Research report

Is there a need for personal gambling licences?

Janne Nikkinen
Centre for Research on Addiction, Control, and Governance (CEACG), University of
Helsinki, Finland

Abstract
Licensing is currently the most popular option among regulators for controlling gambling operations. However, approximately 20% of operators are still public monopolies. Many forms of gambling (especially lotteries) are government operated even in countries with a licensing system. This creates an inherent conflict of interest, given that government is supposed to protect the well-being of its citizenry and to reap the benefits of gambling at the same time. At least in the gambling monopoly, however, addressing the unavoidable harm that results from gambling should be a priority. Industry self-regulation and reliance on "responsible gambling" rely too much on individuals to control their own gambling. It is suggested in this contribution that it is possible to provide more comprehensive consumer protection, recognising both the duty of governments to take care of their own citizens and the fact that industry self-regulation is not enough. Pre-commitment cards have been tested in various contexts, and have shown promise in terms of providing tools for individuals to restrict their own gambling. However, given the known short-comings such as allowing the use of other cards that are not one's own, and other venues, it is clear that in themselves they do not guarantee effective prevention. Personal licensing is therefore explored as a move forward in this literature-based discussion. Although the system may be applicable to other contexts, the focus is on the Nordic countries. Given that the underlying justification for gambling monopolies is to control gambling-related harm, in the cases of Finland and Norway licensing could be combined with loyalty cards introduced by monopoly operators. This would provide a feasible alternative to current practices of responsible gambling.

Corresponding author:
Janne Nikkinen, CEACG, Faculty of Social Sciences, PO Box 18, Unioninkatu 35, 00014 University of Helsinki, Finland.
Email: janne.nikkinen@helsinki.fi

The purpose of gambling regulation is to ensure public confidence in gambling and to protect customers (Gambling Commission, 2017). Gambling is often promoted as harmless entertainment and a (partial) solution to the financing problems of welfare states, but in reality it is unclear what its net benefit is for European societies (Egerer, Marionneau, & Nikkinen, 2018). Economic and fiscal impacts may be modest and short-term, and they may depend on the jurisdiction (Walker & Sobel, 2016). Merely adding jobs to a certain community may not enhance well-being: in gambling as throughout the hospitality industry, jobs offered by operators tend to be part-time, underpaid, demanding less education, and to require shift work, especially at night, thus increasing the need for round-the-clock childcare especially in single-parent households (Grinols, 2004). Introducing new gambling opportunities does not necessarily generate additional revenue for operators and beneficiaries either, in that the games may cannibalise what is already on offer (Marionneau & Nikkinen, 2018). Even the regulators struggle to understand what the overall derived value is, particularly in the case of electronic gambling machines (EGMs) (Francis, Livingstone, & Rintoul, 2017).

Gambling generates a significant amount of harm, and problem gambling is a recognised public-health issue (Ferentzy & Turner, 2013; Lancet, 2017). It is estimated that up to ten million people could be categorised as gambling addicts in the European Union alone (Jensen, 2017). It is also claimed that each gambling addict inflicts harm upon between five and 17 other people (Sulkunen et al., in press). In Finland, a country with a population of 5.5 million, this would affect 700,000 people (MSAH, 2017). Gambling-related harm is not limited to health issues, however. Online gambling creates opportunities for money laundering (Fiedler, 2014), for example, and increases in problem gambling lead to a higher probability of criminal activity (Grinols, 2017). Gambling is also linked to corruption in public administration. Douglas Walker and Paul Calcagno

(2014) found in their empirical study evaluating federal corruption cases in all 50 US states, that the five states with the lowest levels of public corruption had no casinos. Moreover, only one of the five states with the most corruption cases related to civil servants did not have any casinos: this was Alaska, the state in which political corruption has related more closely to the oil industry.

Licensing is currently the most popular means among regulators of controlling gambling operations within a certain jurisdiction (Nikkinen, 2014). Approximately 20% of gambling operators are public monopolies (Sulkunen et al., in press). Two main arguments for legalising gambling have been put forward: legalisation stops crime and fraud, and (illegal) online gambling cannot be controlled. It is worth noting, however, that illegal gambling also exists in countries with public gambling monopolies. Sweden, for example, has thousands of illegal gambling machines that are not controlled by the government (Svenska Spel, 2014). It is also possible to control online gambling via payment blocking, as happens in Norway, meaning that banks and other financial institutions are not allowed to process gambling payments to unauthorised operators (Rossow & Hansen, 2016). IP blocking of websites owned by unlicensed gambling operators is also practised in Denmark. Furthermore, Germany and the United States have imposed a general ban on online sports betting (Reiche, 2013). Although this is changing in the US following court decisions made in 2018, it shows that it is possible to influence the availability of online gambling provided that there is enough political will to impose bans.

Given that there are the means available for effective restriction, it is more a question of what it is feasible to prohibit or restrict in liberal countries. To be more specific, one might ask what the government's proper role in gambling is, a question that John Dombrink (2009) also raised in the US context. Is it to control, to regulate, to promote or to facilitate gambling? These questions reflect varying approaches to

the complex issue of how to regulate and control coercive commodities, given that much of their consumption is involuntary (Young & Markham, 2017). The fact that the government is both the operator and the regulator in a gambling monopoly creates an inherent conflict of interest, as has been shown in various contexts across the globe (Adams, 2016; Andresen, 2006; Markham & Young, 2015; Orford, 2011; Smith & Rubenstein, 2011). The problem for governments that are increasingly dependent on gambling in the financing of public services seems to be that the efficient prevention of gambling problems may also decrease profits (Andresen, 2006; Collier, 2013; Rossow & Hansen, 2015; Williams, West, & Simpson, 2012). The reason for this is that much of the gambling revenue is derived from problem gamblers (e.g., Orford, Wardle, & Griffiths, 2013; Williams & Wood, 2004, 2007), and thus diminishing problem gambling leads also to a decrease in government revenue (see Williams & Wood, 2016 for further information and references).

If it is accepted that it is a governmental duty to protect citizens from gambling-related harm (even though it might have negative impact on state revenue), individual prevention measures could be introduced such as a mandatory pre-commitment card, as used in Norway and is being recommended for adoption in Australia in relation to electronic gambling machines, or EGMs (Rintoul & Thomas, 2017). This pre-commitment card could be developed further as a licence granted to individual gamblers, which would be a step towards the more efficient prevention of gambling-related harm. This article assesses the option of licensing for more effective control and regulation, instead of promoting and facilitating gambling. Given that this is a literature-based study, no empirical material is analysed: the aim is rather to point out possible alternatives to the current (dominant) notion of "responsible gambling". The reasoning relates to the fact that there are no clear-cut definitions of what is "responsible" as opposed to "excessive" gambling. This being

the case, one should err on the side of more effective consumer protection to facilitate the prevention of gambling problems before they occur.

Problem gambling and pre-commitment: What is the relationship?

