Tampere University

KALLE LIND

Problem Gambling and Criminal Behavior

Perspectives on Comorbidities and
Social Disadvantage

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ACADEMIC DISSERTATION
To be presented, with the permission of
the Faculty of Social Sciences
of Tampere University,
for public discussion in the Lecture Room B1096
of the Pinni B, Kanslerinrinne 1, Tampere,
on 28 October 2022, at 12 o'clock.

ACADEMIC DISSERTATION
Tampere University, Faculty of Social Sciences
Finland

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The originality of this thesis has been checked using the Turnitin OriginalityCheck service.

ACKNOWLEDGEMENTS

ABSTRACT

While gambling is a harmless and popular pastime for most people, as a habitual activity it also has the potential to cause harm to the gamblers themselves and their affected others. These gambling harms are not static but vary in terms of intensity and duration. Such negative consequences can affect several different life-domains, and they may include financial problems, emotional distress, disrupted relationships, cultural harms, intergenerational harms, decrements in health, reduced performance at work or studies, or criminal behavior. Comorbidity between problem gambling, mental health problems, and other addictions as well as the connection between problem gambling and social disadvantage on various measures have been confirmed by previous studies. Problem gambling has been recognized as a criminogenic factor, and it is highly prevalent among incarcerated populations. Criminogenic problem gambling refers to a situation where problem gambling and the related financial distress escalate to criminal behavior, typically to income-generating crime such as fraud and embezzlement. Criminal harm has been suggested to be a late-stage gambling harm, which occurs together with long-standing and untreated problem gambling as gamblers run out of legal financial options. Furthermore, previous studies indicate that a more general association also exists between problem gambling and non-gambling related crime in a population level.

Not only is the gambling participation rate very high in Finland, but gambling has also had an exceptional position in Finland's culture, society, and everyday life for decades. At the same time, 2.5% of gamblers are estimated to account for 50% of the total gambling expenditure. The latest population survey indicates that the prevalence of problem gambling is about 3% of the population. The core regulative framework, the recently reformed Lotteries Act, underscores minimization and prevention of gambling-related economic, health-related, and social harms, including criminal activity. In this context, this dissertation addresses the connection between problem gambling and criminal behavior through 1) data derived from documents produced by the police on 55 problem gambling-related cases, 2) screening data (N

= 1,573) from a national problem gambling support program, 3) pilot survey data (n = 96) collected at two Finnish prisons, and 4) gambling-related population survey data (n = 7,186) combined with register-based variables on convictions and social disadvantage. Through qualitative document analysis this study explores patterns and mechanisms of problem gambling-related crime reported to the police. Logistic regression is utilized to find predictors of problem gambling-related stealing and cheating among help-seeking problem gamblers. Furthermore, this study explores the prevalence of probable problem gambling (measured using the Brief Biosocial Gambling Screen), the need for support, and support preferences in prison environment. Finally, logistic regression models were run to explore the general association between problem gambling severity, socioeconomic disadvantage, and having a conviction.

Most of the problem gambling-related cases found from the police information system were nonviolent property crimes that were committed at home or at the workplace. In most cases the events were preceded by severe financial problems, the emergence of suitable opportunities to commit a crime and coexisting issues of life-control, such as depression, relationship problems, and substance use. The criminal incidents were classified in three categories: identity theft, unauthorized access, and violent outburst. The crime aftermath consisted of the psychologically distressing process of hiding the trails and revival through getting caught. Reportedly, the main motivation for the crimes was to continue gambling, chase losses, or hide the extent of the individual's problem gambling from their affected others.

Consistent with previous literature, the results reveal that among help-seeking problem gamblers, being young and having low income and low education predicted gambling-related stealing and cheating. Furthermore, as expected, a long duration of gambling problems also predicted cheating and stealing. Depressive symptoms and having a negative perception on one's financial situation were also associated to problem gambling-related stealing or cheating. Gender, starting age of gambling, and comorbid substance use were not found to be statistically significant predictors of criminogenic problem gambling. Overall, 37.6% of the screened attendees reported having cheated or stolen to fund their gambling.

According to this study, the prevalence of probable problem gambling is relatively high among prisoners. Past-year pre-conviction prevalence of probable problem gambling was about 16% and past-year prevalence was 15%. One-third of the survey respondents who were sentenced for a property crime, financial crime, or robbery were probable problem gamblers. A majority of the participants who reported that their main crime was gambling-related scored as probable problem gamblers. Of all the respondents, one in four reported an interest in receiving problem gambling-related support. Group support was the most preferred type of support, followed by a personal conversation with a prison staff.

Of the Gambling Harms Survey respondents, 2.1% had been convicted of at least one crime during the past five years and had received a prison sentence, community service, or probation order. Criminal convictions were more common among respondents with problem or pathological gambling (8.8%) compared to at-risk gambling respondents (3.5%), to recreational gamblers (2.0%), and to non-gamblers (1.2%). However, in the models with gender, receiving basic social assistance and education included the gambling variables did not remain statistically significant. The findings suggest that especially receiving basic social assistance is strongly associated with both gambling severity and having a conviction.

The results of the study are further discussed with the pathways model by Blaszczynski and Nower, as well as with mainstream theories of criminology, especially with the general strain theory by Agnew and the routine activities theory by Felson. This study concludes that crime prevention requires early interventions for the financial chaos produced or worsened by problem gambling. A comprehensive selection of support for a variety of problems other than personal financial difficulties is needed to minimize the risk of problem gambling-related criminal activity. In addition, the study implies that social policy, ethically sustainable gambling policy, and criminal policy should be closely intertwined in the spirit of welfare state's mission to reduce and to prevent social exclusion and social disadvantage.

Keywords: Gambling; Problem gambling; Criminal behavior; Social disadvantage

TIIVISTELMÄ

Rahapelaaminen on suosittu ajanviete, jolla on ollut suomalaisessa kulttuurissa sangen vahva asema vuosikymmenten ajan. Sellaisenaan rahapelaaminen on valtaosalle pelaajista harmitonta toimintaa. Rahapelaaminen voi kuitenkin aiheuttaa haittoja paitsi pelaajalle itselleen, myös hänen läheisilleen, yhteisölle ja laajemmin ajateltuna koko yhteiskunnalle. Nämä haitat eivät ole staattisia, vaan vaihtelevat kestoltaan ja intensiteetiltään. Ne voivat vaikuttaa haitallisesti useisiin elämän eri osa-alueisiin, kuten talouteen, psyykkiseen ja emotionaaliseen kuormitukseen, ihmissuhteisiin, terveyteen, opiskeluun ja työelämään. Rahapelihaitat voivat olla luonteeltaan myös kulttuurisia ja ylisukupolvisia. Yhdeksi rahapelihaitaksi määritellään rahapeliongelmiin liittyvä rikollisuus. Rikollisuuden ehkäisy mainitaan myös Arpajaislaissa yhdeksi monopolijärjestelmän perusteeksi.

Rahapeliongelmista kärsii tuoreimpien väestökyselyiden mukaan noin kolme prosenttia väestöstä. Rahapelikulutus jakautuu äärimmäisen epätasaisesti ja onkin arvioitu, että 2,5 prosenttia pelaajista on vastuussa noin puolesta kaikesta pelatusta rahasta. Aikaisemmissa tutkimuksissa on havaittu korkea yhteisesiintyvyys useiden muiden riippuvuuksien, mielenterveyden haasteiden, sosiaalisen huono-osaisuuden ja rahapeliongelmien kanssa. Rahapeliongelmien on lisäksi todettu olevan huomattavasti yleisempiä vankipopulaatioissa, verrattuna väestöön keskimäärin. Rahapelaaminen on aikaisemmissa tutkimuksissa tunnistettu kriminogeeniseksi tekijäksi. Ongelmapelaamiseen liittyvän rikollisuuden on todettu olevan viimeinen ratkaisu tilanteessa, jossa suuren rahapelikulutuksen aiheuttama taloudellinen paine on kasvanut liian suureksi. Suurin osa ongelmapelaamiseen liittyvästä rikollisuudesta onkin kansainvälisten tutkimusten mukaan tulojen hankkimiseen tähtäävää ja tapahtuu vasta, kun muut vaihtoehdot loppuvat. Suomessa rahapeliongelmien ja rikollisuuden välistä suhdetta ei tätä ennen ollut tutkittu.

Tätä taustaa vasten tässä väitöskirjassa tutkitaan rahapeliongelmien ja rikollisuuden välisiä yhteyksiä suomalaisessa kontekstissa. Tutkimus toteutettiin tarkastelemalla: 1)

poliisiasian tietojärjestelmästä rahapelaamiseen liittyvillä hakusanoilla löydettyä 55 epäiltyä rikosta ja näiden tapausten esitutkintamateriaaleja, 2) rahapelaamisensa kanssa ongelmia kokeville suunnatun Peli poikki -ohjelman seulontadataa (n=1573), 3) kahdessa vankilassa toteutetussa pilottikyselyssä kerättyä aineistoa (n=96) ja 4) Terveyden ja hyvinvoinnin laitoksen keräämää rahapeliaiheista väestökyselydataa (n=7186), johon yhdistettiin sosiaaliseen tilanteeseen ja rikostuomioihin liittyviä muuttujia Tilastokeskuksen rekisteristä. Laadullisen dokumenttianalyysin kautta poliisin tietoon tulleista rikosepäilyistä tutkimuksessa pyrittiin ensimmäisessä osatutkimuksessa hahmottamaan rahapeliongelmien ja rikollisuuden välisiä mekanismeja. Toisessa osa-artikkelissa pyrittiin logistisen regressioanalyysin avulla löytämään rahapeliongelmiin liittyvää varastamista ja pelirahan huijaamista ennustavia taustamuuttujia avun piiriin hakeutuneiden rahapeliongelmia kokeneiden henkilöiden keskuudessa. Kolmannessa osatutkimuksessa toteutetun vankilapilotin tarkoituksena oli tutkia todennäköisten rahapeliongelmien prevalenssia vankipopulaatiossa, hyödyntäen lyhyttä, kolmen kysymyksen Brief Biosocial Gambling Screen -mittaria. Samalla kartoitettiin vankien tarpeita erilaisille rahapeliongelmiin liittyville tuen muodoille. Lopulta, neljännessä artikkelissa tarkasteltiin logististen regressiomallien kautta yleisempiä yhteyksiä rahapelaamisen vakavuuden, sosiaalisen huono-osaisuuden ja rikostuomioiden välillä väestötasolla.

Poliisin tietojärjestelmästä rahapeliongelmiin liittyvillä hakusanoilla löydetyt rikosepäilyt olivat yleisimmin väkivallattomia omaisuusrikoksia, joiden tapahtumaympäristö oli epäillyn oma koti tai työpaikka. Laadullisen dokumenttianalyysin perusteella näiden tapausten taustalla oli tyypillisesti varsin vakavia taloudellisia ongelmia, erilaisia arjessa ilmeneviä mahdollisuuksia rikokseen ja yhteisesiintyviä elämänhallintaan vaikuttavia ongelmia, kuten masennusoireita, ihmissuhdeongelmia ja runsasta päihteidenkäyttöä. Itse rikokset luokiteltiin identiteettivarkauksiksi, käytettävissä olevien varojen luvattomaksi käytöksi ja väkivaltaisiksi purkauksiksi. Epäiltyjen rikosten motiivina oli rahapelaamisen jatkaminen, sen aiheuttamien rahallisten tappioiden kiinnikurominen ja rahapeliongelman laajuuden peittäminen lähimmäisiltä. Epäillyt kuvasivat jopa vuosia jatkunutta rahapeliongelman ja rikollisen toiminnan peittelyä läheisiltä ensimmäisen rikoksen jälkeen. Lopulta, kiinnijäämisen jälkeen monet epäillyt kertoivat kuulusteluissa helpotuksestaan sekä halustaan saada tukea rahapeliongelmiinsa.

Peli poikki -ohjelmaan hakeutuneista henkilöistä 37.6% raportoi huijanneensa tai varastaneensa rahaa jatkaakseen rahapelaamistaan. Logistiset regressiomallit antoivat viitteitä siitä, että nuori ikä, matala tulotaso, matala koulutus, rahapeliongelman pitkä kesto, masennusoireet sekä toivoton kokemus omasta taloudellisesta tilanteesta olivat yhteydessä rahapelaamiseen liittyvään pelirahan varastamiseen ja huijaamiseen. Sukupuoli, rahapelaamisen aloittamisikä tai yhteisesiintyvä päihteidenkäyttö eivät tässä osatutkimuksessa olleet yhteydessä pelirahan varastamiseen tai huijaamiseen.

Tutkituissa kahdessa vankilassa todennäköisen rahapeliongelman esiintyvyyden havaittiin olevan verrattain korkea. Tuomiota edeltävän 12 kuukauden ajanjaksolla mitattuna 16 % tutkimukseen osallistuneista vangeista oli todennäköinen rahapeliongelma. Vastaamista edeltävän 12 kuukauden aikajänteellä todennäköinen rahapeliongelma oli 15 % tutkimukseen osallistuneista vangeista. Kolmasosalla niistä kyselyyn vastanneista vangeista, jotka oli tuomittu omaisuus- tai talousrikoksesta tai ryöstöstä, havaittiin todennäköinen rahapeliongelma. Kaikista vastaajista neljännes raportoi halukkuudestaan saada tukea rahapeliongelmiin. Suosituimmaksi tukimuodoiksi osoittautuivat ryhmämuotoinen tuki ja henkilökohtainen keskustelu vankilan henkilökunnan kanssa.

Rahapelikyselyyn vastanneista 2.1% oli saanut vähintään yhden ehdolliseen tai ehdottomaan vankilatuomioon tai yhdyskuntapalveluun johtaneen rikostuomion viiden edeltävän vuoden aikana. Rikostuomiot olivat yleisempiä (8.8%) henkilöillä, joilla oli rahapeliongelma tai -riippuvuus, verrattuna riskitasolla pelaaviin (3.5%), viihdepelaajiin (2.0%) ja heihin, jotka eivät pelaa ollenkaan (1.2%). Rahapeliongelman vakavuuden ja rikostuomioiden välistä yhteyttä tarkasteltiin logististen regressiomallien avulla. Malleissa, joihin otettiin mukaan sukupuoli, perustoimeentulotuen saaminen ja koulutus, rahapelaamisen vakavuuden ja rikostuomioiden välinen suhde muuttui tilastollisesti ei-merkitseväksi. Osatutkimuksen tulokset viittaavat siihen, että erityisesti perustoimeentulotuen saaminen on yhteydessä sekä rikostuomioihin että rahapelaamisen vakavuuteen.

