finland, the Lotteries Act has shifted focus from revenue collection towards consumer protection and harm prevention to better justify the monopoly system after an official note from the European Commission in 2006 challenging its premises [9].

Despite these official justifications, previous research literature has not been conclusive on whether monopolies are actually better capable of preventing or reducing gambling-related harms than other systems (e.g. [10, 11] show some support for this statement; [12–14] do not). It has been suggested that licensed regimes may be more effective in preventing harms despite increased availability, as licensing allows regulating otherwise unregulated offshore provision and a wider implementation of the so-called ‘responsible gambling’ tools [15].

In the current study, we conduct a systematic review of existing research evidence on whether gambling monopolies address harm levels better than licensing systems. Resulting from the limited space here, the focus of the paper is to compare the two most prevalent regimes, mostly government-operated monopolies and private licensed markets, although other regulatory options would also be available.

The definition of harms in the study is wide, acknowledging that gambling causes a range of harms not only to individuals but also to families, communities, and societies [1, 16–18]. Two previous review studies have addressed the issue [19, 20] and one non-systematic summary of evidence [1••]. Planzer and Wardle [19] conducted a review of previous literature using the rapid evidence assessment method and concluded that there was no empirical evidence available that would directly address the effectiveness of regulatory regimes in gambling. The reviews by Williams et al. [20] and Sulkunen et al. [1••] both concluded that a less restricted approach is more likely to lead to gambling expansion, whereas government-run gambling monopolies tend to offer more

prevention and treatment initiatives. At the same time, governments may be more prone to conflicts of interest (COI), as they run simultaneous roles as providers, regulators, and beneficiaries of gambling [1, 21, 22].

As the existing reviews are already somewhat dated or non-systematic, there is a need for an update. In the following, we will first describe the methods and data, including the systematic search for evidence and inclusion criteria. The systematic search yielded results on three categories of harm indicators that we developed for the purpose of this review: the prevalence of problem gambling, total consumption (TC), and appearance of conflicts of interest. In the final section, we will discuss the results and identify the main gaps in extant research.

