



Conceptual Framework of Harmful Gambling:

AN INTERNATIONAL COLLABORATION,
THIRD EDITION

GAMBLING ENVIRONMENT FACTOR

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1 GAMBLING ENVIRONMENT

The environment in which a person lives can have an impact on the nature and frequency of gambling activity, which also impacts the degree of resulting gambling-related harm. In this section we discuss the gambling environment, which covers a broad set of factors including economics, the socio-political environment, public policy, and culture of social responsibility. It is important to note that each jurisdiction is subject to different policies and regulations that can vary both within and between countries. What follows describes policies and issues that are relatively common among many western countries.

To date there has not been sustained research attention paid to links between factors related to the gambling environment and levels of harmful gambling. This can be attributed – at least partially – to the fact that government and industry resources dedicated to reducing harm from gambling have largely been focused on the individual, rather than on the community or society in general. A systematic review of socioeconomic impact studies of gambling identified 492 studies (only 60% of these were empirical investigations), which mainly examined government revenue, employment, harmful gambling, and non-gambling business revenue.¹ Fewer than 10% of the studies examined impacts in the areas of regulatory costs, infrastructure, quality of life, inequality, property values, or business starts

and failures. Consequently, more research is needed on the macroeconomic, microeconomic, and socio-political forces that shape gambling provision.

Gambling is a commercial activity that is largely controlled and regulated by governments, but also driven to some extent by complex market forces that determine supply and demand and, ultimately, the nature, availability, and accessibility of various forms of gambling within a specific jurisdiction. State-owned gambling companies have to meet the challenge of balancing responsible provision of gambling (which in the European Community (EC) legislative framework is one of the acceptable reasons for national restrictions of the gambling market) and commercialism, which enables competition with foreign-based, privately-owned Internet gambling companies. The practices and procedures adopted by the industry in developing, configuring, advertising, and marketing gambling products are often at odds with corporate social responsibility objectives. Economic tensions exist between the commercial reality of gambling's intra- and inter-sector competition, and community pressures to reduce gambling-related harms on individuals, families, and the wider society.

Exposure to gambling is dependent upon a number of factors. Online gambling is readily available to anyone with an internet connection and a mobile phone, computer, or tablet. In some jurisdictions, online gambling constitutes a large part of the gambling market.

In Sweden, for example, half of the market was online gambling in 2018.² Close to 70% of those who called the Swedish helpline for problem gamblers in 2017 had problems specifically with online casinos and online slots.³ For land-based forms of gambling, factors related to exposure can include the geographic distribution and density of gambling outlets; the physical characteristics of venues (including attractiveness, safety, and social acceptability of venue surroundings); the types of gambling products offered at venues; and the kinds of additional recreational facilities co-located with gambling venues. These concepts are discussed in detail in Section 2.2 Gambling Exposure.

There is evidence that gambling harm is more common in areas closer to land-based gambling venues. Further, research reveals an almost linear relationship between density of Electronic Gambling Machines (EGMs) and disadvantaged socioeconomic regions. Changes that may contribute to reduced harms include reducing the per capita density of EGMs and gambling outlets; restricting the distribution of gambling opportunities to a limited number of venues; restricting hours of operation; and limiting smoking and alcohol availability to gambling patrons.

1.1 ECONOMICS

MACROECONOMICS

Macroeconomics refers to the general analysis of economic variables within an *economy* or large group of individuals, as well as government policies that may affect them. Macroeconomic variables are aggregates, such as unemployment rates and economic growth. In the gambling literature, studies have examined the economic growth effects of casinos and their impacts on employment, wages, and tax revenues. Other types of legalized gambling, such as horse racing, typically have relatively minor impacts, and have not been the focus of substantial economic research.

Policy makers typically look to gambling as a public policy tool to create economic development, employment, and tax revenues. Several studies have examined the factors that explain the adoption of legalized gambling, particularly in the United States. There is a vast literature that has examined the adoption of state lotteries.⁴ The literature has shown that lotteries are typically designed in a way to maximize revenue to the state.⁵ Fiscal stress

appears to be a key determinant of casino adoption in the United States,⁶ and economic development related stress, such as unemployment, explains casino adoption elsewhere in the world.⁷

As legalized gambling spreads across North America and the rest of the world, our understanding of the macroeconomic impacts of gambling continues to change. In order to understand how the industry has developed recently, and its impact on regional economies, it is useful to have a foundation in the economics of lotteries and casinos. A paper by Clotfelter and Cook⁸ and another by Eadington⁹ provide such foundations for lotteries and casinos, respectively.