Tutkimuksen tuloksia keskustelutetaan paitsi Blaszczynskin ja Nowerin kehittämän rahapelaamisen polkumallin, myös keskeisten kriminologian teorioiden kanssa. Näistä rahapeliongelmien ja rikollisuuden välistä suhdetta pohditaan erityisesti Robert Agnew'n yleisen paineteorian ja Marcus Felsonin rutiiniaktiviteettiteorian

valossa. Tämä väitöskirjatutkimus antaa viiteitä siitä, että rahapeliongelmiin liittyvän rikollisuuden ehkäisy edellyttää paitsi varhaista puuttumista rahapelaamisen tuottamaan tai sen pahentamaan taloudelliseen kaaokseen, myös laaja-alaista psykososiaalista tukea kuormittavaan elämäntilanteeseen sosiaalisen huono-osaisuuden vähentämiseksi ja ehkäisemiseksi. Tutkimustulokset tukevat eettisesti kestävän rahapelipolitiikan, sosiaalipolitiikan ja kriminaalipolitiikan kytkemistä saumattomasti toisiinsa.

Avainsanat: Rahapelaaminen; Rahapeliongelma; Rikollisuus; Sosiaalinen huono-osaisuus

CONTENTS

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LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following publications:

I   Lind, K., Kääriäinen, J., & Kuoppamäki, S. M. (2015). From Problem Gambling to Crime? Findings from the Finnish National Police Information System. Journal of Gambling Issues, 30, 98–123. https://doi.org/10.4309/jgi.2015.30.10

II   Lind, K., & Kääriäinen, J. T. (2018). Cheating and Stealing to Finance Gambling: Analysis of Screening Data from a Problem Gambling Self-help Program. Journal of Gambling Issues, 39, 235–257. https://doi.org/10.4309/jgi.2018.39.9

III   Lind, K., Salonen, A. H., Järvinen-Tassopoulos, J., Alho, H., & Castrén, S. (2019). Problem Gambling and Support Preferences among Finnish Prisoners: a Pilot Study in an Adult Correctional Population. International Journal of Prisoner Health, 15, 316–331. https://doi.org/10.1108/IJPH-07-2018-0041.

IV   Lind, K., Hellman, M., Obstbaum, Y., & Salonen, A. H. (2021). Associations between Gambling Severity and Criminal Convictions: Implications for the Welfare State. Addiction Research & Theory, 29(6), 519–530. https://doi.org/10.1080/16066359.2021.1902995

In the main text, these publications are referred to by their Roman numerals.

1 INTRODUCTION

Gambling is defined as wagering money over a random or uncertain outcome to win money (Walker et al. 2008; Williams et al. 2017). As such, gambling has been a popular pastime throughout human history, but attitudes towards gambling as a socio-cultural phenomenon have varied over time and in different regimes. Due to the liberalization of values and more relaxed regulations in many industrialized countries, the rise of consumption culture, and other factors such as cheap credits, gambling has become an increasingly important segment of the leisure consumption and entertainment industry (see e.g., Banks 2017; Adams & Rossen 2012). The intensification of online gambling opportunities has also made gambling more easily accessible globally and has vastly increased the selection of available games and gambling providers and has merged different game types (Banks 2017; Reith 2007).

In many jurisdictions throughout the industrialized world, gambling revenue forms an important source of income for commercial companies and states alike. Instead of being morally disapproved, gambling is increasingly seen as a potential source of tax revenue or a resource for good causes (Sulkunen et al. 2018). The legal gambling market was estimated to have produced over EUR 400 billion in 2019 globally, and the Finnish gambling market was estimated to generate EUR 1.6 billion of gross win in 2020. In 2022, the offshore market is estimated to account for 20% of the total market at EUR 393 million. (H2 Gambling Capital 2021.) Much of the offshore market in Finland consists of games provided by Ålands Penningautomatförening (Paf), which has the right to provide gambling on the Åland islands, online, and on Baltic cruise ships. This right is granted by the Finnish Lotteries Act and by the regional parliament of Åland.

A widely used indicator for the gambling market is gross gambling revenue per capita, which is calculated using the gambling operators' gambling profits. To calculate the gross gambling revenue, winnings paid out to gamblers are subtracted from the total sum of bets placed. In Finland, gross gambling revenue is estimated to be about EUR 430 per capita (H2 Gambling Capital 2021). As these estimates are based only on legal gambling providers, such figures are only directional.

Gambling is still a widely accepted and popular activity in Finland, partly because of the active politically driven normalization of gambling for decades (Matilainen 2017). Finland has an exceptional gambling environment, as gambling is integrated into everyday environments such as grocery stores and gas stations. Possibly due to these factors, the attitudes towards gambling have been positive for a considerably long time. In the 2019 population survey (Salonen et al. 2020), the prevalence of gambling participation was very high: 78.4% (women: 74.5%, men: 82.2%) had gambled during the previous year. As a population estimate, this means 2,917,000 people living in mainland Finland. For example, one third of Finns have played electronic gambling machines (EGMs) during the previous year. However, the overall gambling consumption cumulates to a small group of active players: in a 2019 survey 2.5% of the players were estimated to be responsible for 50% of the total losses in Finland.

Despite its' profit potential for the governments, gambling is also considered as a potentially harmful and addictive activity (Banks 2017). It has a long history of regulation, and it has been treated as a sin, a vice, and a threat to public order in various regimes during history (see Kingma 2008). From the point of view of traditional protestant ethic, for example, gambling has been seen as a threat to the very foundations of stability: not only to self-discipline but also to rational investments of time and money through wage labor (Reith 2003). Until the early twentieth century, gambling was also a criminal offence in Finland and only goods lotteries were allowed. During the twentieth century, however, changes in socio-economic moral in the industrialized countries have led to a liberalization of gambling legislation (see e.g., Banks 2017; Cosgrave 2006). In this context, the aim of gambling regulation has been manifested as consumer protection and the prevention of criminal activity (Gainsbury et al. 2013). Lately, gambling regulation has also focused on the problem behavior and its consequences.

Finland has a state-owned monopoly on gambling. Throughout the history of independent Finland (since 1917), the state and non-governmental organizations have funded their activities and "public good" using profits from gambling and wagering. The Lotteries Act (1047/2001) defines that the purpose of the Finnish gambling system is to reduce the social, financial, and health-related harm caused by gambling, including criminal activity. Marketing of gambling products is regulated by the Lotteries Act. More generally, the principals of Consumer Protection Act also apply to gambling. For several decades the gambling revenue has been used to fund civil society, science, culture, sports, and various social and welfare associations. In

recent years, the revenues have also been directed to the monitoring of gambling harms and offering support provision. The extent of these designated funds has led to a point where a relatively large portion of functions of the civil society and research are dependent on gambling revenue (Selin et al. 2019). To justify the gambling monopoly, the European Union membership obligates Finland to restrict gambling operation and to prevent problem gambling and to protect minors. The Court of Justice of the European Union's case-law states that gambling profits on the purposes of public good may only be incidental, or a favorable consequence of the gambling monopoly but not the sole purpose (see e.g., C-275/92 Schindler; C-67/98 Zenatti; C179/14 EC v Hungary).

In accordance with current consensus that problem gambling is a public health issue (Wardle et al. 2021), problem gambling is treated from a public health perspective in Finnish decision-making and public policy. According to a large body of research (see Langham et al. 2015), problem gambling can lead to several harms in different life-domains that vary in intensity and duration. In a taxonomy by Langham et al. (2015), these negative consequences of gambling include financial harm, relationship disruption, conflict, breakdown, emotional or psychological distress, decrements to health, cultural harm, reduced performance at work or study, criminal activity, or life course or intergenerational harms. Furthermore, most of such harms are generally experienced by people who are low-risk gamblers, and this phenomenon is known as the prevention paradox (Browne & Rockloff 2018). This tendency is because, on the population level, such individuals are more prevalent than high-risk gamblers. Low-risk gamblers seem to frequently experience individual harms, but according to Browne et al. (2020) it only applies to financial, emotional/psychological harms, and work/study harms. The health, relationship, and social deviance harms such as criminal activity cumulate heavily in high-risk and problem gamblers. Gambling causes harms not only for gamblers themselves, but it also negatively affects other people in their lives. Various studies confirm that gambling problems are more prevalent among socially disadvantaged groups (e.g., Latvala et al. 2021), and the gambling harms seem to have more severe consequences in these deprived groups.

Gambling harms include the crime potential induced by problem gambling, which typically involves income-producing illegal acts and property crimes, such as fraud, embezzlement, and theft. According to previous international studies, the prevalence of gambling-related criminal activity among problem gamblers ranges (see Adolphe et al. 2019 for review) from 7.2% (Arthur et al. 2014) to 89.3% (Meyer & Stadler

1999). These criminal acts are generally instrumental demonstrations of desperation that typically stem from severe financial losses as an attempt to recover the situation and win back losses or to gain resources to continue gambling (Banks & Waugh 2019; Crofts 2003; Brown 1987). According to various studies (Turner et al. 2017; Banks et al. 2020), the prevalence of problem gambling is notably higher in prison populations across the world.

In Finland, associations between problem gambling and criminal behavior are largely uncharted. Therefore, this dissertation aims to explore the complex relationship between problem gambling and criminal behavior in the Finnish context, where gambling has been a visible part of everyday life for decades. Due to the explorative nature of this study, data triangulation is crucial. This research approaches the link between problem gambling and crime from three different perspectives: offenders, help-seeking problem gamblers, and the general population. First, the purpose of the study is to discover what kind of problem gambling-related criminal activity is reported to the police and what kind of mechanisms are described in the documents of these cases. Second, this dissertation explores the extent to which help-seeking problem gamblers report criminal activity as a consequence of their gambling and what socio-demographic and gambling-related background factors are associated with criminal activity among help-seeking problem gamblers. Third, the study explores the prevalence of problem gambling among a sample of Finnish prisoners and their need for problem gambling support. Finally, the aim of this dissertation is to discover whether a general association exists between gambling severity, social disadvantage, and criminal convictions on a population level. This summary further discusses these sub-studies through the sociological theories of gambling and crime.

This dissertation consists of four sub-studies. Article I analyzes problem gambling-related cases (n = 55) reported to the police from 2011 using preliminary investigation documents and crime reports. Using qualitative document analysis, the study explores the factors leading to the criminal incident, the elements of the crime itself, and the aftermath of the crime. The aim is to discover patterns and mechanisms of how problem gambling and criminal activity overlap. Article II analyzes screening data (n=1573) from a Finnish problem gambling self-help program to determine how often individuals have cheated or stolen to fund their gambling, and it also explores factors related to criminogenic problem gambling. Logistic regression was applied to study the associations between problem gambling and both reported cheating and stealing. Article III studies problem gambling

prevalence, substance use, the type of main crime, and the need for problem gambling support among a sample of Finnish prisoners in a pilot study. Article IV explores the connection between gambling severity, social disadvantage, and criminal convictions using data from the "Gambling Harms Survey" in combination with register-based variables drawn from Statistics Finland.

2 THEORETICAL FRAMEWORK

2.1 GAMBLING AS A SOCIOLOGICAL AND SOCIAL PROBLEM

2.1.1 Games and gambling in sociology: definitions

Playing games is an ancient activity (McMillen 2005; Schwartz 2006). Archaeologists have found primitive dices made of bone dating back from 3500 BC. Games of chance have also been adapted from and used for religious purposes (Grunfeld 2008; Reith 1999). Furthermore, references to games of chance are present in ancient literature and sacred texts. For cultural historian Johan Huitzinga (1950), play is an essential part of humanity (for him, Homo ludens), and accordingly, humans have gamified random events considerably early in history: for Huitzinga, games are the foundation of human civilization and the starting point of both culture and society. While sheer games of chance entail a complete immersion in unpredictable randomness, games involving the element of skill are based in attempts to tame randomness of chance through calculation and strategy. For sociologist Roger Caillois (1957), all gaming is essentially voluntary activity which produces joy and satisfaction. Using this definition, gambling is joyful risk-taking under more or less unpredictable circumstances. Caillois defines that all games consist of six elements: they are not compulsory, they are separate from the mundane (which gambling does not seem to be, as discussed further), their result is uncertain, they are unproductive and governed by a set of rules, and they contain make-believe. For Caillois, gambling gives everyone an equal opportunity to express themselves in front of destiny.

As summarised by Marionneau (2015), academic interest in gambling is roughly divided to non-problem and problematic approaches. Each of these approaches contains a structural and an individual level, which are further divided into four categories of research: bio-psychological, economic, public health, and functionalist. Individual and problem centric gambling studies are typically bio-psychological. This psychologized and medicalized stance towards gambling has likely been the most common approach in recent decades, focusing mainly on the neuropsychological

and impulse control-related mechanisms behind problem gambling. Individual and non-problematic gambling studies are typically economic in nature, and they concentrate on gambling as a leisure consumption from the point of view of supply and demand. On the structural level, problem-centric gambling studies are considered as public health approaches where the main focus is on the statistical prevalence of gambling and problem gambling. Finally, non-problem related gambling studies are defined as functionalist: they concentrate on the positive input of gambling to the dynamics of society and treat gambling as a socio-cultural phenomenon. Most of such studies are theoretic and qualitative in nature. While most of the classic gambling studies are classified to this category, functionalist approaches are scarce in recent studies.

Moreover, sociologists have given various explanations to gambling from different approaches, from macro level to micro level (see Aasved 2003). International studies have viewed gambling from different perspectives ranging from ethnographic and anthropological studies on gambling subcultures to gambling provision and political context of gambling. In the Finnish context, however, sociological studies have been largely from the public health perspective. The following passage briefly explores both macro- and micro-sociological conceptualizations on gambling (see Binde 2009).

Escape theoretical explanations (e.g., Wood & Griffiths 2007; Schull 2002; Downs et al. 1976) state that gambling is not linked to a socioeconomic position in society, but rather, it is one profitable form of leisure consumption independent of social status. There is a psychological demand to fight boredom and a monotonous life, even alienation and anomie, and as a solution to this pursuit, gambling providers supply individuals an effective treatment. Gambling serves the purpose of relieving the strains of mundane life, which can exist independent from social status. Instead of addressing social balance, in this theory, gambling is considered as a socio-culturally evolved activity that is used as a tool to seek internal balance. The psychological thrill and the feeling of flow (see Csikszentmihalyi 1990) create an alternate state of existence to the mundane and ordinary (in comparison to traditional theories of gambling).

Aside from a cultured form of psychological satisfaction, gambling is also more generally viewed as socially rewarding. Gambling can also be viewed as a subculture, where different rules from everyday life apply. Such views emphasize the meaning

of bonding and gaining social prestige through gambling. For example, belonging to a group of gamblers might become so meaningful for the gambler, even to the extent where such group membership compensates for losing significant sums of money (Rosecrance 1986; Zola 1962). Losing bets might even be considered as the cost for membership (Allen 2006) or as a fee for learning the valued "skill." This process further intensifies if the gambler feels detached from the values and lifestyles of the hegemonic culture. The gambling venue and other gamblers can provide a safe haven for marginalized groups or an alternative source of possible income. The casino can also become a considerably important element regarding group dynamics: the casino forms a common enemy, and it is possible that playing against the house (i.e., trying to beat the system) is a shared objective that functions as a social glue.