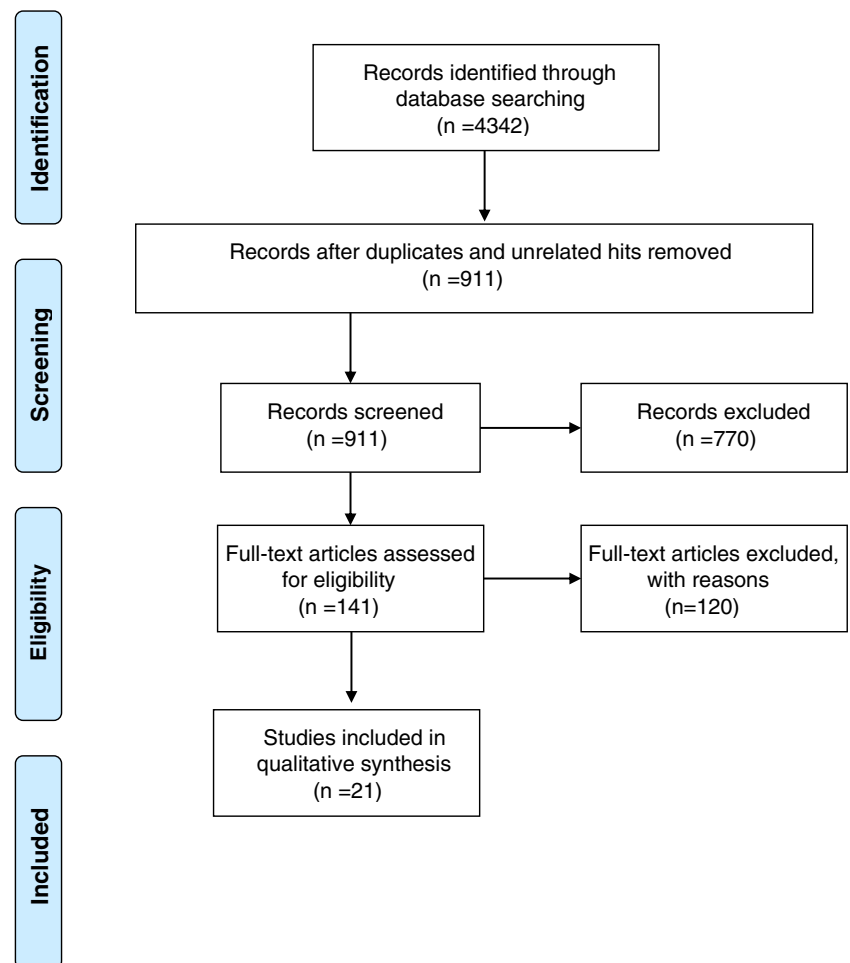
## Methods and Data

We conducted a systematic review into the potential of gambling monopolies to affect harms. Following the PICO mnemonic [23], the intervention that we reviewed was therefore to compare monopoly provision to a licensing system to determine whether a monopoly system performs better. The choice to compare monopolies to licensing is motivated by the fact that this is the most plausible alternative to monopolies, particularly in online environments [1••]. Studies that include such a comparative setting fell into three categories: (a) those comparing jurisdictions with a monopoly to jurisdictions with licensing, (b) those comparing operators within a monopolistic and license-based market segments in one jurisdiction, and (c) longitudinal studies that examine the change of regime within one jurisdiction. In order not to focus on predetermined harms, we conducted a generic literature search on monopolies and licensing systems. The utilised search terms were ‘gambling & monopoly’, ‘gambling & license/concession’, and ‘gambling & regulation’. In addition, we alternated the term ‘gambling’ with different alternative forms: ‘lottery’, ‘casino’, and ‘betting’ (i.e. ‘lottery & monopoly’ and ‘lottery & license/concession’). In total, 16 search term pairs were used in the following databases, using default search settings in the first half of the year 2020:

- EBSCOhost
- PubMed
- ProQuest
- Scopus
- Web of Knowledge
- Google Scholar

If a search yielded more than 100 hits, only the first 100, sorted by relevance, were considered for each search pair. The included databases also included grey literature such as newspaper articles and reports. Figure 1 presents the PRISMA chart

Fig. 1 Prisma flow chart



of the search [24]. The 4342 identified records were first cleaned from unrelated hits and duplicates, yielding a total of 911 records. These articles were screened for their relevance based on their abstracts, resulting in the exclusion of further 770 papers. The inclusion criteria at this stage of abstract reading were that the paper (1) appeared to concern the regulation of gambling via a monopoly or license system; (2) reported results on some outcome measures related to some outcome measure related to individual, community, or society level harms; (3) was available in a language that the authors could read (English, German, French). At this stage, we also decided to exclude papers regarding the levels of crime in different regulatory systems.

The remaining samples of 141 articles were carefully read. The final inclusion criteria were that the paper (1) compared monopolistic and licensed systems in terms of their potential to prevent harm and (2) gave either an empirical or an argumentative result regarding how well monopolies affect harms. Initially, we only planned to include papers that presented empirical evidence to this effect, but as their number was very limited, we followed the example of Planzer and Wardle's previous review study [19] and also included concept papers.

The final sample consisted of 21 papers, described in Table 1. Of these, 19 were in English, one was in German, and one was in French. Fifteen papers dealt with European jurisdictions at least partly. This was presumably due to the pressing nature of the monopoly topic in the European Union following the contradictory status of monopolies in light of the principle of the free movement of goods and services in the internal market. The remainder of the sample focused on the United States, Canada, Australia, and/or New Zealand.

The types of harm indicators addressed in these papers fell into three categories: prevalence of problem gambling, total consumption, and appearance of conflicts of interest. We included each in this review, as they offer an encompassing view of gambling harms at individual, community, and societal levels [1••]. In total, the 21 studies included 24 observations regarding these three topics. Problem gambling prevalence was considered an appropriate harm indicator, as it is widely used in studies to describe individual-level harms. Although problem gambling symptoms are not the same as harms, they can be used as an indicator of them. Total consumption has also been used as an indicator of a variety of