Problem gambling is a phenomenon that occurs when time and/or money spent on gambling leads to negative consequences. Although there is no universally accepted definition of the phenomenon, according to Erica Langham and her colleagues it incorporates at least seven domains: financial issues, relationship issues, psychological distress, decrements to health, cultural harm, workplace problems and criminality (Langham et al., 2016). Gambling-related harm is understood in this article along broadly the same lines. In their efforts to tackle this issue, especially in relation to EGMs, countries such as Sweden and Norway, certain states in Australia and a province in Canada (Nova Scotia, a trial only) have introduced various pre-commitment systems (Ladouceur, Blaszczynski, & Lalande, 2012). In Finland, over 40% of the adult population currently have a Veikkaus (national monopoly operator, in addition to PAF in Åland) loyalty card, paving the way for the more efficient prevention of gambling-related harm through the monitoring of individual gambling habits.

Australia is the country that has perhaps given most attention to pre-commitment (Productivity Commission, 1999, 2010). In 2010 the Productivity Commission recommended those concerned about gambling-related harm to be more effective in implementing pre-commitment technologies, and mandatory pre-commitment was planned for the year 2014. However, this was merely a promise made by then Prime Minister Julia Gillard to independent (Tasmanian) MP Andrew Wilkie in return for his political support, and the plan was abandoned later. Opposition from the gambling

industry may well have influenced the decision (Livingstone, Rintoul, & Francis, 2014). Norway has been the most effective in implementing mandatory pre-commitment loss limits: the maximum monthly loss from all gambling through one of the two monopoly operators (Norsk Tipping, monopoly for lottery, sports and other gambling besides tote betting) is NOK 20,000 (approximately EUR 2,000). This mandatory limit-setting reduced the revenue of Norsk Tipping by NOK 150 million (approximately EUR 16 million) after its introduction in 2016 (Lyngøy, 2017), but according to the most recent Annual Report (2017: Norsk Tipping, 2018) profits are steadily increasing again. In any case, given that the annual revenue of Norsk Tipping is close to NOK 5,000 million (approximately EUR 500 million) the reduction in 2016 was modest, and the impact might not be long-lasting. Nevertheless, together with a reduction in EGM numbers and the consequently lower addiction potential, it may be a move in the right direction in terms of addressing gambling-related harm. The fact that gamblers viewed the limitations positively and only a few switched to other operators after the mandatory limit-setting supports this conclusion (Auer, Reiestad, & Griffiths, 2018).

In principle, the idea underlying pre-commitment is simple: decisions related to gambling expenditure should be made non-emotionally, and once the decision has been made it should be followed (Ladouceur et al., 2012). Thus, it is a mechanism for overcoming impulsivity (Kurth-Nelson & Redish, 2012). The benefit of pre-commitment for individual gamblers is that they are in a better position to evaluate the cost of gambling beforehand. The nature of gambling as a form of entertainment is such that it resembles a service, and it is difficult to specify what, exactly, is being bought. Even if one accepts the notion that (intangible) dreams of winning and one's imagination provide the entertainment value of gambling, and this is what the consumer pays for, the fact remains that spending money is an integral and unavoidable part of the activity. Many other forms of entertainment do not require the constant use of money, and the consumer knows the price beforehand, in other words before entering the venue in which the entertainment is provided. The cost of a movie ticket is known when the customer enters the cinema, for example, and similarly, the cost of watching a game of football, rugby or ice hockey is known when the ticket is bought. In some cases, the entertainment may be totally free (e.g., a concert in a public park).

In the case of gambling, however, the cost of the entertainment may be difficult to assess, which makes it difficult to evaluate other leisure options and thus the opportunity cost of gambling. Gamblers may initially (seemingly) decide rationally what they will consume, but "in the zone" (in a different state of mind when gambling) they may lose control of their consumption (Schull, 2012). Problem gamblers in particular tend to withdraw additional funds from ATMs, gamble away their winnings, and then try to recover their lost assets. Pre-commitment limits consumption, and it is this capacity that has led to its implementation and testing in several countries and states (such as the US state of Massachusetts) as a responsible gambling tool, despite the rather limited evidence base at present (Ladouceur, Shaffer, Blaszczynski, & Shaffer, 2017). Moreover, given that many gamblers with a gambling disorder recover without professional help, pre-commitment is also a suitable self-help tool (Harris & Griffiths, 2017). This, to some extent, explains its popularity among those who favour measures to encourage "responsible" gambling.

Current forms of pre-commitment may be voluntary or involuntary, and players may limit the time or the money spent at the venue. This limit-setting takes various forms (Thomas, Christensen, et al., 2016), depending on the pre-commitment system. Full pre-commitment requires registration by all those who intend to gamble, whereas partial pre-commitment allows gambling to continue without specific registration (the voluntary option). Both systems (full and partial) allow choice in the

setting of limits: it may be mandatory, meaning that all those who are in the system have to put a limit on their gambling, or voluntary in which case it is possible to continue gambling without placing strict limits on consumption (Thomas, Christensen, et al., 2016). One related and significant aspect of pre-commitment systems is the possibility of self-exclusion from the gambling venue. Previously, this option necessitated a personal visit to the venue to implement the system, but nowadays it is increasingly common to use electronic means (Thomas, Carson, et al., 2016). The breaching of self-exclusion is common in Australia, Canada and the USA; however, given that venues tend to rely on self-enforcement and manual recognition by the staff of those who have self-excluded. The general obligation to prove one's identity when entering gambling venues in Europe makes self-exclusion more efficient (Livingstone et al., 2014). However, in practice it is often circumvented by merely changing the gambling venue or continuing on an internet site. This is not such a big issue in the case of casino gambling in the Nordic counties, where much of the brick-and-mortar gambling is still provided by government-owned gambling operators, because no other casinos may be available. However, there is clearly a need for additional measures addressing the issue of gambling-related harm other than relying on self-exclusion and on individuals to control their own gambling. Most of those who exceed their limits are problem gamblers (Ladouceur et al., 2017, with reference to Hing et al., 2015).

Problems with pre-commitment

Various problems are associated with the use of pre-commitment systems. First, the quality of research addressing the issue is not particularly high, which makes it difficult to evaluate the usefulness of such systems and the efficacy of the various measures they include. Ladouceur et al. conducted a literature review in 2012, browsing empirical works dealing with the issue of pre-commitment. They identified 17 relevant academic publications, in addition to non-peer-reviewed governmental reports. Many of the 17 publications had severe methodological limitations, thus hindering evaluation of the measures adopted. The limitations included small and unrepresentative sample sizes, the inability to control for other gambling expenditure (apart from that occurring in the trial), high reliance on self-reporting and card swapping (gambling with pre-commitment cards other than the one assigned for use in the trial). A more recent review conducted by a team including the same two authors did not identify much new research that was not available earlier (Ladouceur et al., 2017). Andrew Harris and Mark Griffiths included pre-commitment in their review published in 2017: they note that mandatory limit-setting in Norway has helped gamblers to adhere to their limits (Harris & Griffiths, 2017).