From the viewpoint of symbolic interactionism, gambling forms a separate social world where meanings are interpreted socially: gambling is full of symbolism and provides plenty material for identity building. Various anthropological and ethnographic studies have been conducted on gambling, and the most famous is perhaps the work of Erwing Goffman. For Goffman (2006), action and character are central to gambling: in other words, self-presentation through values and ideals. According to his famous essay "Where the Action Is," through the thrill of the action, gambling can be a representation of the gambler's true character, courage, and psychological strength—this understanding is identity work at its finest. In a way, all of social life is a gamble, and the gamblers place their very character at stake.

Like every other form of gaming, gambling is also a product of culture. Unlike other forms of gambling, money is the adhesive that firmly binds gambling to the society around it and gives meaning to it all. Part of the thrill is the excitement through something that is concretely mundane: money. The ultimate prize is not merely to win money itself, but the things money brings along with it. For example, freedom in consumption in turn can be used to express one's deeper values and ideals. Such views are against traditional theories of gaming (e.g., Caillois 1957; Caillois 2001) that define games as separate from everyday life and the mundane. For gambling, this boundary is crossed through money.

Aside from these more positive aspects, scholars have also observed dark undertones in gambling. For example, gambling has been associated to classical sociological concepts such as deviance, anomie, and alienation. As an action, gambling has been understood as a source of social disorganization and as something that needs

supervision and regulation. For instance, Veblen (1899) argues that gambling is one form of conspicuous consumption of the leisure class. Structural functionalist approaches view society as a self-regulating and balance-seeking collection of components, each with a unique function. Gambling can be seen as one of such components. These theorizations were written in a time when gambling was predominately illegal and largely associated with deviant lifestyles and criminal subcultures. However, Edward Deveraux (1949; see Aasved 2003) describes gambling in a somewhat positive tone as a "safety valve" that regulates the pressure and frustration caused by social inequality in the capitalist system of production. In this understanding, gambling gives everyone an equal chance and a sense of control in a situation in which they otherwise are not in control and allows them to attain the goals of mainstream culture. Following this theory, by giving hope and an experience of managing one's one resources, even in its illegal forms, gambling prevents more serious social disturbances from the viewpoint of the ruling class. As such, gambling serves the purpose of maintaining the status quo.

Geographical analyses of gambling have studied, for example, the correlations between sociodemographic factors, availability of gambling products in different areas, and gambling behavior, including problem gambling. This area of research is where the general link between gambling and crime has been studied extensively. Anecdotal evidence and many depictions in media culture suggest that casino gambling draws organized crime and crime in general. Studies have addressed the influence of casino presence on crime rates—however, the debate continues on whether casino gambling actually increases crime or not (Curran & Scarpitti 1991; Pizam & Pokela 1985; Park & Stokowski, 2011; Stitt et al. 2003, Stitt et al. 2000; Gazel & Rickman 2001, Grinols & Mustard 2006; Walker 2008, Falls & Thompson 2014). Casino-related crime is one of many gambling-related criminal phenomena. Albanese (1997) outlines three different casino-related concerns: (1) the integrity of the casino games, (2) organized crime infiltration of the casinos and vendors, and (3) ambient crime in and around the casino. Much research has concentrated on ambient crime and community-based crime (e.g., Curran & Scarpitti 1991). Casino presence has been found to have an influence on crime rates, and it seems to do so via several moderating factors, for example through tourism that is intensified by the casino (Albanese, 1985; Curran & Scarpitti, 1991; Giacopassi & Stitt, 1994; Chang, 1996). In recent studies that have found casinos to increase the crime rate (Gazel et al. 2001; Evans & Topleski 2002; Grinols & Mustard 2006), the population was not adjusted for visitors (see review by Walker 2013). Whether or not any new attraction increases

crime has also been discussed in criminological literature. Furthermore, Grinols et al. (2011) found that a high amount of visitors did not lead to an increase in crime in US national parks.

Based on the analysis by Nichols and Tosun (2013) on US county level data, even though the relationship between casinos and crime rate seems to be rather circumstantial, in no circumstances are casinos and crime significantly negatively correlated (see also Morse & Goss 2009). In the US, casino presence has been also linked to political corruption in public administration (Walker & Calcagno 2013).

Aside from selling their gambling products, many casinos are diverse entertainment facilities with shows, bars, and restaurants. A study by Cotti and Walker (2010) illustrates that the presence of a casino increased alcohol-related criminality. Miller and Schwartz (1998) collected studies about casino-presence and street crime. Based on their review, they state that there is no scientific proof that the introduction of a casino leads to the growth of street crime.

Moreover, "gambling" is a broad term that contains various activities. These differences are easily diluted in statistics. Although the difference between digital gaming and gambling is becoming more and more ambivalent, in this dissertation "gambling" does not include console games, computer games, mobile games, or other digital games that are not played for money or monetary stakes.

2.1.2   Definition of gambling in the law

In the Finnish criminal code (The Lotteries Act), gambling is defined as an activity in which there is a participation fee, there are prizes with monetary value, and where the outcome is based at least partly on random, uncertain events. For example, such games include lottery games, slot machines, scratch cards, and sports betting, operated either in a land-based manner or online. All forms of gambling, even skill-based games such as sports betting and poker, contain an element of luck.

In this dissertation, "gambling" is defined—in the spirit of the Lotteries Act—as setting monetary stakes over an uncertain result in hope of winning money. In the Finnish language, gambling is separated into two forms based on their risk-potential: gambling (rahapelaaminen) and its riskier form uhkapelaaminen (see e.g., Matilainen 2017). The latter refers to a form of gambling where the stakes are so substantially

large that losing them will cause severe hardship for the gambler. Although only the term rahapelaaminen is used in the Lotteries Act, gambling on extremely high stakes (comparable to uhkapelaaminen) is allowed only in casinos, where the stakes can be set more freely. Nonetheless, this division is artificial since a relatively small stake of EUR 20 can be a devastating loss in a difficult life-situation.

In the law, gambling and other chance-involved games are referred to as lotteries, which are defined as "an activity in which participants may win a prize of monetary value based in full or in part on chance and in which there is a charge for participation." Gambling is defined as "a lottery in which players can win money." Gambling can be based fully on random elements or on an event that has random elements. In the Lotteries Act, different forms of gambling are defined as follows:

> *1) money lottery means gambling in which money can be won in a draw;*
>
> *2) betting means gambling in which players have the opportunity to receive a share of the winnings determined according to the product of the stake placed by the player and the odds indicating the probability of an outcome on the basis of a guess made about the events in or results of a sporting or other competition, including a horse race, or gambling;*
>
> *3) pools means gambling other than that referred to in paragraph 2 in which players have the opportunity to receive a share of the winnings determined on the basis of a guess made about the events in or results of a sporting or other competition, including a horse race, or on the basis of a draw of numbers, symbols or other markings;*
>
> *4) slot machine means a game machine or game equipment which persons can play to win money;*
>
> *5) specialty gaming machine means a game machine or game equipment which after identification persons can play to win money;*
>
> *6) casino game means roulette, card and dice or other comparable games;*
>
> *7) totalisator betting means gambling in which players have the opportunity to receive a share of the winnings determined on the basis of a guess about the results of a horse race;*
>
> *8) combination game means gambling in which features of gambling referred to in paragraphs 1–7 are combined.*

The Criminal Law prohibits illegal marketing of gambling services, which is punishable as a gambling offence.

2.1.3 Legal and regulative framework of gambling in Finland

In the Finnish policy context, gambling is considered based on its consequences, and gambling harm is treated as a public health concern rather than an individual issue (e.g., Gambling Policy Programme, Ministry of Social Affairs and Health 2022). Gambling harm includes the crime potential induced by problem gambling, typically income-producing illegal acts, and property-related offences, such as fraud, embezzlement, and theft.

During the period in which this dissertation and the four sub-studies were written, the Finnish gambling framework underwent some considerably significant changes, most importantly several reformations of the Lotteries Act and the 2017 merger of three gambling providers (Fintoto Oy, Finland's Slot Machine Association [RAY], and Veikkaus Oy) into one fully state-owned provider, Veikkaus Oy. The renewed Lotteries Act obligates the new company to engage in responsible gambling operations, which they report to many different authorities. The Ministry of the Interior started the process to reform the Lotteries Act in January 2020, which entails examining the needs to reform the Lotteries and focuses on the prevention and reduction of harm caused by gambling. The government proposal on the reform was submitted to Parliament in 2021. It includes compulsory identification for all gambling and stricter regulation of gambling marketing, and it also gives Veikkaus the right to engage in business-to-business activities. The amendments were approved by the President of the Republic in December 2021 and entered into force on 1 January 2022.

Gambling is considered as a special form of consumption, which needs special regulation. The Lotteries Act (1047/2001) is the most important framework for gambling and gambling provision in Finland. It contains various restrictions to gambling operations, for example that the patrons cannot be allowed to gamble on credit, that the identity of gamblers must be verified, and that persons under 18 years of age cannot be allowed to participate in gambling. Moreover, the government decree on gambling operation contains concrete and game-specific restrictions, for example on return rates, rounding on winnings, and the number of slot machines. The decree is defined by parliamentary processes and describes the general

conditions for gambling and gambling operations. The 2017 renewal of the Lotteries Act was preceded by significant changes in the gambling sector, most importantly the digitalization of gambling, which in turn created pressure for the contents of the legal framework to be updated. In addition, although foreign gambling operators are not allowed to provide games specifically to Finnish citizens in Finland, Finns still have access to offshore gambling via the Internet, and this pressure caused by international competition was named as one reason for the merger and legal renewal. Avoiding competition between these three former operators was also considered to be important from the viewpoint of gambling harm minimization, and one single company was considered more competent to provide gambling content in the changing market (see Liikanen et al. 2021). Furthermore, having one operator is easier to regulate. The definitions of gambling products were also updated to match offshore competition (e.g., virtual games and more flexible combination of games). In addition to harm reduction, harm prevention was added and highlighted in these new regulations, and these aspects cover social as well as health and financial harms.

In Finnish gambling policy, gambling harms are considered from the public health perspective: in addition to the gamblers themselves, gambling harms have been confirmed to affect a wide range of significant others, co-workers, friends, neighbors, and thus, society as a whole (Langham et al. 2015). These findings form the foundation and justification of the public health approach (Korn & Shaffer 1999). The Finnish gambling model is based on both regulating the games itself (e.g., ensuring their rules are fair, lottery draws are truly random, and the pay-outs are in accordance with the monopoly's goals) and the operator (e.g., marketing). The legislation is drafted by the Ministry of Interior and the acts are passed by the Parliament. The Gambling Administration of the National Police Board, operating under the Ministry of Interior, has the supervisory role over gambling issues in Finland to secure consumer protection, prevent crimes and abuse, and minimize or reduce the social and health harms of gambling. The Gambling Administration also supervises marketing of the gambling products regarding the Consumer Protection Act. Monitoring gambling-related harm is the responsibility of The Ministry of Social Affairs and Health in co-operation with the Finnish Institute for Health and Welfare. Veikkaus itself is obliged to self-regulate and report different sectors of their actions annually to The Gambling Administration, the Ministry of Finance, and the Ministry of the Interior. In addition, the Advisory Board on Gambling was appointed by the government to oversee the implementation of these regulations and to prepare further developments. Finally, The National Police Board also supervises gambling

operations in relation to the Act on Detecting and Preventing Money Laundering and Terrorist Financing. Moreover, computerized supervision and customer identification form the foundation of gambling regulation. Supervision does not only apply to Veikkaus but also to shops and kiosks, for example, that handle gambling-related transactions and registrations of participation (Liikanen et al. 2021).

One justification for the monopoly system to exist has been channeling gambling profits back to the Finnish society without them leaking to foreign operators; in turn, this system keeps consumers under a more easily regulated legal market (Ministry of Social Affairs and Health 2022). There are no exact statistics on the volume of offshore gambling among the Finnish population. However, the H2 Gambling Capital consultancy estimates that the annual Finnish offshore gross gambling revenue is over EUR 300 million, which mainly consists of games provided by Ålands Penningautomatförening (Paf).

The European Union allows the gambling monopoly to exist under the condition that gambling harm will be addressed as promised. Gambling is framed by the Lotteries Act, renewed in 2017 and 2021. In the beginning of 2017 three monopoly gambling operators were combined, allegedly aiming to respond to international competition and blur the distinction between gambling and gaming and at the same time promising to provide a responsible and reliable gambling operator for consumers. This rhetoric assumes that unlimited gambling causes problems including criminal activity. The gamblers are thus protected from themselves (i.e., from developing gambling harm) but also from fraudulent and deceptive gambling operators.

The implementation of the Lotteries Act is supervised by the Police Board, which is obligated to ensure that all gambling games are designed and operated fairly from the viewpoint of the consumer. In practice, this regulation means that the Police Board approves all new games and tests that their outcome is truly random. The Police Board also supervises the marketing of gambling. The monopoly has to deliver their plan of action as well as their budget and year-end financial statements annually to the supervising authorities for examination. The monopoly is also obliged to report to these authorities on the development of gambling and the arrangements it has performed to prevent social and health-related gambling harms. Ultimately, the Police Board has the power to abort the operation of a specific game and to order a conditional fine if it violates the Lotteries Act.

European gambling policies can be roughly placed on an axis between two opposing approaches, liberal and conservative (or restrictive, see Kingma 2008). From the liberal point of view, gambling should be a legal leisure activity, to which people should be entitled to freely participate. As such, gambling is considered comparable to other risky activities and hobbies, which also cause costs for society. The conservative point of view considers gambling as a morally dubious activity, which has little to no profits for society. In the US, for example, anti-gambling movements justify banning gambling by linking gambling to corruption, money-laundering, and illegal gambling.

Laws and regulations cannot always keep up with the technological development (Ogburn 1957), and this challenge also applies to gambling (Wardle et al. 2021). The rise of mobile and online gambling has been assisted by improved online connections, the liberalization of legislations, increased trust given to online gambling providers, and a growing selection of available online transaction services and e-banking. The rise of sports betting has also occurred alongside the increase of live coverage of sports events, which can be accessed on mobile devices. Technological development has also brought new and improved gambling products such as live betting. Furthermore, individual jurisdictions are struggling to prevent money transactions to offshore gambling companies and the opening of new gambling accounts (Banks 2017).

Various regulation models exist for gambling provision. Gambling operations can be license-based, where the licensed operators operate in a more or less strictly defined framework (see e.g., Mandolesi et al. 2022). Another approach is a supervised monopoly, which can be owned privately or publicly. The monopoly pays lotteries tax for the state. Certain amount of the profits are distributed to different common good and civil society functions: science, arts, youth, social and health associations. The profits are also used to support horse agriculture and horse racing. Moreover, the operations of the monopoly should not follow business logic, and it should not have profit expectations.