**Table 1** Studies included in the systematic review

Reference	Type of harm indicator
Adams, P. J., Raeburn, J., & De Silva, K. (2009). A question of balance: prioritizing public health responses to harm from gambling. <i>Addiction</i> , 104(5), 688-691. [53]	Conflict of interest
Eadington, W. (2008). Gambling policy in the European Union: Monopolies, market access, economic rents, and competitive pressures among gaming sectors in the member states. In <i>Economic Aspects of Gambling Regulation: EU and US Perspectives</i> (pp. 71-90). Brill Nijhoff. [2]	Conflict of interest
Gainsbury, S., & Wood, R. (2011). Internet gambling policy in critical comparative perspective: The effectiveness of existing regulatory frameworks. <i>International Gambling Studies</i> , 11(3), 309-323. [41]	Total consumption
Goodman, R. (1994). <i>Legalized gambling as a strategy for economic development</i> . United States Gambling Study. [58]	Conflict of interest
Gu, Z. (2001). Performance gaps between US and European casinos: A comparative study. <i>UNLV Gaming Research &amp; Review Journal</i> , 6(2), 5. [42]	Total consumption
Hayer, T., Meyer, G. (2014) Die Prävention problematischen Spielverhaltens: Eine multidimensionale Herausforderung. <i>Journal of Public Health</i> , 12 (5), pp. 293-303. [46]	Total consumption
Kairouz, S., Paradis, C., Nadeau, L., Tovar, M. L., & Pousset, M. (2016). A cross-cultural comparison of population gambling patterns and regulatory frameworks: France and Québec. <i>Journal of public health policy</i> , 37(4), 467-482. [34]	Problem gambling prevalence
Keamey, M. (2005). <i>The economic winners and losers of legalized gambling</i> . No. w11234. National Bureau of Economic Research. [47]	Total consumption
Kingma, S. (2004). Gambling and the risk society: The liberalisation and legitimisation crisis of gambling in the Netherlands. <i>International Gambling Studies</i> , 4(1), 47-67. [43]	Total consumption
Littlewood, M. (2011). Gambling and regulation: Why there is nothing to fear from liberalisation. <i>Economic Affairs (Institute of Economic Affairs)</i> , 31(1), 34-37. [38]	Problem gambling prevalence
Ludwig, M., Kraplin, A., Braun, B., & Kraus, L. (2013). Gambling experiences, problems, research and policy: Gambling in Germany. <i>Addiction</i> , 108(9), 1554-1561. [49]	Conflict of interest
Marfels, C. (1998). Government ownership and monopoly in the Canadian casino gaming industry. <i>Gaming Law Review</i> , 2(1), 49-56. [50]	Conflict of interest
Marionneau, V. & Kankainen, V. (2018). Beneficiaries of gambling and moral disengagement. <i>International Journal of Sociology and Social Policy</i> . [59]	Conflict of interest
Marionneau, V. & Nikkinen, J. (2020). Stakeholder interests in gambling revenue: an obstacle to public health interventions. <i>Public Health</i> . [60]	Conflict of interest
Marionneau, V., Nikkinen, J., & Egerer, M. (2018). Conclusion. Egerer, M., Marionneau, V. & Nikkinen, J. (eds). <i>Gambling policies in European welfare regimes</i> . [35]	Conflict of interest; Problem gambling prevalence
Miers, D. (1996). Regulation and the public interest: commercial gambling and the National Lottery. <i>Mod. L. Rev.</i> , 59, 489. [51]	Conflict of interest
Paldam, M. (2008). <i>The political economy of regulating gambling</i> . "Gaming in the new Market Environment". Palgrave Macmillan, London. 184-208. [39]	Conflict of interest; Problem gambling prevalence
Planzer, S., Gray, H. M., & Shaffer, H. J. (2014). Associations between national gambling policies and disordered gambling prevalence rates within Europe. <i>International Journal of Law and Psychiatry</i> , 37(2), 217-229. [4]	Problem gambling prevalence
Rossow, I., & Hansen, M. B. (2016). Gambling and gambling policy in Norway—An exceptional case. <i>Addiction</i> , 111(4), 593-598. [40]	Problem gambling prevalence
Simon, O., Blaser, J., Muller, S., & Waelchli, M. (2013). Réduction des risques et jeux d'argent. Questions ouvertes par la révision du dispositif suisse. <i>Drogues, Santé Et Société</i> , 12(2), 66-89. [45]	Total consumption
Valleur, M. (2015). Gambling and gambling-related problems in France. <i>Addiction</i> , 110(12), 1872-1876. [52]	Conflict of interest
Young, M., & Markham, F. (2017). Coercive commodities and the political economy of involuntary consumption: The case of the gambling industries. <i>Environment and Planning A: Economy and Space</i> , 49(12), 2762-2779. [48]	Total consumption

population level harms, such as exposure and availability in related fields, like in alcohol studies [25], but also increasingly in gambling [1•, 26, 27]. The appearance of conflicts of interest was also considered in the previous reviews by Williams et al. [20] and Planzer and Wardle [19] and was considered a justifiable measure of systemic-level harms caused by gambling: Gambling is lucrative business for governments and private operators, which has been argued to have an impact

on regulatory choices [28–32]. The three harm indicators differ profoundly as outcome measures. As recommended for a realist systematic review approach [33], working with heterogeneous methods and under various research paradigms, we did not assess the quality of the research in a hierarchical way. However, we did note whether the research included empirical data and how large the dataset was to better assess the results.

## Results

In the following, we will consider the results thematically based on the three harm indicators found in the systematic review: problem gambling prevalence, total consumption, and appearance of conflicts of interest.

### Problem Gambling Prevalence

Table 2 presents the results of the included studies comparing the prevalence of problem gambling (PG) in monopolistic versus license-based regimes. In total, six observations in the data addressed this topic.

Two studies comparing population prevalence surveys across countries [4•, 34] find that there is either no observed difference between the two systems or that differences are not related to systems but possibly prevention. Another paper comparing case studies from Europe found that there also appears to be no observable difference between how well jurisdictions with licensed versus monopolistic regimes prevent problem gambling [35]. Cross-jurisdictional comparisons of prevalence rates are complicated due to the imprecise nature of population studies, including differences in screening instruments used, variance in samples, and heterogeneity in outcome measures [36, 37]. These differences have been argued to make it difficult to evaluate any cross-jurisdictional differences, including regime efficiency, using prevalence rates [37]. Kairouz et al. [34] also note that the levels of problem gambling within a population are probably not the most appropriate measure for evaluating comparative advantages of gambling policies or regimes.