Another issue with pre-commitment relates to the lack of universality in implementation: in many states and countries, including Norway where it is still possible to gamble via foreign internet operators, neither the loyalty card nor any other card required for pre-commitment covers all or even most of the available gambling forms (Ladouceur et al., 2012; Livingstone et al., 2014). Participants may continue gambling through other channels if the pre-commitment limit agreed with one specific operator or gambling venue has already been reached. Furthermore, Ladouceur and his colleagues question the efficacy of pre-commitment in tackling problem gambling in that problem gamblers may set higher limits than others. However, according to Livingstone and others (Livingstone et al., 2014) this may be a slight misinterpretation of the underlying findings because the study to which Ladouceur et al. (2012) refer (Schlotter Consulting, 2010) shows only that gamblers set higher limits when they are not in the gambling venue.

Third, private operators in jurisdictions in which there is no national gambling monopoly will store and process information related to

pre-commitment. The technology providers are also privately owned, which raises some concerns about the protection of personal information. Nevertheless, private companies in the field of finance routinely collect personal data, record receipts for government to use for taxation purposes and monitor internet and mobile-phone traffic, for example. Moreover, private healthcare providers store large amounts of highly sensitive personal information to which governments have no access. Thus, pre-commitment technology in itself does not differ markedly from the aforementioned practices (Banks, 2011). It could therefore be assumed that the problems associated with pre-commitment would not, as such, prevent the development of an efficient licensing system based on it.

Licensing

To facilitate the more effective prevention of gambling-related harm, consideration could be given to introducing a licence that covers all gambling, similar to a driving licence or a permit to carry a weapon. Among the proponents of such a course of action are Edward A. Morse and Ernest P. Goss in their book *Governing fortune: Casino gambling in America* (Morse & Goss, 2010). The concept of licensing is already recognised as a regulatory tool for controlling gambling companies and operations, but Morse and Goss propose that it should also apply to individuals. One reason for licensing gambling, according to W. A. Bogart (2011), is that there are already numerous areas in modern societies requiring a certain standard of competence and/or knowledge to lawfully engage in certain activities (plumbing and the law being prominent examples). Morse and Goss also point out that there is a historical precedent with regard to gambling: the state of Nevada in the USA passed a law in 1877 prohibiting gambling by those in debt and men with a family to support (Bogart, 2011; Morse & Goss, 2010). In these more modern times, many gambling venues across the globe require photographic

ID upon entry, and Nordic countries such as Norway and Sweden are forerunners in adopting technology that requires customers to identify themselves before being allowed to gamble (Williams, 2010). Electronic ID cards further enhance the capacity to recognise individual gamblers, complementing (or replacing) the use of online bank-account codes. The Nordic countries could therefore provide a suitable testing ground for this kind of licensing.

Further benefits of requiring a license to gamble include the fact that it could be revoked in case of misuse. It would also facilitate age control, given that licences are generally issued to adults. A licensing system could also require gamblers to understand the odds of winning beforehand. In the case of EGM gambling, for example, many gamblers claim that the amount they will win is consistent with the advertised return to player (RTP) ratio (AGRC, 2017), which is between 85% and 87% in Australia, and between 90% and 95% in Finland depending on the EGM. However, gamblers do not leave the EGM venue with 85 or 87 Euros in their pocket from a stake of 100 Euros: deduction of the price factor for each bet wagered results in a more accurate measure of the real cost of gambling. If, say, the RTP ratio is 85%, gamblers will lose 15% on average on each individual gambling event (such as electronic displays of moving the reels in an EGM "spin"). Given that the effect is cumulative, a gambler who places a bet of one Euro after each five seconds will lose ten Euros in less than five minutes (provided that the game works consistently in such a short time, which is not always the case). With a bet of five Euros for each individual event, the same amount (ten Euros) is lost in less than minute (AGRC, 2017).

Another often-cited misconception in this context is the so-called gambler's fallacy, in other words a belief that observing an increasingly long sequence of events (in an unbiased machine or other gambling platform) will make the occurrence of another outcome more likely in the next trial. In coin tossing, for example, more "heads" will somehow inevitably point to

the occurrence of "tails" (see Farmer, Warren, & Hahn, 2017). A theory test of the type that is common in driving schools across the globe could be introduced before a personal licence to gamble is issued, the aim being to find out whether the applicant understands the basic facts related to gambling. The information provided by gambling venues and private gambling operators is not always very helpful, or it may be presented in a complicated manner. The basic functionality of EGM gambling is even difficult for those who work in the field to understand. Moreover, losses are often disguised as winnings, near-misses are misleading and encourage more gambling that overrides rational assessment of the situation, and the same venue may have various EGMs with differing odds of winning, further hindering rational decision-making and effective consumer protection (Schull, 2012). Licensing would enable clarification of both the odds of winning, and of the fact that gambling events are, on the whole, statistically unrelated to each other.

It is clear that requiring a gambling license also constrains and limits gambling opportunities among those who are not problem gamblers. However, lessons learned in the case of other coercive commodities (such as alcohol, tobacco and drugs) indicate that most effective harm-reduction strategies also influence consumption among those who do not consider themselves "problematic" users (Williams, 2010; with reference to Williams, West, & Simpson, 2007, 2008). The total consumption model (TCM) has been influential in alcohol policy and may also be applicable to gambling policy (Sulkunen et al., in press; see also Harris & Griffiths, 2017 for references). Requiring a licence might lower the overall level of gambling, leading to fewer problems. It would also protect children through more efficient age verification: in the UK, for example, 25,000 children aged 11 to 16 qualify as problem gamblers (Gambling Commission, 2017). Currently it is difficult to find a problem-gambling prevention programme that adopts a family-focused approach (Kourgiantakis, Stark, Lobo, & Topperman, 2016). Effective prevention would require strict control of age verification, which a licence would facilitate. Licensing might also protect families in cases of child neglect due to problem gambling through suspension: currently only Singapore allows families to request the exclusion of a family member from a gambling venue as a harm-minimisation measure (Goh, Ng, & Yeoh, 2016).

Is the level of gambling harm such that there should be more effective control?

Consumer freedom is deemed important in relation to gambling, given that its provision is allowed and the activity seemingly gives personal pleasure to those who engage in it. The prevalent presupposition in gambling studies (and in most governmental reports on the subject) is that only a relatively small minority of players are addicted to gambling (approximately between one and three per cent of the populace, depending on the jurisdiction, see Sulkunen et al., in press), hence the pleasure of the majority is considered to cancel out the potential harm (Nikkinen & Marionneau, 2014). However, for many people gambling is of no significance, and most people who do gamble only enter lotteries. According to surveys and polls conducted in the UK, for example, the general view of gambling is somewhat negative (Orford, 2011). Moreover, 84% of the respondents in a study conducted in Australian Capital Territory in 2014 agreed with the statement that pokies (EGMs in Australia) did more harm than good, and more than half were in favour of reducing the number (Davidson, Rodgers, Taylor-Rodgers, Suomi, & Lucas, 2015). In Italy, all gambling advertising will be banned from 2019 onwards by parliamentary decree. Finland is a notable exception to the above-mentioned examples, in that many adults view gambling positively. However, the attitudes of

young people are slightly more negative, indicating a potential change in the future (Salonen, Alho, & Castren, 2017).