Gambling has been an institutional part of Finnish society with strong budgetary ties to various social and political activities. In Finland, the popularization of gambling was primarily promoted by the state during a geo-politically unstable post-war period when gambling was strategically used as a Devereux-like safety-valve to release the pressures of the public, to influence their behavior, and to increase social cohesion

(Ahonen 2019). In this rhetoric, gambling has been linked to supporting the veterans, civil society, and even the state economy. Gambling for good causes was intentionally associated with good citizenship by the political parties. However, perhaps the most important legitimation for regulation has been the prevention of organized crime infiltration to the gambling market and the channeling of the gambling profits to Finnish society.

The Lotteries Act states that gambling harms should be monitored and studied as well as that harm prevention and the development of problem gambling support are also obligatory. The Ministry of Social Issues and Health oversees the coordination of these tasks, which are funded by money derived from gambling profits. Generally, the procedure is partially comparable to harm management of alcohol and tobacco.

2.1.4   Gambling from a public health perspective

Gambling is still a controversial activity that is surrounded by "profoundly political" public health policies (Shaffer et al. 2020). The core element of these policies is whether problem gambling is considered to stem from individual decisions to gamble or from wider societal choices (e.g., van Schalkwyk et al. 2021) and how much the public is allowed to be exposed to gambling products. Governments, the gambling industry, and different professionals view gambling through different values and competing interests. As gambling has become more and more a widely acceptable part of leisure consumption, gambling operators follow responsible gambling policies to protect their business, governments regulate gambling as a threat to public health, and various anti-gambling movements promote gambling as a morally suspicious activity that should be banned altogether (see Banks 2017; Banks & Waters 2022). This value-driven debate is essentially a discussion about whether a healthy level of gambling exists at all.

Similar to the public health perspective, in public interest approach (Sulkunen et al. 2018) gambling policy is considered from the viewpoint of the intermingled and simultaneous processes of several different actors who differ in their resources, interests, and intentions. Often, harm discussion focuses on individuals instead of addressing the role of the gambling providers (Abbott 2020) as serving the purposes of gambling industry. According to Reith (2008), an inherent contradiction exists

between the ever-liberalizing gambling market and an increased demand for self-control by the individual gamblers themselves.

The Reno Model (Blaszczynski et al. 2004) is often differentiated as an alternative to wider and more profound public health interventions. Proponents of the Reno Model claim that the promotion of responsible gambling should primarily be conducted by the gambling industry in co-operation with governments, welfare organizations, and communities to keep consumption high but at healthy levels. Alternatively, the critics of the Reno Model (e.g., Hancock & Smith 2017) state that responsible gambling programs by the gambling industry are somewhat ineffective and merely a façade for the companies to improve their image. This discussion is in part analogous to the public discussions in Finland about gambling policy and the role of the related monopoly company.

Although the term "problem gambling" is still widely used in research, some researchers have stated that the term is a socially and politically constructed behavior, which serves industry interests. As such, the term attributes the blame for excessive gambling consumption and subsequent gambling harm to the "faulty" individual alone (see e.g., Cassidy et al. 2013; Livingstone & Rintoul 2020). Such discourse suggests that there is "responsible" gambler who gambles safely for the "right" reasons, which nonetheless remain undefined. Since contested descriptors should be avoided in gambling studies, a change of vocabulary may be required. As a solution, expressions such as "people experiencing gambling harm" and "excessive gambling" are recommended by some researchers (Blaszczynski et al. 2020). However, the terms "problem gambling" and "problem gambler" are still used in this dissertation to be consistent with previous mainstream literature.

The general focus of prevention, gambling policy, and gambling research has recently been moving from strictly defined problematic forms of gambling towards lower risk gamblers and gambling harms, which are increasingly considered as a burden to public health (Shaffer & Korn 2002; Wardle et al. 2012). A similar development is also evident in Finnish gambling policy, most notably the recently published Gambling Policy Programme (Ministry of Social Affairs and Health 2022).

Some studies have already suggested that individual gambling harms experienced by low-risk gamblers may produce significant costs for the whole society (Browne et al. 2017; Latvala et al. 2019). In this respect, the importance of developing gambling behavior-based indicators and identifying at-risk populations has been emphasized.

Different projects have been targeted moderate or low risk-gamblers to prevent gambling harms from escalating in an early phase. One such project is Lower Risk Gambling Guidelines (Young et al. 2021), which is a Canadian-led international initiative to empirically define safe gambling limits (e.g., on gambling consumption, game types, gambling frequency) to reduce the risks for developing gambling problems.

2.2 GAMBLING AND PROBLEM GAMBLING: PREVIOUS FINDINGS

In Finland, the funding for the study of gambling and gambling harm is primarily directed by the Finnish Institute for Health and Welfare, through The Ministry of Social Issues and Health. Separate problem gambling and gambling-related research projects (mostly dissertations, such as this current study, and post doc projects) are also funded via the grants provided by The Finnish Foundation for the Study of Alcohol. The University of Helsinki has also received funding for the social science study of gambling. Non-harm related socio-cultural gambling research was promoted and funded by the now defunct Foundation for Gaming Studies, founded by the monopoly itself.

Generally, gambling research in Finland is heavily concentrated on addiction research, and it has mostly been conducted from the viewpoint of public health, psychology, and psychiatry studies. The first population survey was conducted in 2003. Later, attitudes towards gambling and the prevalence of gambling and problem gambling were surveyed in 2007, 2012, 2015, and most recently in 2019 (Ilkas & Turja, 2003; Aho & Turja 2007; Turja et al. 2012; Salonen & Raisamo 2015; Salonen et al. 2021).

2.2.1 Prevalence of gambling and problem gambling in Finland and internationally

Gambling opportunities seem to be largely overrepresented when compared to other fields of entertainment provision and consumption in Finland. Gambling is a widely accepted and popular activity in Finland. In the 2019 population survey, the prevalence of gambling was 78.4% (74.5% for women and 82.2% for men). As a

population estimate, these statistics mean that over 2.9 million people living in Mainland Finland have participated in gambling during 2019. One third of Finns have played electronic gambling machines (EGMs) during the previous year. However, the overall gambling consumption cumulates to a small group of active players. In 2019, 2.5% of the gamblers were estimated to be responsible for 50% of the total losses in Finland. The main motivations for gambling include winning money, passing the time, seeking excitement and fun (Salonen et al. 2020). Moreover, the social contacts provided by the gambling venues can motivate some gamblers (Lee et al. 2006; Loroz 2004). Escaping one's problems via gambling is a typical motivation for problem gamblers (Nower & Blaszczynski 2010; Salonen et al. 2018).

Although in the 2020s gambling is a well-established part of everyday life and leisure and entertainment culture in Finland, public attitudes towards gambling are relatively strict. On the population level, 91% think that people should not be encouraged to gamble. Over two thirds of Finns at least somewhat agree that there are too many opportunities to gamble. However, three out of four Finns think that gambling should not be banned altogether and that the monopoly system is the right arrangement to control gambling harms. (Salonen et al. 2020.)

In Finnish population surveys, problem gambling is assessed using the South Oaks Gambling Screen (SOGS; Lesieur & Blume 1987). In this assessment, problem gambling (SOGS $\geq$ 3) covers both problematic and pathological gambling, and probable pathological gambling (SOGS $\geq$ 5) is the most severe form of gambling. Problematic gambling refers to a situation where gambling causes individual negative consequences, such as health problems and financial harm. At-risk gambling (SOGS = 1–2) is the mildest form of the problem, and it refers to gambling that does not cause significant harms to the gambler. Gambling severity is often described as a continuum, and these different phases precede pathological gambling.

The latest population survey (Salonen et al. 2020) indicates that 3.0% of respondents (approximately 112,000 people) had engaged in problem gambling and 1.4% were probable pathological gamblers (approximately 52,000 people). Of the respondents, 10.7% were identified as at-risk gamblers (approximately 397,000 people). Across different studies, both gambling and problem gambling have been found to be more prevalent among men compared to women (e.g. Welte et al. 2017). This finding is also the case in Finland: 4.0% of men and 2.1% of women scored 3 or more in SOGS, which indicates problem gambling. Prevalence of problem gambling is also

higher in younger age groups: 5.3% among 18–24-year-olds and 4.8% among 25–34-year-olds.

The prevalence rates are also likely to be underestimates due to various methodological reasons, such as non-response bias, errors in sample selection, and inexact self-reporting due to social acceptability, for example (Sulkunen et al. 2018; Williams et al. 2012b). In international studies, however, the prevalence of gambling is estimated to be one half of the population in high-income countries, and the prevalence of problem gambling is estimated to fall between 1% and 4%. For pathological gambling, the rate is estimated to be somewhere between 0.1% and 0.8% (Lorains et al. 2011.)

Gambling also affects other people, often referred to as affected others or concerned significant others. The estimates of how many such people on average are affected vary from five to 10 people (Productivity Commission Report 1999), six people (Goodwin et al. 2017), to 10–15 persons (Kalischuk 2010), depending on the methodological choices and research settings. The proportion of affected others varies from 2% to 19% of the population (Salonen et al. 2014, 2018; Svensson et al. 2013; Abbott et al. 2014; Wenzel et al. 2008). Based on the Finnish Gambling 2015 study, 19.3% of the population reported that they had been an affected other at some point in their lives (Salonen & Raisamo 2015). Based on the Finnish Gambling Harms 2016 survey, the corresponding figure in a one-year time frame was 13% (Salonen et al. 2018). According to the latest population survey data, one in five people living in Mainland Finland are defined as affected others, which translates to 790,000 individuals. The person with problem gambling is most often a close friend. Most experienced harms are worry over their close one's health or well-being (10%) and emotional burden (9%). Affected others also reported having relationship problems such as disagreements, isolation, and distancing from a friend (4%). Furthermore, 2% of respondents reported having experienced arguments, distrust, or divorce due to problem gambling of their close one.

A study by Castrén et al. (2021) found that affected family members were typically women, whereas affected close friends were more often men. Experiencing emotional harms was more common among affected family members. Other issues reported by international studies include domestic violence and child neglect (Dowling et al. 2016; Dowling et al. 2018). According to a systematic review by

Dannon et al. (2018), gambling may also result from a problematic relationship. Thus, the direction of causality is not unequivocal.

The lifetime prevalence of gambling in general is considerably high internationally: across different studies, a majority of people have gambled during their lifetime (Calado & Griffiths 2016). Problem gambling is typically measured using a lifetime or past-year timeframe, and lifetime prevalence is naturally higher than past-year prevalence (Jonsson 2006). Despite differences regarding the screening instruments and different cut-off points, the rate of lifetime problem gambling is estimated to vary internationally from 0.7% (Denmark) to 6.5% (Estonia). Globally, past-year prevalence of problem gambling falls in the range between 0.12% in the German and Italian speaking part of Switzerland and 5.8% in Hong Kong. (Calado & Griffiths 2016.) The prevalence of problem gambling has been among the highest in the Nordic countries.

In adolescents, the rate of past-year problem gambling varies from 0.2% to 5.6%, and the lifetime prevalence varies from 1.6% to 5.6% (Calado et al. 2017). The prevalence of problem gambling is higher among adolescents compared to adults (Calado et al. 2017; Shaffer et al. 1996). Being male, belonging to an ethnic minority, having substance addictions, having parents who gambled, gambling online, playing slots or card games, betting on sports, gambling for escape, being unable to resist temptation, and being an older adolescent were identified as risk factors for adolescent problem gambling (see e.g., Calado et al. 2016; Fröberg et al. 2015; Hanss et al. 2014; Kourgiantakis et al. 2016). Problem gambling occurs in a social context and thus affects other close persons in a gambler's life, and in particular, partners and children are vulnerable in this respect (Riley et al. 2021). The specific risk factors for problem gambling are reviewed in detail in the following section.

2.2.2 Risk factors and comorbidities

Previous international studies have identified various demographic risk factors that predict problem gambling and gambling disorders. Generally, young age, male gender, low socioeconomic status, and being divorced increase the risk of being a problem gambler (Hodgins et al. 2011). However, the relationship between these factors and the specific game type is often overlooked. While certain game types are potentially more addictive, they also attract different demographic groups. The link between demographic factors and problem gambling likely contains a more complex

set of moderating factors. The risks seem to be slightly different for men and women (Hing et al. 2016). For females, the risk of being an at-risk gambler is heightened for young adults, those who are unemployed or not in the workforce, and those living in a group household. Type of gambling was also associated with higher risk: gambling on private betting, EGMs, scratch cards, or bingo increased the risk of being an at-risk gambler. Most importantly, those who gamble the most frequently and spend the most money on gambling experience harm to a greater extent (harm frequency). On a population level, most harms are experienced by low-to-moderate risk gamblers, but the severity of harms is highest among problem gamblers (Raybould et al. 2021).

Motivations other than winning money, socializing, or seeking entertainment seem to be associated with problem gambling. For males, these same risk factors apply, but in addition, low education and gambling on table games, races, sports, or lotteries increases the risk of being a problem gambler. Low socio-economic status, poverty, and deprivation have been recognized as risk-factors (Sharman et al. 2019), and some studies have found that experiencing gambling-related harm is more prevalent among those with lower education and socio-economic status, even in a situation where exposure and participation to gambling are at similar level or even at a lower level compared to the general population. However, the evidence is not straightforwardly conclusive. The relationship between financial hardship and deprivation, homelessness, unemployment, and problem gambling, found by some studies, is likely more complex than meets the eye.

Various neurocognitive and neurobiological deficits, such as shortcomings in working memory and inhibition, are more common among problem gamblers compared to the general population. Evidence has been found that neurotransmitter-related problems and alterations in dopaminergic pathways are linked to the development of problem gambling. These conditions make the individual vulnerable to various elements of problem gambling, for example chasing losses (Hodgins et al. 2011). Moreover, genetics play a part on problem gambling, according to various twin-studies. A recent systematic review (Marchetti et al. 2019) found high levels of alexithymia among problem gamblers. According to studies, these neurocognitive deficits and shortfalls are also evident in other deviant behaviors, such as substance abuse. Various studies indicate that impulsivity as well as compulsivity (Lee et al. 2019) are connected to the core of several risk-taking behaviors, including gambling (Liu et al. 2013) and crime. Impulsivity is also an

important factor related to attention deficit hyperactivity disorder (ADHD). In a meta-analysis by Theule et al. (2019), problem gamblers were found to be over four times more likely to have ADHD compared to controls. In addition, respondents with ADHD were almost three times more likely to experience problem gambling than respondents without ADHD. Generalized impulsivity deficits, including those in decision making, seem to be a crucial component of problem gambling (Ioannidis et al. 2019).