The remaining studies focused only in differences within one jurisdiction (cross-sectional comparisons of market segments or longitudinal policy change studies). One study was a concept paper, arguing rather a lack of evidence than any difference between regimes in the case of the UK [38]. Another study compared levels of PG across two market segments in Denmark [39] and found that while PG prevalence was higher for the products operated in the licensed market than in the monopolistic market, this difference was likely to result from the characteristics of these products rather than the regime. Another paper compared prevalence of PG in Norway before and after the monopolisation of the country's EGM market [40]. The monopolisation process appears to have reduced overall PG prevalence because it also influenced availability and product characteristics of EGMs.

Overall, the results indicate that monopolistic and licensed regimes have some differences in terms of PG prevalence. Monopolistic regimes or market segments appear to have lower or similar levels of problem gambling than licensing, suggesting that monopolies may be better at limiting this type of harm because of other policy-choices often connected to monopolies, such as limited availability or prevention programmes.

### Total Consumption

Eight study observations compared monopolistic and licensed gambling regimes in terms of their potential to either increase or curb TC. The studies and their results are described in Table 3.

Three studies address the TC on gambling across jurisdictions [2, 41, 42]. Two of these [2, 41] found little difference between regimes regarding TC, but the study by Gu [42]

**Table 2** Study observations on the prevalence of problem gambling (PG)

Reference	Context	Data	Result
Kairouz et al. (2016) [34]	France and Québec	Population studies in Québec (2009; $N = 11,888$ ) and France (2010; $N = 27,653$ )	Lower levels of moderate-risk and PG in Québec (monopoly, 5.6 %) than France (partly licensed, 10.8 %), but attributed to prevention programmes rather than the monopoly.
Littlewood (2011) [38]	UK	Concept paper	Argues that the liberalisation of gambling markets is not accompanied by rising PG levels, or at least that there is no conclusive evidence to prove this.
Marionneau et al. (2018) [35]	Europe	Previous literature (chapters in the edited book)	Comparison of European country cases presented in the book argued to show that neither monopoly nor licensing is related to more efficiently preventing PG.
Paldam (2008) [39]	Denmark	Product level data from Danish gambling authority	Danish data shows that PG levels are higher for products operated in the licensed market (EGMs, casino, poker) than in the monopoly market (lottery, scratch cards, sports betting).
Planzer et al. (2014) [4•]	Europe	Population studies in European countries ( $N = 28$ )	No observed difference between PG prevalence rates between European countries with licensed versus monopolistic gambling regimes
Rossow & Hansen (2016) [40]	Norway	Population and youth studies on PG prevalence 2002–2013 ( $N = 21$ ); calls to PG helplines	The monopolisation of the Norwegian EGM market, accompanied by significant restrictions in availability and game characteristics, reduced overall levels of problem gambling.

**Table 3** Study observations on total consumption (TC)

Reference	Context	Data	Result
Eadington (2008) [2]	EU, USA, Australia, New Zealand, Canada	Gross gambling revenues (GGR) by sector in 2003 (other countries)/2004 (USA) compared to gross national products (GDP)	Regime does not appear to impact GGR/GDP ratio. GGR/GDP in EU was 0.52 % (mostly monopolistic during the time); in the USA 0.65 % (licensed). Ratio was higher in Canada: 1.11 % (mostly monopolistic); in NZ: 1.45 %, and in Australia: 1.93 % (mostly licensed).
Gainsbury & Wood (2011) [41]	Australia/Canada	Prevalence of online gambling based on previous literature	Online gambling prevalence in Canada (monopoly) in 2009 was 2.1 percent and in Australia (licensing) between 1-4 percent in 2010. This suggests regulatory regime has very little if any impact.
Gu (2001) [42]	United States/France, Netherlands	Financial figures of gambling operators in Nevada and Las Vegas, Partouche company (FR) and Holland Casinos (NL) from 1998	Monopolistic casino operations (FR and NL) were less expansive and were connected to lesser total consumption in comparison to competitive casino markets (US).
Hayer & Meyer (2014) [46]	Germany	Concept paper	In comparison to monopolistic offer in Germany (lottery, tote betting), licensed offer (EGMs) is more expansive resulting in increased TC.
Kearney (2005) [47]	United States	Concept paper	Both state-run monopolies and private operations in the US run expansionist gambling policies with an increased offer of addictive games.
Kingma (2004) [43]	Netherlands	Concept paper	Licensed EGM & lottery operators and monopolistic casino & instant lottery operations both function in an expansionist manner resulting in overall market growth, increased TC and increased problems.
Simon et al. (2013) [45]	Switzerland	Financial data on gambling revenue 2003-2011	The legalisation of a licensed casino market (1998) and the expansion of monopolistic lotteries market (2006) both connected with strong market growth and expansion.
Young & Markham (2017) [48]	Australia	Concept paper	Operators in private markets are more expansionist as they seek fast returns to investment.

argued that at least in the casino sector, monopolistic European providers in France and the Netherlands appeared to operate less expansionist business models resulting in lesser TC than the competitive US casino sector. However, this observation is only based on one type of game product (casino games) and dates back over 20 years, to a time when many European markets were still considered to have a less ‘commercialised’ attitudes than today [e.g. 43, 44].