It is also common practice for governments to impose regulations on activities that are hazardous to health or are potentially criminal. Given that gambling is not an essential service, i.e., something that governments must necessarily allow or promote, effective limitation to tackle potential harm should be a viable option. Graphic warnings are given on cigarette packets and nutrition facts are commonplace in the case of food items, but when it comes to gambling-related harm empirically effective prevention measures are frequently not implemented. The capacity of the gambling industry to defend the sale of harmful products and services may explain the situation. In Australia, the capacity to lobby politicians has been compared to the power of the National Rifle Association (NRA) in the US (Baidawi, 2018; Buzacott-Speer, 2017), and political donations are used to resist gambling reforms (Scott & Heath, 2016). The mere threat of being targeted by the industry in elections may be enough for some politicians to withdraw their support for gambling restriction in Australia, as some commentators claim (Markham & Young, 2016).

The nature of gambling-related harm is poorly understood when it is limited to individuals who qualify as experiencing severe harm, which is a small percentage (Browne, Greer, Rawat, & Rockloff, 2017). It was reported in a study commissioned by the Victorian Gambling Research Foundation in Australia that 85% of gambling-related harm in the state of Victoria in the fiscal year 2014–2015 was associated with gamblers at a low or moderate risk. This accounted for AUD 4.3 billion as a social cost, whereas severe problem gamblers incurred a cost of AUD 2.36 billion within the same period (Browne, Greer, Armstrong et al., 2017). Most gambling harm in Australia (75%) is associated with EGMs, but pre-commitment is still not on the list when gambling restrictions are proposed. Effective prevention measures should focus on the gravest harm (i.e., resulting

from the use of EGMs) by reducing the number of EGMs and limiting overall access to them (Livingstone, 2018; Selin et al., 2017). Gambling machines should not be allowed in grocery stores and public places, where people cannot avoid them, but should be placed in designated venues. It is not possible to self-exclude from a grocery store, given that everyone needs to buy food items to survive. It is not necessary, either, for governments to allow EGMs in cafeterias and other retail spaces including general food stores, supermarkets and convenience stores that are frequented for purchasing the necessities for daily living. The presence of the machines gives unfair support to the enterprises that accept gambling in their premises, compared to those who for some reason are unable or unwilling to house them.

Current regulatory schemes tend to favour measures focused on self-regulation and individual responsibility, which has occurred in tandem with the de-regulation of the industry and thus favours commercial interests. Rebecca Cassidy et al. (2014) conclude on the basis of interviews conducted with over 100 stakeholders that "responsible gambling" is a political construct, serving the interests of the state when it aligns itself with the gambling industry. Garry Smith and Linda Hancock (Hancock & Smith, 2017) also criticise the so-called "Reno model", put forward in four academic articles published in sequence by more or less the same authors, advancing the idea that individual self-control is possible in the context of gambling (Blaszczynski et al., 2011; Blaszczynski, Ladouceur, Nower, & Shaffer, 2008; Blaszczynski, Ladouceur, & Shaffer, 2004; Collins et al., 2015). The Reno model is used both by operators to promote responsible gambling, and by government officials keen to reap the proceeds. The concept places the responsibility for problems on individuals, allowing the industry to focus on problem gamblers who show signs of a loss of control.

Even when responsible gambling legislation is in place, in reality it does not necessarily provide a safe or problem-free gambling

environment. Having conducted 225 interviews with its employees, Linda Hancock compared the legislation and policies in Australia that guide responsible gambling to what actually happens in the operations of a casino operator, Crown Casino in Melbourne, Victoria (Hancock, 2011). Violence in casino premises was reported on levels that would be unacceptable in many other businesses. The interviewees also reported that gamblers frequently urinated or even defecated on the floor, as they were not willing to cease gambling activities in order to visit the lavatory. It was customary to call a taxi instead of an ambulance to avoid reporting to the police and noting the casino context. Patrons who were intoxicated were allowed to gamble, even though this was against state law in Victoria. Moreover, many of the Crown Casino staff were inadequately equipped to recognise and actually deal with situations involving problem gambling: half of the interviewees said that they would not bother to intervene if they noticed an individual gambler having personal issues unless he or she was disturbing other patrons or the casino employees (Hancock, 2011). Given that Crown Casino is the largest casino in the southern hemisphere and operates in a highly regulated environment, the case described above indicates that reliance on self-regulation by the industry together with responsible gambling policies may not be enough to ensure the effective prevention of gambling-related harm.

Reasons for and against individual licensing

The implementation of an effective pre-commitment system is difficult if it is possible to continue gambling in other forms. One advantage of licensing is that it might make it easier to follow money flows. Currently it seems that private profits are on the rise and public profits are decreasing. For example, founder and CEO of the UK-based Bet365 Denise Coates paid herself GBP 217 million in the fiscal year 2016–2017, and was Britain's highest-paid executive during the period. Although she claims that her salary is "a fair recognition" of the growth of Bet365, critics point out that it is 22 times as much as the whole gambling industry donates annually to the treatment of problem gambling in the UK (Neate, 2017). Concerns about working conditions in betting companies have also been raised in the UK (Lamont, 2016). In the state of Tasmania in Australia, in turn, the same operator (Federal Hotels) owned by one family (the Farrell family) has been allowed to run gambling activities for 21 years, earning AUD 463 million during that time (Minshull, 2018). The process by which the license was given to one company in the most disadvantaged state in Australia was not very transparent, and politicians may not have understood how much revenue would be diverted from public use (Boyce, 2017). Given that up to 60% of gambling profits derive from problem gamblers (Schull, 2012), licensing might allow governments to see where the profits are coming from and whether the cost of harm is externalised to other jurisdictions (through the more efficient recognition of gamblers). It would also enhance the channelling of funds to domestic rather than foreign and possibly illegal operators if banks and financial institutions were required to check the validity of licences when payments were made. Preventing winnings being paid to unlicensed players would discourage individual gamblers from using foreign gambling sites.

Introducing individual licensing might be one more step towards the effective prevention of gambling problems, especially in counties in which there is a national gambling monopoly, including Nordic countries such as Finland and Norway. Electronic identity cards have not gained popularity in Finland: their use is not obligatory, and online identification tends to rely on online bank service codes. However, given that Veikkaus in Finland has issued over 1.8 million loyalty cards, and that a special card is required to gamble in Norway, it should be possible to combine identification and gambling-loyalty cards. Private operators

would probably be more resistant to mandatory pre-commitment in other contexts, such as Australia, the UK and the USA (Blaszczynski, Parke, Parke, & Rigbye, 2014), although even in these countries gamblers would benefit from having more effective pre-commitment systems because they reduce the attractiveness of risk-taking (Brevers et al., 2016). Currently, gamblers are able to set high limits and to establish a buffer in terms of whether to continue gambling (Gainsbury & Blaszczynski, 2012). Only deposit limits have proved to be effective, at least to some extent, as a means of pre-commitment in voluntary systems (Haefli, Lischer, & Schwartz, 2011). There is thus a clear need for a more comprehensive pre-commitment system in contexts in which gambling is in the hands of private operators, one that is not based on voluntary self-exclusion. Problem gamblers could easily circumvent any operator-based limitations. EGM gambling limits, in particular, may be set and then exceeded after a pause in the play unless the system is applied as effectively as in Norway. However, even in Norway it is unclear how much is gambled on other platforms and abroad (Harris & Griffiths, 2017). It would nevertheless be possible to control this form of gambling, too, by means of individual licensing combined with effective payment and/or IP-blocking, as long as there was the political will to do so. It is true that government interventions are frowned upon in many liberal democracies, but as in the case of tobacco, harm to others (passive smoking) eventually paved the way for more effective restrictions and regulation. Laws also restrict the use of alcohol and drugs.