Casinos began their spread in the United States in the early 1990s. This spread was a catalyst for much of the early research on the economic impacts of casinos. Many of the early studies that shaped the literature and political debate focused on how casinos may “cannibalize” other industries, resulting in no net economic benefit in jurisdictions that adopt casinos.¹⁰⁻¹³ These studies presented strong conclusions about the

likely negative impacts of casinos, but did not provide any meaningful empirical evidence. Despite these warnings, governments continued to legalize casinos.

Given the spread of casinos, the academic research on their impacts is surprisingly sparse. Several studies have examined general or aggregate economic effects of casinos, including economic growth effects and effects on housing and business prices.¹⁴⁻¹⁶ The literature here suggests that casinos have at least a modestly positive impact on economic growth and property prices. This evidence contradicts many of the claims made by casino critics such as Goodman and Grinols.

Policy makers are often concerned with casinos' impacts on employment and wages. Again, on this issue, the literature is somewhat thin. The most comprehensive study to date in the United States suggests that casinos have a modestly positive impact on employment, especially in more rural counties.¹⁷ Recent evidence from Canada, however, suggests that any positive impacts from casinos on employment should be considered to be short-term.¹⁸ The impact of casinos on wage rates has been found to be insignificant at an aggregate level.¹⁷

Although most of the economics research on the gambling industry has focused on North America, studies have also examined other large jurisdictions, such as the United Kingdom and Australia.¹⁹⁻²¹ Obviously, gambling industries also operate in many other countries. However, in many European countries, for example, the brick-and-mortar industry is small and likely has a relatively insignificant economic impact. As a result, the research is much more limited than in other markets.

As noted above, one key reason policy makers look to casinos is because of fiscal stress. Whether casinos are state- or privately-owned, the government's take from casino revenues is a much higher percentage

than for most other consumer goods and services. As a result, politicians can expect positive revenue effects from casino legalization. However, some research has examined the net impact of casinos, given there is likely to be some substitution with other types of gambling, particularly lotteries.²² The findings from such analyses imply that casinos ultimately increase state-level tax revenue. However, one study that examined all U.S. states found that casinos might actually lead to a slight decline in total tax revenue.²³ Evidence has suggested that very low-tax jurisdictions could substantially increase casino tax rates without a large negative impact on casino employment.²⁴

It can be argued that lottery and casino taxes represent "optional" taxes, and that such taxes are a politically popular way to help delay or avoid government spending cuts or tax increases. However, there is a large amount of evidence from the lottery literature that the "lottery tax" falls disproportionately on the poor, as they spend a higher proportion of their incomes on the lottery.⁸ The same is typically assumed to be true of casino taxes, but there has yet to be good empirical evidence to confirm this.

The research on the harms associated with problematic gambling has come mostly from the psychology and public health perspectives. Little research has been done, however, on how problem gambling can affect a local economy. The exception is with respect to *social costs*, discussed in the Microeconomics section below.

Overall, the empirical evidence from the literature suggests that casinos likely have a modestly positive impact on their local and regional economies. There is little evidence to support the notion that casinos negatively affect the local economy, or that there is a substantially negative *substitution effect* with other local industries.

MICROECONOMICS

Microeconomics refers to the study of individual consumers or businesses, and of government policies that affect particular markets or industries. Many of the microeconomic studies on gambling relate to impacts of gambling on individuals, particularly the “social costs of gambling.” Many of the social costs of gambling are attributed to people with gambling problems, and include crime and bankruptcy. Aside from analyzing the social impacts of gambling, some studies from the 1990s attempted to estimate the monetary value of social costs. However, the studies that attempted to do this in the 1990s had many methodological problems.

The relationships between different types of gambling industries have received recent attention because of the development of online gambling technologies. Although the various types of gambling are often seen as substitutes, the relationships among gambling industries are not always consistent across jurisdictions. Nevertheless, the two key industries – casinos and lotteries – have been shown to be substitutes for each other.²⁵ There is still little evidence on how online gambling will affect the traditional casino industry.²⁶

Many of the problems associated with too much gambling are financial in nature. For example, there have been several studies that have examined state-level bankruptcy rates and how they have changed as a result of casino legalization. The findings from the literature suggest that casinos have contributed to modestly higher bankruptcy rates, particularly in counties nearest to casinos.²⁷ However, recent evidence suggests that this impact has diminished since the mid-1990s.²⁸