More recently, one study [45] compared TC on gambling in Switzerland between the licensed casino market and the monopolistic lottery market. Despite these differing products, the study found that both monopolistic and licensed operators operated in an expansionist manner looking to expand markets and TC. Similar results have been argued in a number of concept papers [43, 46–48], but two of these papers ([46] comparing licensed and monopolistic offer in Germany and [48] describing the Australian experience) argue that licensed providers operating in a market environment and looking for financial returns may be more expansionist than monopolistic providers.

Overall, the results indicate that while both monopolistic and licensed offer is connected to applicability of high TC and expansionist attitude, this appears to hold more for licensed operators than for monopolies.

## Conflicts of Interest

Ten study observations concerned the potential of monopolies versus licensing models to be subject to COI. The studies are listed and described in Table 4.

Six of the included studies were concept papers. Of these, five papers [39, 49–52] connected monopolies, particularly when state-run, to a stronger COI in comparison to a licensed system. This difference was mainly attributed to the same entity (a state) taking several contradictory roles, including operator, regulator, and beneficiary of gambling. One concept paper [53] did argue that the state also has a similarly strong interest in revenue generated by licensed operators, and that any COI may be more strongly connected to total revenue from gambling than the regime. Private companies can also gain significant lobbying power and have been argued to foster ‘poisonous’ relationships with governments [54–56, 57•].

Only four studies used empirical evidence to investigate the scope of the COI. As this type of harm is difficult to operationalise, the studies are a mixture of focus groups and financial records, complicating comparisons [35, 58, 59, 60•]. The results were nevertheless similar to those argued in the concept papers: state-operated monopolies appeared to be related to a stronger COI than licensed regimes. At the same

**Table 4** Study observations on conflicts of interests (COI)

Reference	Context	Data	Result
Adams et al. (2009) [53]	Australia/Canada	Concept paper	The scope of government COI connected to total revenue, not regime. Any regime with a high TC is prone to COI.
Goodman (1994) [58]	United States	Key informant interviews ( $N = 50$ ) and review of cost-benefit studies ( $N = 14$ )	States have a COI in both licensed and monopolistic regimes either via strong industry lobbying or by direct implication as providers.
Ludwig et al. (2013) [49]	Germany	Concept paper	The monopolistic model creates a stronger COI because the same state entity operates, controls, and benefits from gambling.
Marfels (1998) [50]	Canada and United States	Concept paper	In Canada where the government both regulates and operates gambling (Canada), COI is stronger than in the US where regulation and operation are separate.
Marionneau & Kankainen (2018) [59]	Finland and France	Key-informant interviews ( $N = 33$ )	Beneficiaries of a gambling monopoly with an earmarked benefit system (Finland) were more implicated in and less critical of the system than beneficiaries in a partly licensed, tax-based model (France). The difference was attributed to earmarking, not the monopoly.
Marionneau & Nikkinen (2020) [60]	Europe	Financial statements of European gambling operators ( $N = 10$ )	Stakeholder interests in gambling are strong both in licensed and monopolistic markets, and this is likely to affect gambling policies either via lobbying (licensed markets) or via direct state involvement (monopolies)
Marionneau et al. (2018) [35]	Europe	Previous literature (chapters in the edited book)	Comparison of European country cases presented in the edited book shows that both licensed and monopolistic systems create COI, but COI appears particularly strong when the government takes several roles
Miers (1996) [51]	UK	Concept paper	Argues that when the lottery is operated by a private operator, the COI of the state is less pressing than in a case where the state is also the operator via public monopoly.
Paldam (2008) [39]	Denmark	Concept paper	The regulation of state-operated monopoly gambling is argued to be 'softer and more informal' than that of market-based operation, creating a stronger COI.
Valleur (2015) [52]	France	Concept paper	The strong COI related to the dual role of the state as an operator and regulator connected to opening the French online markets to licensing.

time, a licensing system does not protect from COIs if industry actors gain influence. As shown in the case studies analysed by Marionneau et al. [35], the financial stakes of states, other beneficiaries, as well as gambling industries create a variety of interests that may have important influence on national gambling legislations.

The results of this section indicate that although the empirical basis is weak, government-operated monopolies appear to be more connected to the presence of COI.

## Conclusion

The current review draws three main conclusions. First, and as was already established in the two previous reviews [19, 20], there remains a paucity particularly regarding empirical research on the effectiveness of different regulatory regimes in preventing and addressing gambling harms.

Second, based on the evidence that is available, different regulatory regimes appear to be connected to different types of gambling harms. In this paper, we have reviewed existing

evidence on how regulatory models impact problem gambling prevalence, total consumption, and the appearance of conflicts of interest. In terms of problem gambling, monopolistic configurations appear to be connected to lesser or at least similar levels of harms in comparison to licensing systems. As for total consumption, licensed markets may lead to increased consumption in comparison to monopolistic providers, but this also depends on what kind of business model operators have. Regarding conflicts of interest, state monopolies have been connected to stronger COIs due to their several roles, but it has also been suggested that a similar situation may arise if private operators gain significant political influence via lobbying or other connections with governments. This indicated that fiscal motivations have had priority over advancing the good of the society across regimes [61].