Aside from the above arguments, however, one has to admit that the gravest concerns about introducing individual gambling licences tend to relate to privacy and the restriction of individual freedom. This also applies to the notion of pre-commitment (Gainsbury, Jakob, & Aro, 2018). The freedom of the majority tends to outweigh the damage to the minority, and governments should restrict gambling only if it causes harm to others or damages one's health.

In this context, the reasoning of J. S. Mill (1806–1873) has been invoked (e.g., Collins, 2003, 2010). Using Mill as a reference in the specific context of gambling is somewhat problematic: he published an article in the medical journal The *Lancet* under the title "Effects of gambling" in which he stated, "[t]here is no practice capable of being pointed out, which so entirely roots out all good habits and plants in the stead so many bad ones" (quoted in Mill, 1823, p. 215; Collins, 2010 also notes that Mill regarded gambling as a vice). It has also been pointed out (Wolff, 2011) that if Mill's concept of liberty were applied comprehensively to gambling, governments would not have the right to regulate the practice more heavily than it regulated other activities (Nikkinen & Marionneau, 2014; Wolff, 2011; see also McMillen, 2006, which is a thorough review of Collins, 2003).

It is unclear, however, how requiring a licence to gamble would limit the rights of or cause harm to those who are able to carry the costs of gambling. Many such gamblers in Finland already use a personal loyalty card, which links to personal bank-account information. Those who gamble with Norsk Tipping in Norway use a card combined with a personal ID and electronic payment system. Licensing would facilitate evaluation of whether or not social assistance and support are given in vain. Social-assistance schemes have been created in liberal welfare states to provide for basic needs such as food, shelter, education and clothing. Gambling may impose an unnecessary burden on those relying on public assistance or who are behind with their child-support payments (Morse & Goss, 2010). One objection to this kind of monitoring might be that it could have a stigmatising effect on those who use social assistance for gambling (Bogart, 2011). A potential benefit, however, is that the costs of gambling could be shown, with a view to avoiding the unnecessary circulation of money that does not necessarily produce much value in itself. If it was a matter of merely transferring social-security payments to gambling

companies, one could question the meaningfulness of funding "good causes" in such a manner. As the Australian Productivity Commission noted in 1999, people could support causes they deemed worthwhile directly, without using gambling as a medium (Productivity Commission, 1999).

The costs of gambling could also be internalised within the gambling community, and thus not transferred so easily to others. Currently in the US it is lucrative to establish a casino or other gambling venue on the state border to cater for gamblers from neighbouring states, and thus to externalise the cost. Further, incurring personal debt by taking instant loans to provide funds for gambling could be made more complicated if lenders were required to check that the person had a gambling licence. It has been found in the US that bankruptcies increase sharply nine years after a casino has been introduced in a neighbourhood (Morse & Goss, 2010). It is unclear why society needs to support the (private) gambling industry such that profits are made from those who are the most vulnerable (see the above examples from the UK in relation to Bet365 and from Tasmania in Australia). A relationship between gambling and debt has already been established both in academic research and in the grey literature produced by organisations providing debt counselling (Barnard et al., 2014; Downs & Woolrych, 2010; FCA, 2015; Heiskanen, 2017). Moreover, the need for more effective preventive policies has been highlighted in the context of bankruptcy and gambling debt (Duns, 2007). Finally, licences could be revoked in cases of gambling-motivated fraud, which is also a recognised problem in workplaces (Binde, 2016; Warfield & Associates, 2016).

Conclusions

It seems that current pre-commitment systems do not offer enough protection to problem gamblers. Either the tools are not used by gamblers or they are ineffective. Even if operators have responsible gambling policies in place, in practice they may fail to implement them properly (the case of Crown Casino in Melbourne). The benefits of licensing individual gamblers would include the possibility of educating them beforehand on the odds of gambling: there are many misconceptions about the odds of winning, especially with regard to EGM gambling. The fact that licences would only be issued to adults would reduce the need for age verification in the venue. This would further curb underage gambling and diminish the interest of gambling operators in targeting their advertising towards those under the legal gambling age.

It is true that individual licensing would not prevent all gambling-related harm, just as the driving licence does not fully prevent accidents and reckless driving (Bogart, 2011). Nevertheless, on the assumption that gambling inevitably causes harm and related social costs, requiring a licence would not be overregulation. One benefit for operators if the licence covered all gambling (including EGMs, lotteries and casinos) would be that individual gambling venues would not have the sole responsibility for controlling customers who have requested self-exclusion, which is both costly and time-consuming, and unreliable if the person chooses to try to circumvent the rules.

The fact that pre-commitment cards and customer-loyalty programmes (including the technologies necessary to run them) are already in place and are working in most of Nordic countries favours the trialling of licensed gambling in the region. In Finland the majority of the adult gambling population already use loyalty cards, and obligatory identification of gamblers is proposed, starting in 2021. The obligatory registration of gamblers has been in place in Sweden since 2014. In Norway, restrictions on gambling availability have proved effective in curbing EGM-related harm in particular, at least measured by the number of helpline calls (Rossow & Hansen 2016). Introducing a personal licence does not necessarily diminish profits: Norsk Tipping profits,

for example, have remained relatively stable (Norsk Tipping, 2018). Norsk Rikstoto (tote betting) will also impose a mandatory loss limit in January 2019. Together with the measures that Norsk Tipping introduced earlier, this could further pave the way for more effective pre-commitment and licensing in the future.

If effective harm prevention were politically feasible, this kind of licensing would ensure that gambling was channelled to government-sanctioned operators. Requiring banks and financial institutions to check the licences of customers before paying winnings into their accounts would reduce the incidence of money laundering. Currently in Finland, for example, there is no obligation for casinos to give a receipt for winnings under 1,000 Euros. As a result, financial transactions cannot be controlled efficiently, and it is difficult for banks to assess whether the money in question is genuinely related to gambling, or to other activities. The licence would thus also help the government to control payments.

Offshore and illegal gambling operators would not be able to access licensed customers if the financial institutions paying out the winnings required the possession of a licence on behalf of the customer. Less and less cash is used for gambling nowadays, and many gamblers already rely on cards. The technology needed for individual licensing is already in place. Societies should promote the good of all their citizens (Jordan, 1989): however, in encouraging gambling a society may jeopardise the well-being of some of its members (Adams, 2008; Nikkinen & Marionneau, 2014; Orford, 2011). The individual licence would be one step forward in the more effective prevention of harm, placing a fence on the top of the cliff instead of an ambulance at the bottom (Markham & Young, 2013).

Acknowledgement

Declaration of conflicting interests

Funding

References

Adams, P. (2008). *Gambling, freedom and democracy*. New York, NY: Routledge.

Adams, P. (2016). *Moral jeopardy: Risks of accepting money from alcohol, tobacco and gambling industries*. Cambridge, UK: Cambridge University Press.