When a problem gambler has one or more co-occurring psychosocial conditions, it is referred as comorbidity. These conditions can be current or lifetime. The comorbidity between problem gambling, psychiatric disorders, and substance use disorders is high (Crockford & el-Guebaly 1998; Shaffer & Korn 2002), which has been considered as affecting treatment access and outcomes (Lorains et al. 2011). The prevalence of manic episodes, personality disorders, impulse control disorders, mood disorders, phobias (e.g., social phobia), bipolar disorder, post-traumatic stress disorder, obsessive compulsive disorder, adjustment disorder, panic disorder, attention-deficit hyperactivity disorder, anxiety, and symptoms of anxiety are high among problem gamblers compared to general population (Dowling et al. 2015a; Sharman et al. 2019). According to an Australian meta-analysis (Dowling et al. 2015b), narcissistic, antisocial, avoidant, obsessive-compulsive, and borderline personality disorders were relatively common among treatment-seeking problem gamblers. It is unclear whether these disorders are caused by the stressful life situations experienced by problem gamblers or whether these disorders precede the decisions to engage in gambling.

Moreover, problem gamblers report higher rates of dysthymia and depression (Hodgins et al. 2011), while also experiencing suicidal thoughts and attempts more frequently compared to the general population (Shaffer & Korn 2002; Black et al. 2015). In some studies, problem gambling has been linked to higher mortality. The presence of comorbid disorders might affect treatment outcomes. It has been speculated that this link to higher mortality is partly because problem gamblers with comorbid conditions prefer to seek help for their psychic disorders rather than their gambling problem, due to better accessibility and lesser stigmatization. Furthermore, compared to problem gambling, other comorbid psychosocial problems may be better recognized by the problem gamblers themselves (Dowling et al. 2015a).

A considerably strong link has also been found between problem gambling and substance use disorders. Previous studies confirm that pathological and problem gambling is highly prevalent among substance users in treatment (Cowlishaw et al. 2014). Alcohol use can encourage risk-taking behavior and distort perceptions of the consequences of gambling (Shaffer & Korn 2002; Hodgins et al. 2011). Rather high prevalence of nicotine dependence is also reported (Lorains et al. 2011). The stress caused by financial losses due to gambling can feed substance use and thus further worsen the situation (Cowlishaw et al. 2014). The cross-substance coping response hypothesis explains the connection between problem gambling and substance use as a vicious cycle, where the adverse effects of substance use are alleviated by gambling and vice versa.

A large body of research confirms that various structural and situational environmental factors contribute greatly to the onset of problem gambling. For example, such factors include access to gambling products, the location of gambling venues, the type of gambling establishment and childhood exposure to gambling. Post-traumatic stress disorder and experienced traumatic events, such as abuse, are significant risk-factors for developing later gambling problems (Moore & Grubbs 2021; Sharman et al. 2019) as well as other problems such as mental health issues and substance misuse. The severity of PTSD and pathological dissociation are also associated with gambling severity (Moore & Grubbs 2021).

Associations between structural characteristics (which refer to the distinct features and properties; see Griffiths et al. 1993) of the games themselves and problem gambling have also been found. Such factors include high payout interval, high potential betting frequency, and high frequency of in-built near-misses (Newall et al. 2021). In addition, access and availability of gambling products greatly affect the risk of developing a gambling problem. However, the mechanisms differ between different sociodemographic groups. Both social isolation and gambling for social reasons increase the risk of developing a problem gambling but in different age groups: social isolation was associated to problem gambling in younger age groups, whereas gambling for social reasons was more common among older problem gamblers (Sharman et al. 2019). Several studies (e.g., Vasiliadis et al. 2013; Williams et al. 2012a) confirm that the physical availability of gambling products affects increased gambling frequency, gambling expenditure, and the development of gambling harms. A study by Pearce et al. (2008) suggests that the effect of availability

to gambling activity and to gambling problems is so substantial that it even surpasses individual characteristics.

Risk-factors and early protective factors for subsequent problem gambling onset have been mapped in several studies (Dowling et al. 2017). These factors can be divided into individual, relationship, and community factors. Individual factors include problem gambling severity, alcohol use frequency, antisocial behavior (including deviant behavior such as theft), depression, male gender, cannabis use, illicit drug use, impulsivity, number of gambling activities, sensation seeking, tobacco use, violence, and uncontrolled temperament. Relationship factors refer to the antisocial behavior of peers, which is shown to affect the risk of developing a gambling problem later in life. Poor school performance is considered a community factor. Alternatively, parental-supervision, socioeconomic status, and low social problems were identified as protective factors against problem gambling in later life.

Furthermore, these aforementioned factors may likely interact with each other. Hence, heuristic integrated models have been proposed, and the pathways model (Blaszczynski & Nower 2002) is the most prominent. The pathways model presumes that there are essentially three subtypes of problem gamblers: behaviorally conditioned, emotionally vulnerable, and antisocial impulsivists. Behaviorally conditioned problem gamblers are environmentally conditioned to gamble, as they have learned distorted cognitions associated with frequent exposure to gambling. Emotionally vulnerable problem gamblers have depression, anxiety, and pre-existing traumas that influence their engagement with gambling, and these individuals also share the same structural and environmental conditions as behaviorally conditioned problem gamblers. Finally, antisocial impulsivist problem gamblers have antisocial traits, attention deficits, and impulsivity, for which gambling provides a perfect platform and thus creates fertile ground for the development of problem gambling. The association between problem gambling and criminal behavior has been suggested to be linked especially to the antisocial impulsivist pathway. The pathway model suggests that problem gamblers with different backgrounds may also benefit from different types of interventional approaches.

The biopsychosocial model by Sharpe (2002; see also Williams et al. 2012b) conceptualizes the dynamics of problem gambling slightly more straightforwardly. This model considers problem gambling as an interaction of predisposing factors, early gambling experiences, and adverse psychosocial experiences. For example, the

development of problem gambling onset requires simultaneously having genetic vulnerabilities or poor coping skills, receiving large wins early, and experiencing a stressful life situation.

Furthermore, some risks are more prevalent among certain groups than others, and a homogenous group of problem gamblers does not exist. However, many of the sociodemographic, situational, and psychological risk-factors related to gambling also apply to crime. Problem gambling is highly prevalent among prisoners (Banks et al. 2020), and it is associated with criminal convictions (Laursen et al. 2016). The following section further discusses the relationship between gambling and criminal behavior.

2.3 LINKS BETWEEN PROBLEM GAMBLING AND CRIME: FINDINGS FROM PREVIOUS LITERATURE

2.3.1 History of gambling, crime and regulation

In a recent population survey (Gambling Commission 2020) in the UK, 42% of the respondents agreed with the statement that gambling was associated with criminal activity. The associations between gambling and criminal behavior are, however, understudied to some extent and still largely controversial. In this dissertation the connections between problem gambling and crime are observed mainly through two classic theories of criminology: the routine activity theory developed by Cohen and Felson (1979) and the general strain theory developed by Agnew (1992). This section briefly explores the history of gambling, crime, and regulation.

As previously mentioned, gambling is an umbrella term for various types of games, and these differences are easily blurred. As such, different generalizations, beliefs, impressions, assumptions, and myths are linked to gambling and gambling harm. For example, elderly bingo players and young professional poker players are sometimes treated as one ambivalent group of gamblers. One strong cultural association has been the relationship between gambling and criminal activity. In

anecdotes, entertainment gambling is routinely paired with organized crime, money laundering, desperate problem gamblers, illegal gambling dens, and the violent collection of gambling debts. The promise of easy money, glamorous casinos, and the depraved reputation of gambling are assumed to naturally allure shady and morally dubious characters. Such anecdotal evidence has also been used to justify gambling regulation.

Throughout its history, gambling has been considered as a vice that should be regulated, while at the same time a profitable source of income. In medieval Sweden drawing lots was used in elections in case of a tie and sometimes even in the execution of death penalties. Lotteries and draws have also been used to fund the building of churches and to support charities. In 15th century England official decks of cards were sold to the public by the government, and in Finland the Playing-Card Tax was in use between 1842 and 1983, which ruled that the importer or manufacturer of playing cards had to pay a tax to the state. (Korpiola & Sallila 2014.)

One of the earliest mentions of gambling in Swedish law is included in the manorial law[1] of Erik of Pomerania from 1403, which mostly regulated the stakes and time for the purpose of public order. Similarly, gambling was regulated, although not forbidden, in the Magnus Erikssen's Town Law from the 1350s to maintain order and prevent quarrels and fights as well as to reduce excess redistribution of wealth. (Korpiola & Sallila 2014.) During the Swedish regime, the most common played games included dice and card games, such as bassette and faro, which spread all over Europe from France and were integrated into the lifestyles of the upper-class. Soldiers played card games to fight boredom, and as Näre (2014) suggests, even to develop strategic skills and stress resilience. A detailed analysis of the history of gambling and gambling regulation in Finland is presented in the works of historians Matilainen (2017) and Ahonen (2019).

In the Middle Ages, the clergy was primarily in charge of regulation, and later this switched to legal professionals. Anti-gambling attitudes have been justified using juxtaposition where ruthless charlatans prey on disadvantaged citizens and try to lure them to gamble their property in rigged games. In this scenario, citizens should be protected from abuse and disorganization associated with gambling. Alternatively, in Europe gambling has been frowned upon by governments on an intellectual and

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[1] Manorial laws were one of the medieval bodies of law, which regulated and set limits for the services and governed lord-peasant relations (see Pihlajamäki 2017).

political basis with strong moral undertones. At the turn of the 19th century, working class gambling was frowned upon as something that cherishes being idle, prodigal, and undisciplined—even a threat to societal stability. It was often considered to be against the protestant work ethic and capitalist logic, as gambling winnings did not seem to be earned by hard work (Reith 2007). More generally, it has been thought that financially deprived lower classes should use their money for essential purchases, not such vanity. The commonly used justification for banning gambling altogether has been the relationship between gambling and criminal behavior, which lacked empirical support for a long time since the theme was overlooked by scholars. Negative attitudes towards gambling are evident not only in religion and politics but also in academia. For example, criminologists such as Hermann Mannheim (1940) have stated that betting will inevitably lead to at least petty crime.

Different jurisdictions have different classifications on gambling. In history, even chess and billiards have been regulated as skill-based games of chance comparable to gambling (Korpiola & Sallila 2014). Pure games of chance have been more strictly regulated compared to games that contain the element of skill. At least some forms of gambling are illegal in many jurisdictions, and in Islamic countries, for example, gambling is completely banned. Despite gambling being illegal in most states in the US until 2018, sports betting was studied to be a considerably popular form of gambling among Americans worth EUR 80–336 billion annually in the late 1990s and early 2000s (Strumpf 2003; see also Humphreys 2017).

Since the modern gambling environment is constantly evolving, the regulations cannot be static, and instead, they are constantly being negotiated. Many gambling policy discussions are still focused on whether gambling-related social problems, such as criminal activity, increase as new gambling opportunities are opened. Especially in the US, anti-gambling campaigns have expressed their worry over the possibility that people can be driven into crime as a consequence of their gambling. The foundation of gambling regulation has been the idea that gambling behavior and the related issues can be affected by changing the gambling environment. It is assumed that gamblers would rather choose the legal gambling market over the illegal market for their own legal and consumer protection. For example, according to Dixon (1991), in the 1960s UK illegal gambling-related problems decreased as legal opportunities to gamble were improved. More recently, similar observations have been made by Pontell et. al (2014) in Macau. However, the introduction of legal

gambling opportunities has in some cases led to the expansion of the illegal gambling market, for example in Australia (see Banks 2017).

2.3.2   Taxonomies of gambling-related crime

Crime can be directly or indirectly associated with gambling (Banks & Waugh 2019). Various taxonomies and categorizations exist on gambling-related crime. Spapens (2008; 2014) divides the convergences between gambling and crime into four different but slightly overlapping categories. First, gambling can be arranged illegally, and this situation is the case, for example, if all or some forms of gambling are forbidden and criminalized. Alternatively, if only a small number of operators are allowed into the market and the demand for gambling is higher than the supply, illegal operators can try to gain their share of the gambling profits. Second, organized crime can infiltrate the legal gambling market—a classic example of this is the previous presence of the mafia in Las Vegas. By controlling the legal gambling market, organized crime can preserve the means for money laundering and use gambling profit for various other criminal activities. Third, the legal gambling markets can be manipulated and abused with cheating. Fourth, problem gambling can provoke criminal activity, which is typically property crime, as well as violent crime, intimate partner violence, and drug-related crime.

Smith (2003) and his colleagues analyzed gambling-related crime reported to the police in the city of Edmonton, Canada. As one of the most comprehensive empirical explorations of crime and gambling, the study classified the crimes into directly and indirectly gambling-related. Four main categories were identified: 1) illegal gambling, 2) problem gambling-related crime, 3) gambling venue-related crime, and 4) intimate partner violence (IPV) related to gambling. This dissertation explores problem gambling-related criminal behavior.

Sulkunen et al. (2018) briefly divide gambling-related findings in the study of crime into the following six main themes:

> *(1) Fraud and match-fixing exist in sports games.*

> *(2) Organized crime is known to infiltrate to legal, paralegal, and illegal gambling.*

> *(3) Gambling may increase corruption.*

(4) The prevalence of problem gambling is high among offenders, gambling accessibility is associated with domestic violence, and problem gamblers are at higher risk to commit crimes compared to the average population or moderate gamblers.

(5) Individuals commit crimes to gain resources for gambling or to cover gambling losses.

(6) Access to new legal gambling products may also lead gamblers to access illegal sites with unauthorized high-risk games.

While Sulkunen et al. (2018) state that gambling seems to have some criminogenic capacity, they also note that the direction of causality is unclear and can go in both directions. This dissertation further explores Themes 4 and 5.

Banks and Waugh (2019) classify gambling-related crimes to four main categories 1) illegal and unlicensed gambling, which refers to whether the gambling activities are against the criminal code or are offered by an unlicensed provider; 2) non-compliance, where legal gambling providers break the law; 3) gambling-centered crime, which refers to when gambling provision attracts criminal behavior, such as money laundering, theft, or bribery; and 4) criminogenic gambling, where compulsive gambling leads the gambler to commit crimes. The taxonomy also identifies the relevant legal framework for each category, instances responsible for the law enforcement, different groups of perpetrators and victims, and the harms caused by the criminal activity. This dissertation focuses on criminogenic gambling as well as the associations between problem gambling and crime more generally. In their taxonomy, Banks and Waugh describe the subtypes of criminogenic gambling, where problem gamblers can be either victims or perpetrators. According to these authors, crime types typical to problem gamblers being the perpetrators include theft, embezzlement, forgery, vandalism, assault, anti-social behavior, spousal abuse, and child abuse. Alternatively, blackmail is a crime type where problem gamblers are typically the victims.