As the evidence base on the relative effectiveness of monopoly regimes to reduce harms is slim (or even contradictory), the third conclusion we draw is that instead of regulatory models, it would be more pressing to compare how these are organised. Even seemingly similar regulatory approaches can differ considerably, as also noted by Planzer and Wardle [19].

Even though gambling monopolies, particularly in the European Union, are justified in terms of consumer protection and harm prevention, monopolies may also operate in an expansionist manner. For example, despite being one of the last remaining fully monopolistic markets in Europe alongside with Norway, Finland also has one of the highest per capita gambling expenditure rates in the continent [62]. Similarly, in Sweden, Canada, or the Netherlands, state-owned or state-controlled monopolistic companies have been argued to operate increasingly commercial attitudes [43, 44, 63]. In contrast, monopolistic offer in Norway has been accompanied by comparatively effective harm prevention [40]. While the mostly license-based regime in New Zealand has recognised gambling as a public health issue already in early 2000s [53].

Based on these results, it appears that rather than the regime, issues such as availability, accessibility, scope of preventive work, responsible gambling policies, the existence of a sufficiently resourced independent monitoring body, as well as the implementation of a public health approach to gambling may better predict the levels of harm in society. For example, Molinaro et al. [64] have found a negative association between the expenditure on public health and levels of PG prevalence in European countries, whereas Baxter et al. [65] have found that rather than regimes, the focus on public health research appears to be a dividing line between jurisdictions.

The current study has been limited to reviewing existing research on the potential of gambling monopolies to affect harms. We have only compared two models: the typically state-run monopoly model and the market-based licensed model within and between certain jurisdictions. Further research should also take into consideration the variations between these ideal types, including a comparison of public and private monopolies, and different types of licensing. The review has also not addressed the causality between regime and harm. It may be that a specific regime is more prone to a certain type of harm, but it may also be that the harms precede the choice of regime [cf. 66]. Nevertheless, the paper has given an overview on existing evidence regarding the incidence of different types of harms under monopolistic versus licensed gambling systems.

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## References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
- Of major importance

1. Sulkunen P, Babor T, Cisneros Örnberg J, Egerer MD, Hellman CME, Livingstone C, et al. Setting limits: gambling, science, and public policy. Oxford: Oxford University Press; 2019. **The book is a collection of recent evidence on how to best regulate gambling, including a review on gambling regimes.**
2. Eadington W. Gambling policy in the European Union: monopolies, market access, economic rents, and competitive pressures among gaming sectors in the member states. In: Economic Aspects of Gambling Regulation: EU and US Perspectives, vol. 2008: Brill Nijhoff; 2008. p. 71–90.
3. Littler A. Member States versus the European Union: the regulation of gambling. Leiden: Martinus Nijhoff; 2011.
4. Planzer S, Gray HM, Shaffer HJ. Associations between national gambling policies and disordered gambling prevalence rates within Europe. *Int J Law Psychiatry*. 2014;37(2):217–29 **The paper is the first and currently only systematic comparison of problem gambling rates across European jurisdictions that considers regime types.**
5. Gainsbury SM, Blankers M, Wilkinson C, Schelleman-Offermans K, Cousijn J. Recommendations for international gambling harm-minimisation guidelines: comparison with effective public health policy. *J Gamb Stud*. 2014;30(4):771–88.
6. Egerer MD, Marionneau VK, Nikkinen JT, editors. Gambling policies in European welfare states. Current challenges and future prospects. London: Palgrave; 2018. **The book is a collection of case studies from European contexts regarding the regulation of gambling. It also draws conclusions on best policy practices in terms of regulation and regimes.**
7. Hörnle J, Littler A, Tyson G, Padumadasa E, Schmidt-Kessen M, Ibsiola D. Evaluation of regulatory tools for enforcing online gambling rules and channelling demand towards controlled offers. In: Final report. November 2018. Published 29 January 2019: European Commission. Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs; 2019. <https://op.europa.eu/fi/publication-detail/-/publication/6bac835f-2442-11e9-8d04-01aa75ed71a1>.
8. Cisneros Örnberg J, Tammi T. Gambling problems as a political framing—safeguarding the monopolies in Finland and Sweden. *J Gamb Issues*. 2011;26:110–25.
9. Marionneau VK. Justifications of national gambling policies in France and Finland. *Nord Stud Alcohol Dr*. 2015;32(3):295–309.
10. Rossow I, Hansen M, Storvoll E. Changes in youth gambling after removal of slot machines in Norway. *Nord Stud Alcohol Dr*. 2013;30(4):317–30.
11. Goudriaan AE. Gambling and problem gambling in the Netherlands. *Addiction*. 2014;109(7):1066–71.
12. Riksrevisionen [Swedish National Audit Office]. The government's role on the gambling market — are targets achieved? Summary, 2012; <https://www.riksrevisionen.se/download/18>.