AGRC (Australian Gambling Research Centre). (2017). *How electronic gambling machines work: Structural characteristics*. AGRC Discussion Paper No. 8. July 2017. Retrieved from https://aifs.gov.au/agrc/publications/how-electronic-gambling-machines-work/price-egms

Andresen, M. (2006). Governments' conflict of interest in treating problem gamblers. *Canadian Medical Association Journal (CMAJ)*, *175*(10), 1191–1192.

Auer, M., Reiestad, S., & Griffiths, M. (2018). Global limit setting as a responsible gambling tool: What do players think? *International Journal of Mental Health and Addiction*. Advance online publication. doi:10.1007/s11469-018-9892-x

Baidawi, A. (2018). Australians are the world's biggest gambling losers, and some seek action. *New York Times*, 4 April. Retrieved from https://www.

nytimes.com/2018/04/04/world/australia/austra
lians-gambling-betting-machines.html

Banks, G. (2011). *Evidence and social policy: The case of gambling*. Presentation to the South Australian Centre for Economic Studies, Corporate Seminar, Adelaide, 30 March.

Barnard, M., Kerr, J., Kinsella, R., Orford, J., Reith, G., & Wardle, H. (2014). Exploring the relationship between gambling, debt and financial management in Britain. *International Gambling Studies*, 14(1), 82–95.

Binde, P. (2016). Gambling-related embezzlement in the workplace: A qualitative study. *International Gambling Studies*, 16(3), 3921–3407.

Blaszczynski, A., Collins, P., Fong, D., Ladouceur, R., Nower, L., Shaffer, H., ... Venisse, J. L. (2011). Responsible gambling: General principles and minimal requirements. *Journal of Gambling Studies*, 27(4), 565–573.

Blaszczynski, A., Ladouceur, R., Nower, L., & Shaffer, H. (2008). Informed choice and gambling: Principles for consumer protection. *Journal of Gambling, Business and Economics*, 2(1), 103–118.

Blaszczynski, A., Ladouceur, R., & Shaffer, H. (2004). A science-based framework for responsible gambling: The Reno model. *Journal of Gambling Studies*, 20(3), 301–317.

Blaszczynski, A., Parke, A., Parke, J., & Rigbye, J. (2014). *Operator-based approaches to harm minimisation: Summary, review and future directions*. London, UK: The Responsible Gambling Trust.

Bogart, W. (2011). *Permit but discourage: Regulating excessive consumption*. Oxford, UK: Oxford University Press.

Boyce, J. (2017). *Losing streak: How Tasmania was gamed by the gambling industry*. Carlton, Victoria: Redback.

Brevers, D., Noel, X., Clark, L., Zyuzin, J., Park, J., & Bechara, A. (2016). The impact of pre-commitment on risk taking while gambling: A preliminary study. *Journal of Behavioural Addictions*, 5(1), 51–58.

Browne, M., Greer, N., Armstrong, T., Doran, C., Kinchin, I., Langham, E., & Rockloff, M. (2017). *The social cost of gambling to Victoria*.
Melbourne, Australia: Victorian Responsible Gambling Foundation.

Browne, M., Greer, N., Rawat, V., & Rockloff, M. (2017). A population-level metric for gambling-related harm. *International Gambling Studies*, 17(2), 163–175.

Buzacott-Speer, E. (2017). Crown casino: Gambling industry "Australia's equivalent of the NRA", Tim Costello says. *ABC Radio Brisbane*, 19 October, updated 20 October. Retrieved from http://www.abc.net.au/news/2017-10-19/crown-casino-gambling-australian-equivalent-nra-tim-costello/9065418

Cassidy, R., Loussouarn, C., & Pisac, A. (2014). *Fair game? Producing and publishing gambling research*. London, UK: Goldsmiths (University of London).

Collier, R. (2013). Canada needs more aggressive problem-gambling policies, say researchers. *Canadian Medical Association Journal (CMAJ)*, 185(10), E435–E436.

Collins, P., Blaszczynski, A., Ladouceur, R., Shaffer, H., Fong, G., & Venisse, J.-L. (2015). Responsible gambling: Conceptual considerations. *Gaming Law Review and Economics*, 3, 594–599.

Collins, P. (2003). *Gambling and the public interest*. Westport, CT: Praeger.

Collins, P. (2010). Defining addiction and identifying the public interest in liberal democracies. In D. Ross, H. Kincaid, D. Spurrett, & P. Collins (Eds.), *What is addiction?* (pp. 409–433). Cambridge, MA: The MIT Press.

Davidson, T., Rodgers, B., Taylor-Rodgers, E., Suomi, A., & Lucas, N. (2015). *2014 Survey on gambling, health, and well-being in the ACT*. Final report, 15 December. Canberra, Australia: Australian Capital Territory Gambling and Racing Commission.

Dombrink, J. (2009). The unproblematic normalization of gambling in America. In A. Wolfe & E. Owens (Eds.), *Gambling: Mapping the American Moral Landscape*. Waco, TX: Baylor University Press, 193–209.

Downs, C., & Woolrych, R. (2010). Gambling and debt: The hidden impacts on family and work life. *Community, Work & Family*, 13(3), 311–328.

Duns, J. (2007). Other people's money: Gambling and bankruptcy. *Melbourne University Law Review*, *31*(1), 87–104.

Egerer, M., Marionneau, V., & Nikkinen, J. (Eds.). (2018). *Gambling and European welfare states*. Work and welfare in Europe series. London, UK: Palgrave.

Farmer, P., Warren, P., & Hahn, U. (2017). Who "believes" in gambler's fallacy and why? *Journal of Experiment Psychiatry General*, *146*(1), 63–76.

FCA (Financial Councelling Australia). (2015). *Duds, mugs and the A-list: The impact of uncontrolled sports betting*. A report. Financial Counselling Australia. Retrieved from https://www.financialcounsellingaustralia.org.au/getattachment/Corporate/Home/FINAL-PDF-Duds,-Mugs-and-the-A-List-The-Impact-of-Uncontrolled-Sports-Betting-low-res.pdf

Ferentzy, P., & Turner, N. (2013). *The history of problem gambling: Temperance, substance abuse, medicine, and metaphors*. New York, NY: Springer.

Fiedler, I. (2014). Online gambling as a game changer for money laundering? In W. Ötsch, G. Grözinger, K. Beyer, & L. Bräutigam (Eds.), *The political economy of offshore jurisdictions* (pp. 79–95). Kritische Studien zu Markt und Gesellschaft. Band 6. Marburg, Germany: Metropolis.

Francis, L., Livingstone, C., & Rintoul, A. (2017). Analysis of EGM licensing decisions by the gambling regulator, Victoria, Australia. *International Gambling Studies*, *17*(1), 65–86.

Gainsbury, S., & Blaszczynski, A. (2012). Harm minimization in gambling. In R. Pates & D. Riley (Eds.), *Harm-reduction in substance use and high-risk behaviour: International policy and practice* (pp. 263–278). Oxford, UK: Wiley-Blackwell.