2.3.3 Problem gambling-related crime in population level: empirical findings from Finland

Estimates of the prevalence of problem gambling-related criminal activity among problem gamblers vary greatly due to methodological issues in defining and operationalizing problem gambling-related crime. Problem gambling-related crimes

are typically instrumental acts of desperation in most cases, stemming from severe financial losses, as an attempt to recover the situation or to gain resources for gambling and winning back losses. Therefore, the illegal act is only instrumental in most cases, reflecting the desperation related to this disorder.

The costs for society caused by gambling-related crime was estimated in a recent Finnish study by Latvala and her colleagues (2020), based on gambling-related crime reported to the police (Kuoppamäki et al. 2014). These costs can be direct or indirect. In addition, gambling-related crime causes non-material damage and costs related to the control and regulation system.

Control system costs include emergency center functions, alert tasks for the police and preliminary investigation, consideration of the charges by the prosecutors and their participation in the trial, court of justice functions, legal aid, and the implementation of a decision. Direct costs caused by gambling are formed by the treatment of injuries caused by crime, support services for the victims, and treatment for the perpetrators. Direct costs include economic costs, which are caused by frauds and embezzlements. In addition, the direct costs include destroyed or stolen property of the victims.

Indirect costs entail lost work caused by gambling-related crime. Such costs include abseentism and premature deaths due to problem gambling-related crime (suicides). Lost life, lost welfare, and human suffering are treated as non-material costs.

Overall, gambling-related crime have caused costs worth EUR 8,166,095 per year: direct costs totaling EUR 417,833 and indirect costs worth EUR 7,748,262. In the study by Latvala et al. (2020), the control and regulation costs alone were estimated to be EUR 1,183,194. Furthermore, gambling-related crime caused EUR 26,922,866 worth of nonmaterial damage. In total, gambling-related crime causes annually costs of EUR 9,349,289, and if non-material damage is considered, EUR 36,272,155. Since most crime remains unreported, these estimates are based on crime reported to the police and it is rather likely that the actual costs are at least somewhat higher.

In a 2019 population survey (Salonen et al. 2020), 0.4% of respondents reported that they had been a victim of a property crime due to gambling. In addition, 0.8% reported that they had experienced emotional violence and 0.3% had experienced physical violence due to the gambling of someone close to them. While such prevalence is quite small on a population level, the population estimate still means

that 11,000–30,000 people living in Mainland Finland have been a victim of a problem gambling-related crime or have experienced emotional or physical violence induced by problem gambling. In a 2017 survey on three Finnish regions, 3.2% of the respondents considered gambling-related crime prevention as the most important task of the Finnish gambling system. Furthermore, 0.1% of respondents had been a victim of a crime linked to the gambling of their close one, while 0.2% had experienced emotional violence, and 0.1% had experience physical violence.

2.3.4   Problem gambling and criminal activity

Persons who commit crimes as a consequence of their gambling seem to be a considerably heterogenous group regarding how their problem gambling manifests clinically and what kind of other harms they experience. Problem gambling-related crime was previously part of the criteria for gambling disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM), but it was removed from the newest version as an indicator of gambling disorder severity rather than gambling disorder itself. In other words, the removal was largely because problem gambling-related criminal activity is considerably often, if not always, accompanied by other problem gambling criteria.

Although the association between problem gambling and criminal behavior is confirmed by several studies (see Adolphe et al. 2019), the causal relations remain unclear. Crime committed by problem gamblers largely consists of non-violent property crime (Adolphe et al. 2019; Turner et al. 2009), but other various crime types occur including online crimes (Chen et al. 2005; Kuoppamäki et al. 2014), IPV (Afifi et al. 2010; Korman et al. 2008; Kuoppamäki et al. 2014; Liao 2008), drug-related crimes (Laursen et al. 2016), and child neglect (Afifi et al. 2010). As discussed earlier, these more general problem behaviors seem to fit to the profile of an impulsive gambler presented in the pathway model by Blaszczynski and Nower (2002). Other behaviors, such as heavy substance use and self-harm, seem to be somewhat separate from their problem gambling.

It has been suggested that criminal behavior is underreported in a support context by the gamblers themselves, due to shame and stigma. A relatively high prevalence of problem gambling-related crime is still evident in prisoners and help-seeking problem gamblers (Abbott et al. 2005a; Abbott et al. 2005b; Williams et al. 2005). Review studies on the prevalence of problem gambling among prisoners estimate

that up to one third of the prison population could be diagnosed with problem gambling (Banks 2020; Williams et al. 2005). In a study by Folino and Abait (2009), 77% of help-seeking problem gamblers reported to having participated in criminal activity due to their gambling. In Finland, 22% of help-seeking clients of Gambling Clinic reported taking money or property from a friend or a family member without permission, and 8% had stolen from individuals other than friends or family (Salonen et al. 2017).

Even though the direct causality between problem gambling and crime remains unclear, some international studies suggest that problem gambling can lead to crime. A Canadian study reported that up to 65% of prisoners with problem gambling reported that their criminal activity had started from problem gambling (Turner et al. 2009). The problem with causality is that both crime and gambling can be considered to stem from the same factors, such as certain personality traits or antisocial features (Folino & Abait 2009; Mishra et al. 2011).

Gambling can increase crime in society many ways, both directly and indirectly. As more and more people engage in gambling, it is also likely that the prevalence of problem gambling will increase, and among problem gamblers, crime will also be more common (Adolphe et al. 2019a; Laursen et al. 2016). Not only do the legal forms of gambling create opportunities for criminal behavior, but casinos also increase alcohol-related crime (Williams et al. 2011). In some studies, a casino opening has been linked to increased violent crime (Stokowski 1996) and driving under the influence (Cotti & Walker 2010) in the surrounding area. An increased volume of tourism attracted by gambling facilities has also been linked to the growth of crime (Reece 2010). Alternatively, the availability of legal gambling opportunities seems to decrease illegal gambling (Williams et al. 2011).

2.3.5 Problem gambling and property crimes

According to Kuoppamäki and her colleagues (2014), gambling-related crime forms a considerably small proportion of overall crime reported to the police in Finland. The relation between gambling and crime is for the most part considerably loose and incidental. Internationally, the majority of gambling-related crime is related to problem gambling and is defined as non-violent property crime in nature (Arthur et al. 2014). Previous studies have suggested that gambling severity is associated to criminality and having a criminal record in general (Meyer & Stadler 1999; Laursen

et al. 2016). This connection was present for property crimes as well as for other crime types such as traffic and drug-related crimes.

Connection between gambling severity and criminal behavior also seems to apply for adolescents (Fröberg 2006). In addition to high comorbidity with risky substance use, self-destructive thoughts, and mental health disorders, adolescent problem gamblers committed thefts, violent crimes, and frauds more often compared to those who did not gamble at a problematic level. Similar findings were made by Cook et al. (2015), who found that selling marijuana, engaging in gang activity, and possessing an unlicensed firearm were more common among adolescents with problem gambling. In the 1990s, Griffiths and Yeoman (1996) estimated that a total of 4% of crimes committed by adolescents were related to funding their EGM play. A study by Räsänen (2015a, 2015b) indicated that frequent gambling participation among adolescents was associated with substance use, poorer health, and violent behavior.

As previously discussed, a large body of research suggests that problem gambling is linked to various life control issues such as emotional, financial, and social problems; sexual risk-taking behavior; and substance use (Lesieur & Blume 1986). A common factor such as impulsivity explains various risk taking behaviors, including crime. The presence of several other addictions, a low level of income, and a high SOGS score also predict problem gambling-related criminal activity (Gorsane et al. 2017).

Compared to the general population, problem gambling has been shown to be more prevalent among prison populations and convicted persons. Although the prevalence of gambling as such is lower than among the general population, according to a systematic review by Williams (2005) up to 30% of prisoners might be problem gamblers. In other words, those prisoners who gamble at all, seem to do so at a problematic level. The high prevalence (5–10 times higher compared to general population) of problem gambling is confirmed by several other studies (Turner et al. 2017; Banks et al. 2020). The finding persists among both men (Abbott et al. 2005) and women (Abbott & McKenna 2005). Generally, despite the high prevalence, there are still relatively considerably few studies on gambling problems among prisoners, especially in the European context. In Hamburg, Germany (Zurhold et al. 2014), 7.5% of male prisoners and 3.6% of female prisoners were identified as problem gamblers. Almost half of them (46.7%) had been convicted for a problem gambling-related crime.

Different screening instruments give slightly different results on the prevalence of problem gambling. Turner et al. (2009) explored the prevalence of problem gambling among male prisoners using three different screening instruments: PGSI (Problem Gambling Severity Index), DSM-IV-TR (a questionnaire based on the 4th edition of the Diagnostic and Statistical Manual), and SOGS (South Oaks Gambling Screen). Some variance was discovered using different instruments, as PGSI gave a prevalence of 9.4%, DSM-IV-TR indicated 6.3%, and SOGS found 13.0%. Moreover, in this study, most of the prisoners (65.2%) with severe problem gambling had been convicted for a problem gambling-related crime. For those with less severe but still problematic gambling, about one fifth had a problem gambling-related conviction. In this study, gambling problem is related to only property and financial crimes, not violent crimes.

A review by Turner et al. (2017) revealed that gambling problems are not sufficiently recognized in the criminal justice system. The awareness of the nature of gambling problems is rather low among judges, lawyers, prison guards, and other prison and parole officers. Brooks and Blaszczynski (2011) studied court decisions on problem gambling-related cases in England and Wales. The cases studied by the researchers imply that problem gambling was recognized as a phenomenon, but gambling problems were not considered as mitigating factors in the final decisions. Accordingly, an Australian study (Crofts 2003) on the juridical processes of economic crimes committed by problem gamblers indicates that already due to the shortage and controversial results in academic studies, it is difficult to define the role of problem gambling as a mitigating factor in the decisions. Despite this, in some jurisdictions, for example in the US states of New York or Nevada, it is possible to be enrolled in a specific gambling court program where gambling problems are considered in criminal justice sanctions—however, the condition for being applicable to these programs is usually that the convicted individual is able to pay back the embezzled money.

There is evidence that gambling behavior itself is associated with crime (Tessényi & Kovács 2016). In their study, May-Chahal et al. (2016) discovered that problem gambling was not only more prevalent among prisoners but also that one certain gambling behavior—chasing losses—was linked to the frequency of criminal convictions. Clark and Walker (2009) found that greater gambling losses increased the odds to criminal behavior, but this did not apply for lottery and casino gamblers.

There is also an association between gambling and antisocial behavior (e.g., Mishra et al. 2011; Mishra et al. 2017), which might be explained by impulsivity (Blaszczynski 1998). Thus, crime has even been interpreted as a form of gambling and risk-taking. Vice versa, gambling is seen to provide a way to express one's risk-taking personality traits (Meyer & Stadler 1999). Blaszczynski (1989) interviewed help-seeking problem gamblers in a support group. More than half of the participants had funded their gambling using illegal means. The participants were classified into four categories: 1) those who had not committed any crimes (36.7%), 2) those who had committed only problem gambling-related crimes (40.4%), 3) those who had committed only non-problem gambling-related crimes (9.2%), and 4) those who had committed both problem gambling and non-problem gambling-related crime (13.7%). Compared to the other three, antisocial personality traits were significantly more common in the latter group. This notion can be meaningfully reflected to the pathways model by Blaszczynski and Nower (2002), where problem gambling may be framed by antisocial and risk-taking personality traits as well as cognitive problems and social conditioning.

Turner and his colleagues (2009) explored the problem gambling prevalence of prisoners and the connection between their gambling and criminal behavior. The severity of problem gambling was defined using SOGS. The relationship between crime and gambling were coded into four categories: 1) gambling led to crime, 2) criminal lifestyle led to gambling, 3) an unclear two-way connection was present, and 4) no connection existed between gambling and crime. In this study, 65.2% of the respondents with a severe gambling problem reported that their gambling had led to crime. These crimes were related to gambling debts and funding their problematic gambling using illegal means. Prisoners with a less severe gambling problem reported more often that their gambling was part of a lifestyle: the money gained from a criminal lifestyle is easily channeled into gambling.

Some studies have suggested that co-occurring financial hardship is a significant risk-factor for problem gambling-related crime. Lesieur (1977, see also Meyer & Stadler 1999 and Brown 1987) depicts the link between problem gambling and crime as a spiral, where the gambler is burdened by an ever-growing pressure to fund their gambling and to cover their losses. This vicious cycle is supported by later studies (Ledgerwood et al. 2008). More generally, a strong association between debt and crime is reported in criminological literature (Hoeve et al. 2014). As observed by Crofts (2003) through court documents of property crimes committed by problem

gamblers, the convicted individuals had not sought help because they were still able to fund their gambling by using illegally gained money. Previous studies suggest that gamblers seek help too late, typically only when they run out of options and money (Heiskanen 2017).

Both gambling and crime can induce strong feelings of guilt and shame. Severe problem gamblers have an increased risk for suicidal thoughts and attempts (Black et al. 2015). The problem gambling-related suicides studied by Blaszczynski and Farrell (1998) sometimes were preceded by criminal activity to fund gambling. Among problem gamblers, risk factors for suicide include depression, large financial debt, and relationship problems (Blaszczynski & Farrell 1998).

According to Lesieur (1979; 1992) the problem gambler's decision to resort to criminal activity is framed by five factors: 1) opportunity, 2) external agents of social control, 3) beliefs and justifications, 4) diminishing of opportunities, and 5) external threat. This idea by Lesieur is a somewhat similar approach to routine activities theory (Felson & Cohen 1980): crime occurs when the opportunities to fund gambling grow short and legal means are no longer possible—in other words, crimes occur when there is a motivated offender, a suitable victim, and a lack of surveillance.

Problem gambling-related crime can also be linked to the relationship between substance, alcohol, and criminal behavior. According to Brown (1987), crimes perpetrated by problem gamblers are similar to those committed by illicit drug users as they are both usually property crimes, and alcohol leads more often to violent crimes. An Australian study (Le & Gilding 2016) explored gambling and problem gambling of Vietnamese women convicted of drug-related crimes. For these women, the casino was a place for meeting people and networking, having independence, and engaging in experiences of human agency. At the same time, casino gambling caused serious financial trouble for the women, which eventually they tried to solve by committing drug-related crime, such as cannabis growing and smuggling heroin. The sub-culturesque community created around casino gambling and its networks provided both an opportunity and motive (through gambling) for drug-related crime. Over half of the studied women reported that they had started the criminal activity because of their gambling debt (Le & Gilding 2016).