- [78ae827d1605526e94b32948/1518435426878/Summary%20RiR\\_2012\\_15.pdf](#). Accessed 9 Dec 2020.
13. Tammi T, Castrén S, Lintonen T. Gambling in Finland: problem gambling in the context of a national monopoly in the European Union. *Addiction*. 2015;110(5):746–50.
  14. Raisamo S, Toikka A, Selin J, Heiskanen M. The density of electronic gambling machines and area-level socioeconomic status in Finland: a country with a legal monopoly on gambling and a decentralised system of EGMs. *BMC Public Health*. 2019;19(1):1–7.
  15. Costes JM, Kairouz S, Eroukmanoff V, Monson E. Gambling patterns and problems of gamblers on licensed and unlicensed sites in France. *J Gambl Stud*. 2016;32(1):79–91.
  16. Browne M., Bellringer M., Greer N., Kolandai-Matchett K., Langham E., Rockloff M. et al. Measuring the burden of gambling harm in New Zealand, 2017; [https://www.health.govt.nz/system/files/documents/publications/measuring\\_the\\_burden\\_of\\_gambling\\_harm\\_in\\_new\\_zealand.pdf](https://www.health.govt.nz/system/files/documents/publications/measuring_the_burden_of_gambling_harm_in_new_zealand.pdf). Accessed 9 Dec 2020.
  17. Wardle H, Reith G, Best D, McDaid D, Platt S. Measuring gambling-related harms: a framework for action. Birmingham, UK: Gambling Commission; 2018.
  18. Livingstone C, Rintoul A, de Lacy-Vawdon BR, Dietze P, Jenkinson R, et al. Identifying effective policy interventions to prevent gambling-related harm. Victorian Responsible Gambling Foundation: Melbourne; 2019.
  19. Planzer S, Wardle H. The comparative effectiveness of regulatory approaches and the impact of advertising on propensity for problem gambling. Report prepared for the responsible gambling fund in the UK; 2011.
  20. Williams RJ, West BL, Simpson RI. Prevention of problem gambling: a comprehensive review of the evidence, and identified best practices. In: Report prepared for the Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care; 2012;1:2012.
  21. Adams PJ. Gambling, freedom, and democracy. New York: Routledge; 2008.
  22. Adams PJ. Moral jeopardy: Risks of accepting money from the alcohol, tobacco and gambling industries. Cambridge, UK: Cambridge University Press; 2016.
  23. Aromataris E, Pearson A. The systematic review: an overview. *Am J Nurs*. 2014;114(3):53–8.
  24. Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. *PLoS Med*. 2009;6(7):e1000097.
  25. Babor T, Caetano R, Casswell S, Edwards G, Giesbrecht N, Graham K, et al. Alcohol: no ordinary commodity. Oxford: Oxford University Press; 2003.
  26. Rossow I. The total consumption model applied to gambling: empirical validity and implications for gambling policy. *Nord Stud Alcohol Dr*. 2019;36(2):66–76.
  27. Abbott MW. The changing epidemiology of gambling disorder and gambling-related harm: public health implications. *J Public Health*. 2020;184:41–5.
  28. Orford J. An unsafe bet? The dangerous rise of gambling and the debate we should be having. Wiley-Blackwell: Chichester, UK; 2011.
  29. Adams PJ. Addiction industry studies: understanding how proconsumption influences block effective interventions. *Am J Public Health*. 2013;103(4):e35–8 ON PAGE 4.
  30. Cassidy R, Loussouarn C, Pisac A. Fair game: producing gambling research. London: Goldsmiths (University of London); 2014.
  31. Nikkinen JT. Is there a need for personal gambling licenses? *Nord Stud Alcohol Dr*. 2019;36(2):108–24.
  32. Livingstone C. Harm prevention and reduction efforts in gambling disorder: an international perspective. In: Bowden-Jones H, Dickson C, Dunand C, Simon O, editors. Harm reduction for gambling: Public health perspective. London: Routledge; 2020. p. 91–101.
  33. Pawson R, et al. Realist review—a new method of systematic review designed for complex policy interventions. *J Health Serv Res Policy*. 2005;10(Suppl1):21–34.
  34. Kairouz S, Paradis C, Nadeau L, Tovar ML, Pousset M. A cross-cultural comparison of population gambling patterns and regulatory frameworks: France and Québec. *J Public Health Policy*. 2016;37(4):467–82.
  35. Marionneau VK, Nikkinen JT, Egerer MD. Conclusion: contradictions in promoting gambling for good causes. In: Egerer MD, Marionneau VK, Nikkinen JT, editors. Gambling policies in European welfare states. Current challenges and future prospects. London: Palgrave. p. 297–314.
  36. Productivity Commission. Gambling — inquiry report. Report no 50. Canberra, Australia; 2010.
  37. Armstrong AR, Thomas A, Abbott M. Gambling participation, expenditure and risk of harm in Australia, 1997–1998 and 2010–2011. *J Gambl Stud*. 2018;34(1):255–74.
  38. Littlewood M. Gambling and regulation: why there is nothing to fear from liberalisation. *Econ Affairs (Institute of Economic Affairs)*. 2011;31(1):34–7.
  39. Paldam M. The political economy of regulating gambling. In: Viren M, editor. Gaming in the new market environment. London: Palgrave Macmillan; 2008. p. 184–208.
  40. Rossow I, Hansen MB. Gambling and gambling policy in Norway—an exceptional case. *Addiction*. 2016;111(4):593–8.
  41. Gainsbury SM, Wood R. Internet gambling policy in critical comparative perspective: the effectiveness of existing regulatory frameworks. *Int Gambl Stud*. 2011;11(3):309–23.
  42. Gu Z. Performance gaps between US and European casinos: a comparative study. *UNLV Gaming Res Rev J*. 2001;6(2):5.
  43. Kingma S. Gambling and the risk society: the liberalisation and legitimisation crisis of gambling in the Netherlands. *Int Gambl Stud*. 2004;4(1):47–67.
  44. Binde P. Gambling in Sweden: the cultural and socio-political context. *Addiction*. 2014;109(2):193–8.
  45. Simon O, Blaser J, Muller S, Waelchli M. Réduction des risques et jeux d’argent. Questions ouvertes par la révision du dispositif suisse. *Drogues, Sante Soc*. 2013;12(2):66–89.
  46. Hayer T, Meyer G. Die prävention problematischer spielverhaltens: Eine multidimensionale herausforderung. *J Public Health*. 2014;12(5):293–303.
  47. Kearney MS. The economic winners and losers of legalized gambling. NBER Working Paper no 11234. Cambridge, MA: National Bureau of Economic Research; (March 2005) p. 2005.
  48. Young M, Markham F. Coercive commodities and the political economy of involuntary consumption: the case of the gambling industries. *Environ Plan A Econ Space*. 2017;49(12):2762–79.
  49. Ludwig M, Kraplin A, Braun B, Kraus L. Gambling experiences, problems, research and policy: gambling in Germany. *Addiction*. 2013;108(9):1554–61.
  50. Marfels C. Government ownership and monopoly in the Canadian casino gaming industry. *Gaming Law Rev*. 1998;2(1):49–56.
  51. Miers D. Regulation and the public interest: commercial gambling and the National Lottery. *Mod L Rev*. 1996;59:489–516.
  52. Valleur M. Gambling and gambling-related problems in France. *Addiction*. 2015;110(12):1872–6.
  53. Adams PJ, Raeburn J, De Silva K. A question of balance: prioritizing public health responses to harm from gambling. *Addiction*. 2009;104(5):688–91.
  54. Adams PJ, Buetow S, Rossen F. Vested interests in addiction research and policy poisonous partnerships: health sector buy-in to arrangements with government and addictive consumption industries. *Addiction*. 2010;105(4):585–90.