Gainsbury, S., Jakob, L., & Aro, D. (2018). Understanding end-user perspectives to enhance perceived value uptake of harm-minimization tools: Considering gambler's views of a pre-commitment system. *International Gambling Studies*, *18*(1), 22–38.

Gambling Commission. (2017). *Statement of principles for licensing and regulation*. UK Gambling Commission. Retrieved from http://www.gamblingcommission.gov.uk/PDF/Statement-of-principles-for-licensing-and-regulation.pdf

Goh, E., Ng, V., & Yeoh, B. (2016). The family exclusion order as a harm-minimisation measure for casino gambling: The case of Singapore. *International Gambling Studies*, *16*(3), 373–390.

Grinols, E. (2004). *Gambling in America: Costs and benefits*. Cambridge, UK: Cambridge University Press.

Grinols, E. (2017). Problem gambling, mental health, alcohol and drug abuse: Effects on crime. In E. Savona, M. Kleiman, & F. Calderoni (Eds.), *Dual markets: Comparative approaches to regulation* (pp. 321–330). Cham, Switzerland: Springer.

Haefli, J., Lischer, S., & Schwartz, J. (2011). Early detection items and responsible gambling features for online gambling. *International Gambling Studies*, *11*(3), 273–288.

Hancock, L. (2011). *Regulatory failure? The case of Crown casino*. Melbourne, Australia: Australian Scholarly Publishing.

Hancock, L., & Smith, G. (2017). Critiquing the Reno Model I-IV: International influence on regulators and governments (2004–2015) – the distorted reality of "responsible gambling". *International Journal of Mental Health and Addiction*, *15*(6), 1151–1176. doi:10.1007/s11469-017-9746-y

Harris, A., & Griffiths, M. (2017). A critical review of harm-minimisation tools available for electronic gambling. *Journal of Gambling Studies*, *33*, 187–221.

Heiskanen, M. (2017). *Problem gamblers and money: Unbalanced budgets and financial recovery* (Doctoral dissertation). Department of Social Studies, Faculty of Social Sciences, University of Helsinki, Finland. Retrieved from https://helda.helsinki.fi/handle/10138/228528

Hing, N., Cherney, L., Gainsbury, S., Lubman, D., Wood, R., & Blaszczynski, A. (2015). Maintaining and losing control during Internet gambling: A qualitative study of gamblers' experiences. *New Media & Society*, *17*, 1075–1095.

Jensen, C. (2017). Money over misery: Restrictive gambling legislation in era of liberalization. *Journal of European Public Policy*, 24(1), 119–134.

Jordan, B. (1989). *The common good: Citizenship, morality, and self-interest*. Abingdon, UK: Basil Blackwell.

Kourgiantakis, T., Stark, S., Lobo, T., & Topperman, L. (2016). Parent problem gambling: A systematic review of prevention programs for children. *Journal of Gambling Issues*, 33. doi:10.4309/jgi.2016.33.2

Kurth-Nelson, Z., & Redish, A. (2012). Don't let me do that! – Models of precommitment. *Frontiers in Neuroscience*, 6. doi:10.3389/fnins.2012.00138

Ladouceur, R., Blaszczynski, A., & Lalande, D. (2012). Pre-commitment in gambling: A review of the empirical evidence. *International Gambling Studies*, 12(2), 215–230.

Ladouceur, R., Shaffer, P., Blaszczynski, A., & Shaffer, H. (2017). Responsible gambling: A synthesis of the empirical evidence. *Addiction Research & Theory*, 25(3), 225–235.

Lamont, T. (2016). The big gamble: The dangerous world of British betting shops. *The Guardian*, 31 May. Retrieved from https://www.theguardian.com/business/2016/may/31/big-gamble-dangerous-british-betting-shops

Lancet. (2017). Editorial: Problem gambling is a public health concern. *The Lancet*, 390, 913.

Langham, E., Thorne, H., Browne, M., Donaldson, P., Rose, J., & Rockloff, M. (2016). Understanding gambling related harm: A proposed definition, conceptual framework, and taxonomy of harms. *BMC Public Health*. doi:10.1186/s12889-016-2747-0

Leiper, N. (1989). Tourism and gambling. *GeoJournal*, 19(3), 269–275.

Livingstone, C. (2018). "No pokies" Xenophon goes for "some pokies", but does his gambling policy go far enough? *The Conversation (Australia)*, 20 February. Retrieved from https://theconversation.com/no-pokies-xenophon-goes-for-some-pokies-but-does-his-gambling-policy-go-far-enough-92038

Livingstone, C., Rintoul, A., & Francis, L. (2014). What is the evidence for harm minimization measures in gambling venues? *Evidence Base,*

Australia and New Zealand School of Government, 2, 1–24.

Lyngøy, R. (2017). Norsk Tipping har tapt 150 millioner kroner – med vilje [Norsk Tipping has lost 150 million NOK – intentionally]. *ITromso*, 2 October. Retrieved from https://www.itromso.no/100Sport/idrettspolitikk/Norsk-Tipping-har-tapt-150-millioner-kroner--med-vilje-243247b.html

Marionneau, V., & Nikkinen, J. (2018). Market cannibalization within and between gambling industries: A systematic review. *Journal of Gambling Issues*, 37, 1–35.

Markham, F., & Young, M. (2013). What are the odds new casinos lead to social harm? *The Conversation* (Australia), 15 October. Retrieved from https://theconversation.com/what-are-the-odds-new-casinos-lead-to-social-harm-19161

Markham, F., & Young, M. (2015). "Big gambling": The rise of the global industry-state complex. *Addiction Research & Theory*, 23(1), 1–4.

Markham, F., & Young, M. (2016). When it comes to election campaigns, is the gambling lobby all bark and no bite? *The Conversation* (Australia), 21 December. Retrieved from https://theconversation.com/when-it-comes-to-election-campaigns-is-the-gambling-lobby-all-bark-and-no-bite-70494

McMillen, J. (2006). Book reviews. *International Gambling Studies*, 6(1), 95–104.

Mill, J. S. (1823). The late murder. Effects of gambling. *The Lancet London*, (9 November 1823), 214–216.

Minshull, N. (2018). It's another mining tax campaign: How the gaming lobby is fighting the Tasmanian election. *The Guardian*, 1 March. Retrieved from https://www.theguardian.com/commentisfree/2018/mar/01/its-another-mining-tax-campaign-how-the-gaming-lobby-is-fighting-the-tasmanian-election

Morse, E., & Goss, E. (2010). *Governing fortune: Casino gambling in America*. Ann Arbor, MI: Michigan University Press.

MSAH (Ministry of Social Affairs and Health in Finland). (2017). Working group: The reform of the Lotteries Act must intensify prevention of gambling problems. Press release 161/2017.

The referred work is Selin, J., Simonen, J., Alho, H., Castren, S., Järvinen-Tassopoulos, J., Karsson, T., Nikkinen, J., Salonen, A., & Warpenius, K.(2017). *Sääntelyyn perustuvat rahapelihaittojen ehkäisytoimet ja niiden soveltuvuus Suomen rahapelijärjestelmään* [*Regulatory measures to prevent gambling problems and their suitability to the Finnish gambling system*]. Report of the Ministry of Social Affairs and Health in Finland 43.