A much larger literature has examined the relationship between casinos and crime rates. Individuals who have a gambling problem are more likely to engage in crime to finance their gambling. However, whether the introduction of casinos leads to higher crime rates is

unclear. One comprehensive study from the United States found that casinos have a large effect on increasing crime.²⁹ However, other studies have found a much weaker relationship or no relationship at all.³⁰ How casinos affect crime appears to hinge on how the crime rate is defined. Studies that find casinos cause higher crime rates exclude tourists when calculating the population, while studies that find no crime effect of casinos usually include tourists in their population measure.³¹

Without question, individuals with a gambling disorder can cause harm to themselves and others. Perhaps the most interesting literature in the “economics of gambling” area has related to the social costs of gambling, which include the bankruptcy and crime issues discussed above, but also “costs” such as unpaid debts, decreased work productivity, treatment, and stress on personal relationships. Most researchers acknowledge a distinction between these “social impacts” and “economic impacts,” such as employment, wages, and economic growth.

The social costs of gambling are of critical importance because they typically represent the “downside”, to be considered along with economic benefits from casinos (e.g., employment and tax revenues). Since these are essential for policy makers to consider, researchers have attempted to provide monetary estimates of the social costs of gambling. One of the most successful attempts at this measurement estimated the annual social cost per pathological gambler (in 1997) at about \$9,600 USD.³² However, monetary estimates have varied greatly, likely due to the fact that different researchers approach the question using different methodologies.³³

Social cost studies have been controversial because there is little agreement on the definition and proper measurement of social costs.³⁴ The issue has been the

catalyst for several Canadian conferences (one in Whistler in 2000, and one in Banff in 2006) and research reports.^{1, 35, 36} One persistent difficulty with accurately estimating the social costs of gambling is comorbidity. Studies that have attempted to estimate the social costs of gambling typically do not acknowledge the issue, or if they do, have not found a way to partition social costs among the various problems a disordered gambler may experience.³⁷ Therefore, many social cost estimates are likely to over-value the actual costs attributable solely to gambling problems. Future research will likely examine the impacts of casinos on individuals and markets, as well as the effectiveness of policy changes related to legal casinos.

A different thread of research has focused on how individuals view money and gambling. Gambling can be seen differently than many other consumer goods, as some people develop financial stress as a result of their gambling. Research has examined how the price of gambling can affect its consumption.³⁸

1.2 SOCIO-POLITICAL ENVIRONMENT

Although people may embrace gambling once they are given the opportunity, commercial interests usually drive the introduction of gambling venues. There is little evidence that community members lobby for the introduction of gambling without the involvement of industry interests. Consistent with microeconomic processes, industry operators decide which products are supplied, and through effective marketing stimulate a demand for them. Consumers then sustain the supply by using the gambling products. Historically, even if state-owned companies did not promote gambling (as in Sweden from 1930-1980), demand for gambling remained strong. This happens even when some forms of gambling are outlawed.⁴⁴

Other papers have examined how people's views of money affect the harmful consumption of gambling.^{39, 40}

More recently, Richard Thaler's contributions to behavioural economics (e.g., see Thaler⁴¹) earned him the 2017 Nobel Prize. The result of this is likely to be increased attention to the concepts of behavioural economics, many of which have potentially interesting applications for understanding gambling and problematic gambling behaviours. In *Nudge*, Thaler and Sunstein⁴² use the example of casino *self-exclusion* programs (where people enter into an agreement with a gambling venue to ban themselves from entering for a specific time period). Although these programs have been adopted widely to promote responsible gambling (see Section 2.1.5), research on their effectiveness is limited. As Volberg has commented,⁴³ they could be promoted and monitored more aggressively so that policymakers, operators, and gamblers have more data to understand how well these programs are doing.

The adoption of gambling in a jurisdiction is the result of social, cultural, and political forces.⁴⁵ These forces influence whether gambling is considered a legitimate product, the extent to which gambling is made available, and the degree to which communities may oppose its introduction on the grounds of immorality or harm. These concepts are discussed in more detail in Section 3.1.3 Socio-Cultural Attitudes.

Politics play a crucial role in shaping the gambling environment. Bearing in mind differing political and economic contexts, decisions continue to be influenced by economic pressures, such as responding to international competition or the desire to retain on-shore revenue from online gambling facilities. This is especially the case when increasing numbers of licensed Internet

operators are attracting cross-border participants, and thereby fueling a global expansion of Internet gambling.