55. Livingstone C, Adams PJ. Harm promotion: observations on the symbiosis between government and private industries in Australasia for the development of highly accessible gambling markets. *Addiction*. 2011;106(1):3–8.
56. Freudenberg N. *Lethal but legal: corporations, consumption and protecting public health*. New York: Oxford University Press; 2014.
57. • Orford J. *The gambling establishment: challenging the power of the modern gambling industry and its allies*. Abingdon, UK: Routledge; 2020. **A recent and broad book on the topic of conflicts of interest in gambling regulation.**
58. Goodman R. *Legalized gambling as a strategy for economic development: United States gambling study*: Aspen Institute, Ford Foundation; 1994.
59. Marionneau VK, Kankainen V. Beneficiaries of gambling and moral disengagement. *Int J Sociol Soc Policy*. 2018;38(7-8):578–91.
60. • Marionneau VK, Nikkinen JT. Stakeholder interests in gambling revenue: an obstacle to public health interventions. *J Public Health*. 2020;184:102–6 **A recent empirical article concerning the stakeholders who benefit financially from gambling in European societies, including a take on regulatory regime type.**
61. Nikkinen JT, Marionneau VK. Gambling and the common good. *Gambling Research. J Natl Assoc Gambl Stud (Australia)*. 2014;1: 3–19.
62. Castrén S, Perhoniemi R, Kontto J, Alho H, Salonen AH. Association between gambling harms and game types: Finnish population study. *Int Gambl Stud*. 2018;18(1):124–42.
63. Smith G. The nature and scope of gambling in Canada. *Addiction*. 2014;109(5):706–10.
64. Molinaro S, Canale N, Vieno A, Lenzi M, Siciliano V, Gori M, et al. Country- and individual-level determinants of probable problematic gambling in adolescence: a multi-level cross-national comparison. *Addiction*. 2014;109(12):2089–97.
65. Baxter DG, Hilbrecht M, Wheaton CT. A mapping review of research on gambling harm in three regulatory environments. *Harm Reduct J*. 2019;16:12.
66. Bogart WA. *Permit but discourage: regulating excessive consumption*. New York: Oxford University Press; 2011.

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