Typically, however, crime induced by problem gambling occurs in the immediate everyday environment, at home, or at the workplace (Sakurai & Smith 2003; Crofts 2003). In a Swedish study by Binde (2016a, 2016b), problem gambling-related

embezzlements at the workplace were analyzed using newspaper articles. According to the study, such crimes happen in all industries and fields of employment where the employees have access to the company funds. In Sweden, problem gambling-related embezzlements are estimated to be uncovered weekly. Binde (2016a) estimates that at least 90% of all such problem gambling-related embezzlements remain undetected. In some industries, such as banking, the embezzled sums can be considerably significant, and the criminal activity is cyclic in nature, consisting of several different incidents. Problem gambling-related embezzlements at the workplace are probably resulting from the dynamic processes between different environment factors of everyday life and psychological mechanisms of problem gambling (Binde 2016b). Referring to Cressey's (1973) criminology, Binde (2016b) discusses problem gambling as a "non-sharable problem." According to Albanese (2008), one central factor behind problem gambling-related white collar crime is that the financial hardship could have not been shared or that they were threatening family relations. Such findings imply that preventing problem gambling-related crime requires ethos where problem gambling or financial hardship is not stigmatized and shamed. Unlike substance addictions, the detection of problem gambling can be considerably challenging in the workplace (Griffiths 2005). Some initiatives for increasing problem gambling awareness in workplaces have been introduced in Finland.

2.3.6   Problem gambling and intimate partner violence

The pressures caused by excessive gambling can erupt in many negative ways into the social environment of the gambler. In addition to money, gambling consumes time and it can cause friction by penetrating the temporal and financial boundaries committed in one's relationship. The negative feelings related to the gambling problem, such as anxiety and shame, can be projected violently to family members. Intimate partner violence can be emotional or physical. Emotional violence consists of control and verbal abuse, for example, and such violence can also be coercive financial control committed by the gambler to access money for gambling to hide their gambling or to ease their guilt and blame the partner for their gambling (Banks & Waters 2021). Some studies suggest that women are at a higher risk of being victimized and abused by their problem gambling partner (Hing et al. 2022a; Hing et al. 2022b). Furthermore, problematic relationship and experiences of physical or emotional violence can also contribute to the emergence of problem gambling.

Most of all intimate partner violence is suffered in silence and remains unreported to any official statistics. This outcome is probably the case with problem gambling-related intimate partner violence. Such an intimate subject might not be understood as a crime at all and is left inside the family (Michailic & Elliot 1997). There is evidence, however, that problem and pathological gambling are connected to being both a victim of IPV and a perpetrator of IPV (Roberts et al. 2016; Afifi et al. 2010). Of problem gamblers studied by Korman et al. (2008), 62.9% reported violence in their close relationship. Among problem gamblers, IPV was more common compared to the general population, for both men and women and for both victim and perpetrator. The severity of problem gambling for an intimate partner also predicts IPV victimization (Liao 2008; Muellman et al. 2002). The risk is further increased for women, whose partner had a comorbid alcohol problem. Problem gambling predicts both physical and sexual violence, impulsiveness, and relationship problems (Brasfield et al. 2012). One study found that substance users who are prone to the use of violence also have greater odds of having a gambling problem, compared to non-violent substance users (Cunningham-Williams et al. 2007). Alternatively, an Australian study (Lavis et al. 2015) found no statistically significant difference in gambling behavior or alcohol use between violent and non-violent problem gamblers.

2.4 CRIME AS A SOCIOLOGICAL PROBLEM

2.4.1 Defining crime

The narrow legal definition of crime is that crimes are simply acts that have been defined in the criminal code. Even though from the viewpoint of law these acts can seem homogenous, their social and psychological context vary considerably. As noted by Laine (2000), the monolithic phenomenon called crime exists only in the criminal code. In practice, crime is framed by an almost infinite number of surrounding background factors. As little as there is no quintessential phenomenon of homicide, there is no archetypical gambling-related crime. What makes this conceptualization complex is that gambling can be related to any kind of crime type.

Criminology has provided several theories to explain criminal behavior, varying in their definitions of what criminal behavior is. A solid and integrated criminology

would require a consensus over these definitions, whether crime is driven by determinism or active human agency, and, the answer to more ontological questions, such as how reality, human behavior, and society operate and are structured. Currently, such harmony does not exist. Therefore, the various theories of criminology are merely perspectives and each provides a partly correct explanation that is not sufficient alone. However, some attempts have been made to create an integrated theory of crime by classifying concepts derived from empirical evidence and factors related to criminal activity. Most notably, Agnew's (2005; 2011) integrated theory of crime categorizes predictors into different life domains (i.e., self, family, school, peer, and work domains) to depict the reciprocal dynamics of background variables related to criminal activity. According to Agnew, a criminal act is a) harmful, b) condemned, c) judged by the community, and/or d) punished by the state.

One central problem in defining crime has been whether societies are built on the foundation of shared values or if there is a conflict between these values. If there is a consensus over these values, crime can be considered as an incapability to adapt to these shared values. Conflict perspectives recognize that such consensus does not exist and the criminal code is essentially a use of power by the hegemonic group.

2.4.2 Criminological theories of crime and problem gambling-related crime

According to Banks (2017), gambling-related criminal behavior can be considered through three different levels of theories. Individual theories emphasize the role of personal characteristics, such as impulsivity. The interactional theories see the emergence of criminal behavior from the viewpoint of social bonds and relationships. Finally, social structural theories stress the importance of more systemic aspects and societal change. This section offers an overview of a few classic criminological theory traditions to understand how they might be applied to problem gambling-related crime.

The tradition of labelling theories is built on the assumption that the criminal act is inherently connected to the social reaction it causes. In other words, somewhat similar to the concept of self-fulfilling prophecy, the supervision and control directed at a certain group is thought to deepen the deviance experienced by the group members. According to the tradition, a person who commits a crime is labelled as a criminal and thus loses a significant number of available options and courses of

action. Theories of this tradition are widely used to explain reoffending. When different individuals and groups are negatively labelled and categorized as deviants, these actors treated as deviant individuals find each other, thus strengthening the experience of deviance and accordant patterns of behavior, to which the control was subjected in the first place. Regarding problem gambling, studies (Hing et al. 2016) have confirmed that reducing shame and stigma is considerably important from the viewpoint of help-seeking, treatment, and recovery. Shame and stigma are hazardous to psychological welfare components such as self-esteem and self-efficacy.

Gambling, illegal or legal, is also a strong part of many subcultures. Professional gambling can be considered as an alternative to paid work in a social setting where gambling is illegal. What appears to be normlessness from the viewpoint of hegemonic culture may not be so from the subcultural standpoint. In other words, it is not necessary to define criminal behavior as deviance, but instead as a sub- or counterculture. Individuals who live against the values of mainstream culture do so from the basis of the communities, lifestyles, and their own normative and moral codes with which they identify.

Like theories of anomie, subcultural theories are based on an idea that crime is a reaction of the marginalized groups to structurally and culturally framed problems. These groups develop their own, completely opposite norm systems to the hegemonic culture; for example, various groups promote violent behavior in certain situations. Subcultural theories have been used to explore delinquency among youth, and empirical evidence also supports the effect of subcultures.

The effects of social place and space on criminal behavior are described as ecology, a term borrowed from natural science. Ecology is defined as studying regularities and patterns of behavior in people who are living in the same space. One of the most central traditions in urban sociology was born in the 1920s in Illinois, USA. By observing the urban dynamics and areal structure of Chicago, the researchers Park and Burgess (2019) identified five different zones: the business zone in the core of the city, the transformation zone, the steady blue collar residential zone, the middle class residential zone, and the suburbs on the outskirts of the city. The researchers studied the traditions, customs, and functional practices of these different zones, and the structure still applies to many North American urban areas. From a criminological point of view, the most interesting findings are related to the transition zone, which is located on the edge of the business zone where the

population is high, rents are low, social control is weak, and the physical changes in the environment are rapid. According to the researchers, people in this zone cherished constant patterns of criminal behavior, which were passed on to the new habitants. These observations made by the Chicago school about space, social dynamics, power, and crime have laid the foundations of different learning theories and hot spot analysis for criminology. Such hot spot analysis has also been used to explain gambling-related crime to better understand how criminal behavior arises near gambling venues, for example. Similar to strain theory, the ecological model of the Chicago School suggests that criminal behavior arises from the dynamics between the society and the subject's socioeconomic status, which essentially stems from extreme need. A lack of a social support network, the early adoption of deviant or pro-criminal values, and a social environment that cannot control such activity are considered to contribute to criminal acts (see also Mestre-Bach et al. 2021).

From the viewpoint of economics, the human is often considered as homo economicus, a being that constantly uses the available information and calculates what is the best and most profitable option. From a criminological theory of rational choice, this understanding means that the decision to engage in criminal activity is simply a result of weighing risks and profits. Those who commit crimes simply see them as a solution to their problems, financial or otherwise (Mestre-Bach et al. 2021). In this approach, the positive consequences of criminal activity are seen to outweigh the possible negative consequences. Similar to general strain theory, gamblers who suffer from negative emotional states caused by financial hardship, may rationalize that criminal behavior is the best available option to overcome these issues.

One of the most central family of theories in criminology are the control theories. Their gloomy Hobbesian idea of humankind suggests that everyone is a potential criminal and only kept in order by using control, which among the tradition is divided into self-control and social control. Following the thoughts of control theorists, individuals who are weakly attached to the community will, without exceptions, maximize their own advantage regardless of any social norms, any time possible. When there is no supervision and no sanctions are expected, any individual can choose to be violent and deceitful—in this understanding, instead of being considered as a sort of subcultural consequence, crime is a deterministic principle for each person whenever they have weak attachment to society (Hirschi 1994). For Hirschi, humans are driven to rule obedience by four elements: attachment, commitment, participation, and beliefs. According to the theory, unofficial social

control is the key to crime prevention. First, the protective factor is attachment to law-obedient individuals, which increases the sensitivity to the opinions of others. Second, individuals are committed to society by giving their time to it, and third, individuals participate in the community by using their energy to engage in tasks valued by the community. Finally, belief in common values can prevent the individual from deviating from the patterns of behavior of the community. In this respect, as already noted, gambling has been actively promoted and marketed as an almost virtuous activity by the state. As an activity, gambling has been valued by the community for decades, and it has been considered as part of good citizenship. At the same time, the problems and harms, including criminal behavior, associated to gambling have been overlooked for a long time.

Gottfredson and Hirchi (2017) stress that maintaining the balance between impulsivity and self-control is the core element of crime prevention. As suggested by the pathways model, gambling and crime, among other activities, can be used as a medium to satisfy one's impulses. Individuals who cannot wait to receive satisfaction can use criminal behavior to satisfy their impulses fast and straightforwardly. In this respect, early childhood and socialization become crucial as they can directly affect impulsivity, risk-behavior, and the frustration threshold. Any kind of crime can be seen as an exciting activity, which involves the use of power, and thus it can satisfy some impulses as such.

Crime is also viewed as a learned and normalized behavior. Learning theories consider criminal activity as an inevitable side product of the social environment. The classic learning theory by Edwin H. Sutherland (1992) emphasizes that criminal activity, as any other activity, develops in social interaction with other individuals and in the social environment. Among the tradition of learning theories, this process is referred to as differential association: the techniques, motives, and justifications for criminal activity are learned in a group, together with other individuals engaged in criminal activity. The strength of such effect is affected by the frequency and intensity of the exposure.

In a group of peers, the criminal activity can be used to strengthen the social bonds between members. Accordingly, the social environment can support a non-criminal lifestyle. For Matza and Sykes (1957), techniques of neutralization are in the core of learning processes that lead to criminal activity. These learned techniques can be thought of as a certain discourse, which aim to justify the criminal behavior.

According to this tradition, offenders are not morally deviant individuals, but rather, they have to cope with their feelings of guilt as anyone else. The values and moral principles of the hegemonic culture are recognized, but they are interpreted differently to protect their self-image. For Matza and Sykes, guilt is dealt with using five techniques: appeal to higher loyalties, deny responsibility, deny harm or injury, deny the victim, and condemn the condemners. Later, Matza (2018) further developed the theory by introducing the concept of drift, which refers to a certain periodic or episodic nature of criminal behavior: due to weakened control, adolescents are able to flexibly drift between obeying the moral norms and breaking them. Empirical evidence partially supports the theories of neutralization, but at the same time, they confirm that the neutralization is only a weak predictor of deviant behavior (Fritsche 2005).

2.4.2.1   Strain theories and problem gambling

In criminology, the tradition of strain theories is based on the assumption that different strains experienced by people can lead to criminal behavior. The conceptual roots of strain theories can be, to some extent, traced back to Émile Durkheim's (2005) classic term "anomie," which refers to a situation where society is, for some reason, unable to provide norms for its members to aid decision-making. Durkheim proposes that needs—except for physiological needs—can occur unlimitedly, and to ensure the function of society, socially created restrictions and boundaries must be created for these needs. The society needs to define socially acceptable means to satisfy these needs. The lack or controversy of such means, restrictions, and boundaries is referred to as anomie. This concept also refers to the weakness of these norms, their ambivalence, or in the most extreme form, a total lack of norms and anarchy. The Durkheimian concept of anomie has been used to explain deviant behavior and crime. One extension of this understanding is the sociology of Robert Merton (1938). While Durkheim essentially states that culture regulates human needs, Merton argues that culture creates human needs. Crime is considered to stem from the inherent imbalance of normative goals and available means. When society is weak and cannot provide its members restrictions and moral guidance, the needs created by the society itself cannot be satisfied by using legal means. Therefore, crime is a reaction to an inequal situation, where certain goals are highly valued but not all the members of society receive the same opportunities to achieve these ideals.

The foundation of this theory is the controversial idea that society is built on a hierarchical class structure, but at the same time, shared values of financial success and welfare are present. Moments of transition, such as industrialization, have particularly proven to be critical in this respect. According to the theory, crime peaks when new goals are formed, but the regulation of pursuing them is still incomplete, and individuals have not yet adjusted to the new situation. Furthermore, if failures to attain these goals, such as wealth or a certain lifestyle, are socially seen as rooted in inherent personal weakness and the impotence of character, the pressure of success and achievement can become substantially intolerable. Later, criminologists such as Albert Cohen (2003) have argued that crime as a reaction of the lower socio-demographic groups to the imbalance of socially set ideals and available means.

Classical strain theories (see Agnew et al. 1992) were developed under the assumption that unless people are able to secure their socioeconomic status using legal means, they are tempted to turn to illegal activity to achieve their goals. The criticism of strain theories mainly focuses on the theories' ability to only explain the criminal behavior of lower classes. Ultimately, the only motive recognized by the strain theories is improving one's financial situation, and the only obstacle for achieving one's goals is their class position. In addition, the theory is unable to explain why only part of strained populations commit crimes. The operationalization of the socio-economic strain is quite difficult, and little empirical support to the theory seems to exist when other relevant variables are controlled for.

To overcome these issues, American criminologist Robert Agnew (1992) developed a generalized strain theory of crime, which also accounts for other forms of strain than merely the socio-economic strain. According to Agnew, the pressures that manifest as crime are present in three different forms: 1) a failure to attain positively valued goals, 2) the loss of positive stimulus, and 3) the presence of negative stimulus. Agnew argues that pressure towards crime is also created by situational and environmental factors as well as factors related to personal history and psychology, such as anger, frustration, and rejection. Such environmental factors that might contribute to one's goals and create pressure towards criminal behavior may include family, school, work, and peer-groups. For example, people can live in a district where the risk of sanction is smaller. Alternatively, their peer-groups can be the source of a considerable amount of pressure towards (or protection from) criminal behavior. These additions also make the theory more relevant to explain the criminal behavior among the middle class, for example.