Political and economic systems are extremely important in shaping where and how commercial gambling will be offered, as well as which groups are most likely to be labelled as problem gamblers. Unlike other consumer products, legal gambling has been influenced by government decisions rather than economic need. Since the 1980s, some jurisdictions' reluctance to raise taxes has led to the rapid expansion of some forms of gambling to provide an alternative revenue stream. Like some other trends in wealth redistribution, the upward diffusion of wealth through commercial gambling has been accompanied by a downward diffusion of responsibility and victimization as people with fewer financial resources (that could buffer the adverse effects of gambling losses) are more likely to be labelled as problem gamblers.⁴⁶

When new forms of gambling become legal, they reach into society in ways that enhance their legitimacy and acceptance. This is not merely a matter of the de-stigmatization of a formerly "deviant" activity, or a new acceptance of gambling by individuals and communities. Legalization of new forms of gambling is accompanied by major institutional shifts; for example, gambling operations and oversight become part of the routine processes of government.

Some retail operators such as restaurants, hotels, and social clubs, may also come to depend on revenue from gambling to operate profitably. Finally, in some countries gambling industry executives and political action committees became key sources of funding for political parties, elections, and ballot initiatives.^{46, 47}

1.3 PUBLIC POLICY

Some governments have adopted a broad public health approach for developing gambling policy and regulation. This builds on the success of harm-reduction efforts for products such as alcohol and tobacco. Still, in many cases, the emphasis continues to be on the need to identify and treat people with gambling problems, rather than on the community or policy environment. To be effective, healthy public policy needs to be centered on promoting the health and well-being of the community as a whole, and be based primarily on prevention and reduction of harm. It should also be grounded in evidence, be reflective and responsive to public opinion, and foster public discourse to help improve the community's health and well-being.

Elected officials, governmental bodies, and/or regulations should all play a part in the promotion of evidence-based public policy related to gambling harm. Such policies

should include a broad statement of purpose or intent about the role of gambling within the public domain, and clear goals to prevent and reduce harm, and to support and treat those harmed by gambling. Policies should also include methods to monitor implementation and have a structure for and commitment to formal evaluation. Finally, good evidence-based public policies aim to address the scope of gambling activities, types of games, limits on availability, and jurisdictional authority.^{48, 49}

There are considerable challenges to developing healthy public policy, including the key issue of gambling revenue. A focus on generating revenue for both government and the private sector may hinder good policy development. The EU, for instance, has recognized this conflict and has enacted legislation that forbids monopolies that are plainly intended to generate revenues for the state. Monopolies are only accepted for public health reasons and for minimizing economic crime, etc.

Studies of gambling expenditure in different jurisdictions have shown that a disproportionately high percentage of overall gambling revenue comes from people with moderate to severe gambling problems.⁴⁹⁻⁵¹ The development of strong policies to reduce gambling harm is improved with sufficient separation from political, tax, and commercial influences. In practice, this could mean that policy development and regulation could be handled at a different level of government than gambling revenue management. In other words, decisions on how to allocate gambling revenues (to education, social services, charities, etc.) should be separate from decisions on how to regulate gambling operators.

A parallel issue relates to funding gambling research and concerns about whether funding comes from the same sources that rely on and/or benefit from gambling revenue. Some researchers suggest that receiving research funds from gambling industries is morally and ethically problematic,^{52, 53} particularly when considering that a disproportionate amount of gambling revenue comes from people with gambling problems.⁴⁹ Although a study by Miller and Michelson⁵⁴ did not find direct evidence of the gambling industry trying to influence or censor research results or how they are shared, researchers should carefully consider the ethical issues. Kim and colleagues⁵⁵ outline potential concerns:

- › Conflict of interest, including explicit or implicit pressure to provide results that favour continued access to resources such as funds, data, and access to gambling venues;
- › Suppression of research, specifically findings that are unfavourable to the gambling industry;
- › Risk to the researchers' reputations for being impartial;

- › Influence on how the problem or research question is framed, e.g., a focus on the person with gambling problems, rather than on structural characteristics of machines;
- › Restrictions on publishing, including lag times before researchers can make their results public; and,
- › A lack of disclosure of funding sources.

On the other hand, there may be benefits to working closely with the gambling industry. These could include stronger relationships to translate and act on research findings, and for access to participants and data, which increases the opportunity for on-site studies.⁵⁵ The Canadian Code of Ethics for Psychologists⁵⁶ provides guidance for any study: respect for dignity of persons (e.g., disclosure of funding sources in the informed consent); responsible caring (do benefits outweigh potential risks?); integrity in relationship (e.g., clearly outline terms of funding including any restrictions); and responsibility to society (e.g., freedom to disseminate, recognizing potential for misuse of results). Further, a number of international gambling researchers are working toward a common code of ethics for gambling researchers.⁵⁷

In some jurisdictions such as Canada, research funding flows through an intermediary body in order to reduce potential influence on the research; however, this may present challenges related to obscuring the ultimate source of the funds and potentially masking related ethical considerations. Making funding for gambling research and evaluation completely separate from gambling revenue generation and collection would support a comprehensive, policy-oriented research agenda. An example of such separation is the Australian Gambling Research Centre (AGRC) within the Australian Institute of Family Studies (an

independent statutory body). The AGRC is funded by the Australian Commonwealth Government, which receives no direct revenue from gambling.