Neate, R. (2017). Bet365 chief Denise Coates paid herself £217 million last year. *The Guardian*, 12 November. Retrieved from https://www.theguardian.com/business/2017/nov/12/bet365-chief-denise-coates-paid-217m-last-year

Nikkinen, J. (2014). *The global regulation of gambling: a general overview*. (Working paper no. 30). Working Papers of the Department of Social Research, Faculty of Social Sciences, University of Helsinki, Finland.

Nikkinen, J., & Marionneau, V. (2014). Gambling and the common good. *Gambling Research (Journal of the National Association for Gambling Studies in Australia)*, *26*(1), 3–19.

Norsk, Tipping. (2018). *Annual Report 2017*. Retrieved from https://www.norsk-tipping.no/selskapet/engelsk/annual-reports

Orford, J. (2011). *An unsafe bet? The dangerous rise of gambling and the debate we should be having*. Chichester, UK: Wiley-Blackwell.

Orford, J., Wardle, H., & Griffiths, M. (2013). What proportion of gambling is problem gambling? Estimates from the 2010 British Gambling Prevalence Survey. *International Gambling Studies*, *13*(1), 4–18.

Productivity Commission. (1999). *Australia's gambling industries*. Public inquiry. Report Number 10. Canberra, Australia: AusInfo.

Productivity Commission. (2010). *Gambling*. Inquiry report. Report Number 50. Canberra, Australia: Australian Government.

Reiche, D. (2013). The prohibition of online sports betting: A comparative analysis of Germany and the United States. *European Sport Management Quarterly*, *13*(3), 293–314.

Rintoul, A., & Thomas, A. (2017). *Pre-commitment systems for electronic gambling machines: Preventing harm and improving consumer protection*. Australian Gambling Research Centre (Australian Institute of Family Studies). Retrieved from https://aifs.gov.au/sites/default/files/1707_agrc_dp9-pre-commitment-v3.pdf

Rossow, I., & Hansen, M. (2016). Gambling and gambling policy in Norway: An exceptional case. *Addiction*, *111*, 593–598.

Salonen, A., Alho, H., & Castren, S. (2017). Attitudes towards gambling, gambling participation, and gambling-related harm: Cross-sectional Finnish population studies 2011 and 2015. *BMC Public Health*. doi:10.1186/s12889-017-4056-7

Schlotter Consulting. (2010). *Factors that influence gambler adherence to pre-commitment decision*. Melbourne, Australia: Gambling Research Australia.

Schull, N. (2012). *Addiction by design: Machine gambling in Las Vegas*. Princeton, NJ: Princeton University Press.

Scott, J., & Heath, M. (2016). Gambling is killing one Australian in a day, but it rakes in billions in tax. *Sydney Morning Herald*, 28 September. Retrieved from https://www.smh.com.au/business/consumer-affairs/gambling-is-killing-one-australian-a-day-but-it-rakes-in-billions-in-tax-20160928-grpypl.html

Selin, J., Simonen, J., Alho, H., Castren, S., Järvinen-Tassopoulos, J., Karlsson, T., . . . Warpenius, K. (2017). *Sääntelyyn perustuvat rahapelihaittojen ehkäisytoimet ja niiden soveltuvuus Suomen rahapelijärjestelmään*. STM Raportteja ja muistioita 43 [Reports and memorandums of the Finnish Ministry of Social Affairs and Health].

Smith, G., & Rubenstein, D. (2011). Socially responsible and accountable gambling in the public interest. *Journal of Gambling Issues*, *25*, 54–67.

Sulkunen, P., Babor, T., Cisneros Örnberg, J., Egerer, M., Hellman, M., Livingstone, C., . . . Rossow, I. (in press). *Setting limits: Gambling, science, and public policy*. Oxford, UK: Oxford University Press.

Svenska Spel. (2014). *Annual report 2014*. Retrieved from https://om.svenskaspel.se/AnnualReport/2014/eng/pdf/SvenskaSpel_AR2014_ENG.pdf

Thomas, A., Carson, R., Deblaquiere, J., Armstrong, A., Moore, S., Christensen, D., & Rintoul, A. (2016). *Review of electronic gaming machine pre-commitment features: Self-exclusion*. Melbourne, Australia: Australian Institute of Family Studies.

Thomas, A., Christensen, D., Deblaquiere, J., Armstrong, A., Moore, S., Carson, R., & Rintoul, A. (2016). *Review of electronic gaming machine pre-commitment features: Limit setting*. Melbourne, Australia: Australian Institute of Family Studies.

Walker, D., & Calcagno, P. (2014). Casinos and political corruption in the US: A Granger causality analysis. *Applied Economics*, *45*(34), 4781–4795.

Walker, D., & Sobel, R. (2016). Social and economic impacts of gambling. *Current Addiction Reports*, *3*, 293–298.

Warfield & Associates. (2016). *Gambling-motivated fraud in Australia 2011–2016*. August 2016. Sydney, NSW: Warfield & Associates. Retrieved from https://warfield.com.au/wp-content/uploads/2016/08/Gambling-Motivated-Fraud-in-Australia-2011-to-2016.pdf

Williams, R. (2010). *Pre-commitment as a strategy for minimizing gambling-related harm*. White Paper prepared for Unisys Australia Pty Limited and Responsible Gaming Networks, Victoria, Australia, 8 July.

Williams, R., West, B., & Simpson, R. (2007). Prevention of problem gambling. In G. Smith, D. Hodgins, & R. Williams (Eds.), *Research and measurement issues in gambling studies* (pp. 399–435). San Diego, CA: Elsevier.

Williams, R., West, B., & Simpson, R. (2008). *Prevention of problem gambling: A comprehensive review of evidence 2008*. Report prepared for the Ontario Problem Gambling Research Centre. Guelph, Ontario, Canada, 1 December.

Williams, R., West, B., & Simpson, R. (2012). *Prevention of problem gambling: A comprehensive review of evidence and identified best practices*. Report prepared for the Ontario Problem Gambling Research Centre and The Ontario Ministry of Health and Long Term Care, 1 October.

Williams, R., & Wood, R. (2004). The proportion of gaming revenue derived from problem gamblers: Examining the issues in Canadian context. *Analyses in Social Issues and Public Policy*, *4*(1), 33–45.

Williams, R., & Wood, R. (2007). The proportion of Ontario gambling revenue derived from problem gamblers. *Canadian Public Policy*, *33*(3), 367–388.

Williams, R., & Wood, R. (2016). What proportion of gambling revenue is derived from problem gamblers? Presentation at Alberta Gambling Research Institute Conference, Banff, Alberta, April. Retrieved from https://prism.ucalgary.ca/bitstream/handle/1880/51141/Williams_AGRI2016_What_Proportion_of_Gambling_Revenue_is_Derived_from_PG.pdf;jsessionid=A55DACABFBC72C573E99AAAA98EB0E0E?sequence=18

Wolff, J. (2011). *Ethics and public policy: A philosophical inquiry*. Cornwall, UK: Routledge.

Young, M., & Markham, F. (2017). Coercive commodities and the political economy of involuntary consumption: The case of gambling industries. *Environment and Planning A: Economy and Space*, *49*, 2762–2779.