The level of control of gambling operations also varies. In some regions, state-controlled gambling companies have a monopoly or near monopoly over the supply of some types of gambling products (e.g., Canada, Norway, Finland). Some politicians and regulators believe that state-controlled gambling companies with a monopoly are more effective in minimizing harmful gambling than private companies in a competitive market. This belief rests upon the assumption that a state-owned company will prioritize responsible gambling measures since it does not need to maximize profit. There are also some important lessons from the alcohol field, where the evidence suggests that monopolistic and/or government involvement in alcohol provision is associated with less harm to the public (e.g., Miller, Snowden, Birckmayer, and Hendrie;⁵⁸ Popova et al.;⁵⁹ and, Wagenaar and Holder⁶⁰).

If the government receives a substantial amount of revenue from gambling, however, it may constrain public policy that aims to reduce harm. This is especially likely if other tax revenue is limited. In contrast, there are also arguments for effective harm reduction through appropriate regulation of private gambling companies in a competitive market. While both positions may have merit, there is currently no research that supports either of them.⁶¹

Policies are likely to be more effective if they are based on credible evidence, and there are examples from around the world to support this view.^{21, 62, 63} Good policies would be based on comprehensive, rigorous, research evidence and evaluation to ensure that (a) measures introduced are effective, (b) benefits outweigh the costs, and (c) unintended consequences are minimized.

The evidence base itself would ideally be constructed from multiple data sources. The use of multiple data sources and methods of analysis enhances the validity and transferability of findings.⁶⁴ However, it is important to acknowledge that this type of rigorous evidence can be difficult to construct, and it is unlikely that any single piece of evidence will be sufficient. Further, even if such evidence existed, policy decisions may still be made with imperfect evidence.⁶²

The Australian Productivity Commission (APC) – an independent research agency that provides advice to governments on social, economic, and environmental issues – suggests that the level of evidence needed to support a policy initiative should be more akin to the balance of probability, such as required in civil law, rather than the criminal standard of proof ‘beyond all reasonable doubt’.²¹ The Commission has also argued that gambling harm-reduction policy should focus on two broad areas: (a) enhancing self-responsibility by strengthening individual capacity for informed choice, and (b) reducing the risk by adjusting features of the gambling environment that have been shown to be hazardous.²¹ Further, the commission emphasizes harm prevention/reduction and consumer protection for *all* gamblers.

Gainsbury and colleagues reviewed evidence related to best practice policies to recommend international harm minimization guidelines for land-based and Internet gambling.⁶⁵ Their recommendations include (1) imposing age limits (at least 18 years, preferably 21-25 years), for both land-based and Internet gambling; and, (2) licensing systems that require responsible gambling and consumer protection and encourage data sharing for both land-based and Internet gambling. They also found evidence of low-to-moderate effectiveness for pricing practices to minimize losses (e.g., bet size and limit setting) for both land-based and Internet gambling; taxation levels that

allow legitimate Internet gambling operators to compete with the illegal market; and, making brief intervention treatment for people with gambling problems available in person and online. Information was inconclusive around hours of operation, particularly for Internet gambling.

1.4 CULTURE OF SOCIAL RESPONSIBILITY

Corporations involved in marketing and selling gambling products with the potential to create harm have a responsibility to maintain standards of ethical practice. This means adopting a corporate philosophy that balances economic expansion and profits with socially-responsible practices that reduce harm. This includes manufacturers of products such as gaming machines and Internet-based gambling, and operators of venues and marketing companies.

Manufacturers are confronted with the dilemma of designing and constructing devices that are popular but do not lead to addiction. Research shows that sounds, lights, near misses, and losses disguised as wins are features of gaming products that serve to generate excitement and contribute to continued gambling.

Similarly, venue operators have a corporate responsibility to ensure that people are not offered incentives to gamble, or provided with alcohol

(which can impair judgment). They should also be responsible for identifying signs of excessive/harmful gambling and for intervening in a timely manner to prevent excessive losses. Although not established by law in some countries, there is a moral obligation for corporations and operators to maintain a duty of care to not exploit vulnerable people.

Overall, attitudes toward social responsibility depend on the local economic frameworks and political structures. Capitalist economies emphasize free-market competition and individual responsibilities, and are less likely to support regulatory policies that restrict economic expansion. Governments that favour free markets tend to support interventions that aim to manage harm by influencing demand (or consumer behaviour) rather than by changes to supply.⁴⁵ Similarly, they often promote responsible gambling and consumer protection through regulation and by funding treatment services. They focus on a culture of responsibility that promotes self-regulation and personal responsibility for decision making. A broader focus would include personal, corporate, and social responsibility.

1.5 RESPONSIBLE GAMBLING

The global expansion of gambling during the past three decades occurred with relatively little regard for effective consumer protection and responsible gambling safeguards. The primary legislative concerns were to keep gambling activities free from criminal involvement

and prevent access to children. Governments have also legislated and regulated other aspects of gambling and its promotion. During this period, community organizations, clinicians, and academics, among others, increasingly called for the introduction of measures to reduce gambling-related harm. Governments and gambling providers responded and have

implemented policies and practices with this intent.⁶⁶ Approaches include information and education campaigns, helpline and treatment services, self-exclusion programs, behavioural tracking, warning messages, venue staff training and intervention with at-risk gamblers, participant pre-commitment, and the modification of EGM parameters. In Scandinavia, two gambling companies have recently introduced fixed loss limits for their customers: Norsk Tipping (about CAD 3,100 per month) and the international company PAF (about CAD 44,500 per year).

Responsible gambling (RG) is a broad and somewhat vague term.⁶⁷ It is generally applied to aspects of gambling provision that are intended to help reduce harm to participants and the wider community. A particular approach to RG, the Reno Model, has had a major influence on measures taken by governments, regulators, and the gambling industries. A recent review concluded that although RG programmes have been widely introduced, their effectiveness and impact remains uncertain.⁶⁸ In large part this is because only a small number of methodologically sound evaluations have been conducted. Reviews of the wider prevention and RG literature^{51, 66} also conclude that the evidence base is thin. These reviews additionally conclude that the most commonly implemented measures appear to be those least likely to be effective. On a positive note, they add that most are likely to be effective to some extent and that multiple interventions sustained over time may work together and have greater impact.

The Reno Model was outlined in a series of articles published between 2004 and 2015.⁶⁹⁻⁷² The model rests on a number of assumptions. These include the view that gambling is an acceptable leisure or recreational activity, that a small number of people develop gambling problems, and that policies and practices are required to help people to make

informed choices about their gambling activities and avoid harm. Additionally, people who gamble, governments, gambling industries, and researchers are expected to collaborate to promote responsible gambling. Gamblers are seen as having responsibility for learning about gambling and participating in a way that they can afford. Gambling industries have a duty of care. This includes an expectation that they will provide information about gambling products and encourage gambling within affordable limits. It extends to an expectation that vulnerable citizens will not be exploited. Governments are considered to have responsibility for regulating some industry practices and support measures to help people with gambling problems and promote responsible gambling. The role of researchers is to evaluate RG initiatives to ensure that they are effective and don't undermine the enjoyment of people without gambling problems.

It remains unclear precisely what role the Reno Model played in the adoption of RG and other approaches to reduce gambling-related harm. However, it seems highly likely that the Reno Model influenced gambling legislation in many jurisdictions and, to varying degrees, has been widely adopted by gambling providers. It also appears to have strongly influenced the direction of research on gambling and problem gambling. The most commonly introduced responsible gambling measures include education and public awareness campaigns, counselling and other support services, and modification of gambling environments.

Recently the Reno Model has been criticised for a variety of reasons. The most comprehensive critique is provided by Hancock and Smith.⁷³ While acknowledging that the model helped raise awareness of the need to develop responsible gambling measures and contributed to their implementation, they concluded that it has major deficiencies. Shortcomings include its narrow focus,

which places emphasis on individual responsibility and people with gambling problems. They also believe the model has insufficient concern for public safety and deflects attention from harmful gambling policies, formats, and environments. The focus on people with gambling problems is also seen as a means to distract attention from a much wider spectrum of gambling-related harm. Hancock and Smith go further and maintain that the narrow emphasis has played into the hands of governments and the gambling industries that have a vested interest in maximising profits and taxation while giving the appearance of doing something to reduce harm. This assessment appears to be in keeping with reviews that conclude the most widely implemented measures are those least likely to be effective.

Hancock and Smith⁷³ call for responsible gambling to be reformulated with consumer protection and safety at the core. This RG-Consumer Protection approach has a wider focus that includes addressing structural, power, and vested interests. Additionally, it incorporates major public health principles, consumer protection, regulatory transparency, and independent research.

A number of people responded to Hancock and Smiths' critique of the Reno Model and their RG-Consumer protection alternative. Apart from the Reno Model

authors,⁷⁴ who maintain that "the facts of the Reno Model remain unassailable" and "endorse their original premises and postulates," these responses have generally agreed with their critique. Some endorsed the stronger consumer protection and public health emphasis that incorporated existing RG approaches.^{75, 76} Others were of the view that the reformulated approach does not go far enough in addressing gambling-related harm and that the Reno Model is either not redeemable or would require major transformation of its underlying assumptions.^{77, 78} Abbott⁷⁵ supported the call for greater emphasis on regulation and changing gambling products, industry operations, and practices, but maintained that reducing gambling exposure and participation through supply and demand reduction are unlikely to be sufficient on their own. In a number of jurisdictions with mature gambling markets, participation has dropped markedly but harm has plateaued. Further harm reduction may require interventions that address the wider spectrum of risk and protective factors including economic and social disparities, deprivation, employment, educational attainment, housing, and social capital. These factors also contribute to associated harms and morbidities including mental health and substance misuse disorders.

1.6 SOCIAL AND ECONOMIC IMPACTS

Impact studies are often carried out to assess the effectiveness of new policies or initiatives on a group of people or organizations. Impact studies typically focus on changes within the economic or social realms that occur as a result of new policies or initiatives. These studies can inform policy makers about the effects of new policies on people's everyday lives.

Hundreds of studies of the impacts of changes in the availability of gambling have been conducted internationally since the 1970s. However, many of these studies have been theoretically or methodologically flawed. A systematic review of socioeconomic impact studies identified 492 such studies, but found that only 293 were empirical investigations and only 51 of the studies could be rated as good or excellent.¹

Analysis of the 293 empirical investigations found that the most reliable positive impact of gambling across all forms is an increase in government revenue. Enhancement of public services (e.g., health, education, social security) is another fairly reliable impact of gambling introductions. The introduction of new gambling venues reliably increases infrastructure value, and often has beneficial impacts on other businesses in the local area. Overall employment may also be improved (as long as a significant portion of the patron base is from outside the local area). Gambling introductions reliably increase the entertainment and leisure options available to people. Finally, they can occasionally contribute to an increase in property values.

The main negative impact of the introduction of new gambling opportunities is an increase in problem gambling and its related harms (e.g., bankruptcy, divorce, suicide, treatment numbers). The bulk of these impacts tend to be non-monetary in nature, because only a minority of people with gambling problems seek or receive treatment or have involvement with police, child welfare, or employment agencies. The impact of gambling on crime is particularly difficult to disentangle and the results are mixed. Research is also somewhat mixed when it comes to understanding the impact of gambling introductions on socioeconomic inequality, quality of life, and attitudes toward gambling. Among the most predictable negative impacts of the introduction of gambling are increases in regulatory and infrastructure costs.

Different impacts are associated with different types of gambling.

- › Forms of gambling that generate the most revenue (e.g., casinos, EGMs) and that are most likely to be delivered by government (e.g., lotteries) have the most reliable positive impacts on government revenue and accompanying public services. Still, forms of gambling delivered by government tend to have more regulatory and administrative costs. There is not yet enough research to indicate whether this is true of online gambling as well.
- › Forms of gambling that are venue-based are the only gambling types with the potential to add infrastructure value and impose infrastructure costs. Destination casinos have the greatest potential to create broad economic benefits by bringing in revenue from outside the local area, while EGMs and lotteries have greater potential to negatively impact local businesses by diverting money from these businesses.
- › Continuous forms of gambling (e.g., casino table games, EGMs, Internet gambling) have greater potential to increase problem gambling, while casinos have the greatest potential to increase crime.
- › EGMs are the least likely to increase overall employment while horse racing and casinos are the forms most likely to increase employment.
- › EGMs and Internet gambling have the greatest potential for negatively affecting attitudes toward gambling.

Destination casinos have the greatest potential for improving the quality of life for impoverished communities, while non-destination casinos and EGMs have the greatest potential for decreasing quality of life.

The impacts of gambling also vary considerably between jurisdictions and depend on a number of factors. These factors include the extent to which gambling opportunities have increased, the type of gambling being introduced, the length of time that gambling has been legally available prior to the introduction

of additional or new forms, and whether patrons and revenues are locally derived or come from outside the jurisdiction. Other factors include the type and extent of gambling opportunities in neighbouring jurisdictions, the strength and effectiveness of policies and programs intended to mitigate the negative effects of gambling, baseline levels of community impoverishment, the level at which the impacts are examined, the length of time that impacts are evaluated, and how gambling revenues are ultimately distributed.

1.7 LOW-RISK LIMITS

The recent studies described in Section 5 Longitudinal Cohort Studies have extended findings from *cross-sectional* surveys (i.e., surveys where information is collected at one time-point only). They indicate that a variety of gambling participation measures predict future onset of at-risk and problem gambling behaviour. While non-gambling factors are also important, when considered together in multivariate analyses, gambling participation measures are usually the leading predictors. For example, in the New Zealand National Gambling Study (NGS) frequent gambling participation, especially in *continuous* forms of gambling including EGMs, card games, and sports betting, was a strong predictor of at-risk and problem gambling across the four *waves* (i.e., separate points in time when information is collected from the same people).⁷⁹ Additionally, higher overall gambling expenditure and longer average EGM sessions were important predictors, as were making regular short-term speculative investments and participation in gambling-type games not for money. While these two latter activities are not regarded as gambling for regulatory purposes, they contribute to the development of at-risk and problematic gambling. Additional risk factors included Māori and Pacific ethnicity, low

household income, high deprivation, exposure to multiple life events, high psychological distress, and cannabis use. Many of these factors, like the gambling participation measures, can be modified and thus present potential targets for harm prevention and reduction.

Given the consistent finding from longitudinal studies that intensity of gambling engagement per se is a strong predictor of future problems and harm, there is some interest in exploring whether or not 'low-risk' or 'safe' gambling limits can be identified. Many countries have developed and promoted low-risk alcohol consumption guidelines, though they vary across jurisdictions and include qualifications for particular population groups. Currie et al.⁸⁰ examined how relationships between gambling intensity and harm might be used to develop low-risk gambling limits. They used three measures – gambling frequency, gambling expenditure, and percentage of household income spent on gambling – to develop risk thresholds. These thresholds were subsequently replicated in a separate study.⁸¹ Other investigators have also identified thresholds. They differ, to varying degrees, from those in the initial Canadian studies.⁸² A limitation of these studies is that all used cross-sectional data.

Recently, Currie et al.⁸² derived a new set of low-risk limits using data from two Canadian longitudinal gambling studies.^{83, 84} The findings from the two studies were very similar. The optimal low-risk limits were approximately \$75 CAN gambling expenditure per month, 1.7% of household income spent on gambling, and gambling eight times per month or less. Adults who exceeded any of the low-risk limits were four times more likely to experience harm in future. The optimal limits in this study were higher than those obtained from the investigator's earlier cross-sectional studies and their predictive power was lower. Together, the three factors explained less than 20% of the harm variance.

While the foregoing research has contributed to understanding relationships between gambling participation and harm, there are significant challenges in identifying low-risk guidelines or limits. In contrast to alcohol, there is no standard gambling unit. As mentioned, there is considerable variation between the 'toxicity' of various gambling forms. Gambling forms and settings defy simple classification.⁸⁵ Including the level of participation in particular gambling forms may be required to more accurately predict future harm. Statistical analyses have found that both the type of gambling and general gambling measures uniquely predict at-risk and problem gambling behaviour.^{79, 86, 87} As mentioned, while participation measures are generally the dominant predictors of harm, various other non-gambling factors also contribute, in some cases strongly so. It may be that different thresholds apply to particular gambling forms and to different population groups including people with past gambling problems, and other high-risk groups such as people experiencing mental health and addiction disorders, youth, indigenous, and some migrant groups.

Currently, when compared to the alcohol field, assessing links between gambling 'consumption' and the wide spectrum of gambling related harm is in its infancy. In particular, there is a lack of research examining harms that accumulate and persist over long time-spans. Without this knowledge it would seem premature to advocate the endorsement of low-risk guidelines. Additionally, the concept of guidelines implies that there are safe or relatively safe gambling levels and, perhaps, that it is the responsibility of participants to know and adhere to them. These beliefs are central to the Reno Model of responsible gambling as described in Section 2.1.5 Responsible Gambling. This model has been contested on the grounds that its emphasis on individual responsibility takes the focus away from the responsibilities of the gambling industries and governments to prevent harm and exercise a duty of care. Regardless of these considerations, including the possibility that there are no safe or low-risk limits for many gambling forms and population groups, research investigating limits is addressing a neglected area and helping to increase our understanding of the risks associated with various gambling activities and participation intensities.

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