Empirical evidence supports general strain theory not only as a valid theory for understanding criminal behavior but also for understanding deviance more broadly. General strain theory is supported by various studies on crime, delinquency, substance abuse, aggressive behavior, violent crime, white collar crime, stalking, and self-destructive behavior. Even though studies have not specifically tested the general strain theory, Malkin (2021) proposes that many aspects of the general strain theory can also be applied to problem gambling and gambling severity, such as cumulative strain caused by traumatic, stressful, and negative life events. While only a few studies have applied general strain theory to gambling, these studies suggest that an association exists between negative life events, cumulative strain, and problem gambling (Malkin 2021; Cheung 2015; Eitle & Taylor 2010; Greco & Curci 2017). In the spirit of Jacobs' general theory of addictions (see Greco & Curci 2017; Gupta & Derevensky 1998), gambling is interpreted as one stress-coping strategy among others.

2.4.2.2   Routine Activities Theory and Problem Gambling

Developed by Stanley Cohen and Marcus Felson (1979), routine activities theory stems from the lifestyle theory tradition. The main idea is that the organization of mundane everyday life and changes in these patterns affects both quality and quantity of crime. Everyday life consists of various routine activities, such as household chores, work, and different leisure activities. One simple example is going to work: when people are at work during the day, houses remain unsupervised, and burglary becomes possible. Similarly, due to technological progress and the rise of living standards, more homes contain various interesting targets for burglaries, such as electronics.

One example of such rapidly changing field of everyday life could be online gambling. Technological changes are so fast that national laws and regulations can no longer provide a functional framework for the activity. Ogburn (1957) refers to such situation with his concept of cultural lag: technical changes happen more rapidly than cultural changes.

According to the routine activity theory (RAT), the occurrence of a criminal incident requires three conditions to be present at once: a likely offender, a suitable

target, and a lack of a capable guardian. One adaptation of RAT is depicted as a crime triangle, as in Figure 1. Developed by John Eck (in Felson & Boba 2010), the inner triangle contains the necessary elements of crime to occur: an offender, a target, and a place. The outer triangle illustrates the essential supervisors of each element. The place has its manager, the target has its guardian, and the offender has a handler. The managers control the physical surroundings. The handlers, such as significant others and family, discourage misbehavior of the possible offenders, whereas the target is supervised by its owner.

Figure 1. The Crime Triangle by John Eck (Felson & Boba 2010)

Applying these thoughts to gambling, gambling may significantly contribute to the emergence of each factor. For example, the presence of a gambling facility can generate suitable targets itself by attracting tourists with a significant amount of cash, valuables, and risk-taking attitudes. The immersion of gambling can weaken the gamblers' perceptual abilities, whereas intoxicated casino patrons may be even more suitable targets, for example for thefts. In addition, excessive gambling can bring out desperation that exposes the player to a greater risk of both becoming victimized and committing a crime themselves. The various sensations induced by gambling are not solely positive. Losing crucial sums of money can lead to shame, desperation, and aggressive behavior. Simultaneous use of alcohol can further trigger violent behavior. At the same time, gambling has the potential to attract already existing motivated offenders, including organized crime: in other words, gambling can be used as a medium for crime. For organized crime, problem gamblers can appear as suitable targets of predatory lending and violent loan sharking.

3 RESEARCH OBJECTIVES

The main objective of this PhD research is to explore the possible associations between problem gambling and criminal behavior in the Finnish context. Previous studies suggest that the relationship between problem gambling and criminal behavior is complex. To better comprehend the intricate dimensions of the relationship, four different perspectives and points of data collection are utilized:

1) Problem gambling in the police information system: The study attempts to explore how problem gambling was presented in relation to the crime suspects reported to the police and in the preliminary investigation documents produced by the police. The primary objective of Article I is to discover the role of alleged problem gambling in the collected cases. The study also aims to qualitatively categorize the possible causal pathways between problem gambling and crime as well as to map the possible common features that the events and suspects shared.

2) Self-reported stealing and cheating among help-seeking problem gamblers: Article II evaluates the psychosocial conditions, socio-economic individual features, and the gambling-related background factors that predict self-reported cheating and stealing to finance gambling. The goal of the sub-study is to model the psycho-social situation of a criminogenic gambler. The main hypotheses were formed based on previous empirical research and the previously introduced theories. Using logistic regression, the study assessed whether a longer history of problem gambling is associated with cheating or stealing due to problem gambling. In addition, based on previous literature, the early starting age of gambling is assumed to increase the risk to having cheated or stolen because of problem gambling.

3) The prevalence of potential problem gambling and the need for support among Finnish prisoners: The third sub-study explores the prevalence of potential problem gambling among Finnish prisoners in two prisons. In

addition, this study assesses the relationship between potential problem gambling, the starting age of gambling, problem gambling onset, demographics (e.g., age, gender, and marital status), substance use (e.g., alcohol, smoking and narcotics), and crime-related factors (e.g., crime type, prison type and previous sentence). Finally, the study maps the need for support and support preferences of the prisoners who reported their interest to receive help for their problem gambling.

4) The relationship between having a conviction and gambling severity in the population level: The fourth sub-study examines the possible associations between gambling severity and criminal justice convictions in the period of five years. Confounding sociodemographic factors associated with gambling and criminal behavior that has led to a conviction is tested. The findings are discussed from the viewpoint of welfare state accountability and the Finnish gambling system.

The results of the four sub-studies are then reflected against the general strain theory and the routine activity theory frameworks. Earlier literature supports the understanding that problem gambling-related criminal activity partly stems from extreme socioeconomic pressure and psychological distress. According to previous studies (Bellringer et al. 2009; Sakurai & Smith 2003), criminal behavior is typically a late-stage serious consequence of problem gambling. Problem gamblers are shown to have increased risk to various other hazardous activities, such as crime, comorbid conditions, and socioeconomic disadvantage. Alternatively, a large body of research argues that the prevalence of problem gambling is higher among offenders. From four different methodological angles, this study explores whether problem gambling and criminal behavior are connected to larger scale socioeconomic disadvantage.

4   DATA AND METHODS

Methodologically, the challenges faced in the study of problem gambling and crime are essentially the same as the general challenges in criminology. The crucial problem in the study of crime is that only a considerably small portion of overall crime is reported to the police and is recorded in official registers. The overall understanding of problem gambling-related crime cannot be achieved by studying only official documents or register data kept by the police, since part of problem gambling-related crime is likely conciliated privately, for example inside the family or at the workplace. Problem gambling-related online crime may go unnoticed, and gambling companies may be reluctant to publicly report such cases for fear of damaging their reputation. Problem gambling-related crime can also involve illegal gambling communities, which are considerably difficult to reach.

Considering criminal investigation by the police, the role of problem gambling in crime can be difficult to define. Even if present, such connection may remain unreported in the notes written by the police as it is considered an unimportant detail from the point of view of solving the course of events. The crime report material includes the interpretations about the events made by the officer in charge of the investigation. In addition, the documents mirror the personal emphasis of the interrogated persons. Overall, the data provided by these documents are affected by the social dynamics and the structure of the interrogation situation. Moreover, individual differences in the practices of record keeping and interrogation can lead to underreporting details about problem gambling. Furthermore, the material is produced solely for the purpose of criminal investigation and possible legal proceedings, not for such a study about gambling.

Gambling-related crime has not been unambiguously defined. In gambling-related crime, gambling is one of countless other affecting factors. Various contextual factors affect how the role of gambling in crime is presented. Gambling-related details are assumed to be told (and asked) with a different focus in a problem gambling support group compared to a police investigation.

For a researcher interested in the relationship between problem gambling and crime, three main approaches exist for data collection. First, the studies have focused on help-seeking problem gamblers themselves. Using such a setting, respondents who are defined as problem gamblers (i.e., self-identified or screened using an instrument) are inquired, for example, whether they have committed crimes, whether these crimes have been partly or completely motivated by their problem gambling, or whether they have been a victim of a crime. Another starting point is the offender population: data can be collected using court documents, police records, and surveys of prisoners, for example to explore their relationship to gambling. Finally, criminology has a long tradition of self-report studies and victim surveys: the relationship between problem gambling and crime can be explored among the general population by inquiring, for example, whether an individual has committed crimes due to their gambling or whether they have been a victim of a crime due to someone else's gambling. Problem gambling-related population survey data can also be combined with register-based data on convictions.

In practice, any type of crime can contain elements involving gambling. Due to these various methodological challenges, this dissertation focuses on the connection between problem gambling and crime.

Estimating the extent and costs of problem gambling-related crime is nearly impossible. Walker (2003) indicates two methodological challenges that make such cost estimates difficult: 1) these costs are not defined in a standardized way, and 2) no method exists to systematically estimate these costs. In other words, there is a lack of useful and methodologically sound data. The problem is that going beyond one static moment and exploring causal relations between gambling and crime is considerably challenging. For example, criminal behavior is connected to gambling via a considerably complex network of environmental- and personality-related factors. To some extent, this complexity is also the case with gambling and gambling-related harm more generally. This intricacy is easily used to diminish the harms caused by gambling operators and to misdirect the attention of critics towards other factors than gambling itself.

4.1 Data

4.1.1 Finding gambling-related crime reported to the police

For the aforementioned reasons, finding problem gambling-related crime reported to the police is challenging. Any type of crime can involve an element of gambling, for example a lottery coupon can be found from the crime scene or a witness could have been playing a slot machine and this detail is then reported in the notes taken by the police. The starting point of the data collection was the police information system and its database of crime reports. Prior to this project, a Boolean word search method for finding gambling-related cases was developed by Kuoppamäki et al. (2014), utilizing a set of keywords based on 1) previous research, 2) gambling-related common knowledge, and 3) an active testing of keywords. This method and the cases found during the process formed the cornerstone of Article I.

Developing the list is comparable to Bayesian thinking: the found cases increase the knowledge of the phenomenon and each found case can add keywords to the list. The initial phase was to read Finnish gambling studies and to select suitable gambling-related keywords from these studies. Next, more search terms, such as names of different online casinos, were collected using search engines. Finally, these search terms were tested in the crime report database to determine which terms produced the most hits. By reading the cases it was possible to determine whether the case was gambling-related or not.

Using this method, 2,233 cases including a gambling-related keyword were found (Kuoppamäki et al. 2014) from the database. The timeframe used was crime reported in 2011. By reading the descriptions of these cases, the researchers concluded that 737 were more strongly related to gambling. A central result from the study was that the relationship between gambling and crime was rather weak in the majority of the cases. The found cases were categorized into six different groups: 1) suspected online gambling-related crimes, 2) suspected lifestyle gambling-related crimes, 3) suspected crimes that involved a gambler as a victim of a crime, 4) suspected criminal activity related to problem gambling, 5) casino-connected crimes, and 6) intimate partnership violence related to gambling. The study suggests that criminal activity connected to gambling in Finland was mostly rather minor. Two-thirds of the suspected gambling-related crimes were property and economic crimes, and payment

fraud was the most common crime (23%). Payment fraud most often refers to the improper use of the victims' credit card on an online-gambling web site. The category lifestyle-gambling typically refers to crimes that happened during a gambling episode. The cases included minor offences, such as stealing, vandalism, or minor assaults. In these reports, the criminal act is committed in connection with or simultaneously with gambling and is typically linked to gambling-related negative emotions and aggression.

Stemming from this data and this categorization, Article I focuses on problem gambling-related crimes. This focus was selected because the relationship between gambling and criminal behavior appeared to be most straightforward in such cases. In Article I, a similar word search method was used for the same year, and preliminary investigation materials of the found cases were collected.

4.1.2   Crime reports recorded by the police

Anyone who suspects that a crime has been committed, has been involved in such an incident, or has been a witness of a crime can file a crime report. These reports are registered to the Police Information System. The Criminal Investigation Act obliges the police to start the pre-trial investigation if there are "reasonable grounds" to suspect that a crime has occurred after they consider the report and the disclosed facts. The report of a crime includes information about the individual who filed the report, the time and place of the incident, suspected perpetrators, suspected victims, and other parties. Crime reports in the database also include an investigation memo, which is a free-form description of the events written by the investigative police. This part proved especially fruitful to identify problem gambling-related suspects in the Police Information System. If problem gambling was in a significant role in the process of the crime, it was usually mentioned in this descriptive memo and was thus found by the word search method.

The mentions in the preliminary investigation documents about problem gambling are random; based on the judgement of the suspect, witness, or the investigative police; and do not usually offer much information about the gambling behavior or its connection to the suspected crime. All reported, suspected crimes may not be crimes, and all actual crimes are not reported. From the perspective of a

researcher, this conundrum leads to a situation where generalizable findings cannot be made using data derived from such documents. Instead, it is possible to typologize and describe different connections between problem gambling and criminal behavior. Producing such information is an important step in gaining a more in-depth understanding of the phenomena and how these issues possibly interact.

The factors affecting the frequency of the crime reported to the police also include factors other than criminal behavior-related ones. Such factors include changes in the criminal law, the susceptibility of the victims and other parties to report crime to the police, the efficacy and allocation of crime control, and changes in the statistical processes and registering of the crimes by the police (Kivivuori & Salmi 2005). In addition to the observations made from the documents produced by the police, it is important to approach the relationship between problem gambling and crime using other sources of information. By doing this, it is possible to determine whether the background factors in problem gambling-related crime reported to the police differ from the self-reported crime by the problem gamblers.

4.1.3   Preliminary investigation material produced by the police

A preliminary investigation is started if the police suspects that a crime has been occurred, based on the information given by the person who filed the report of a crime. At this point, all the cases are still suspected crimes. Whether a crime has occurred is ultimately solved in the trial and legal proceedings. The purpose of the preliminary investigation is to produce materials for the needs of this process, based on which it can be decided whether the case meets the legal criteria for a crime. Problem gambling-related suspected crime was analyzed using data derived from the preliminary investigation documents in Article I.

The preliminary investigation documents also include interrogation transcripts. The type of details documented by the police largely varies on a case-by-case basis. Depending on the crime, the preliminary investigation documents may contain photographs of the crime scene, e-mails, bank statements, and different expert statements. In complex, large-scale cases of financial or violent crimes, the preliminary investigation materials may consist of hundreds of pages, whereas

smaller cases can include only one or two pages. This information is gathered to help the court decide whether the crime has occurred and who is responsible.

The most straightforward information about the background of the criminal incident is provided by the interrogation transcripts, which usually contain the summarized viewpoints of the suspected perpetrators, victims, and other relevant persons about the criminal incident that such individuals told the police during the interrogation. In most cases the transcripts are not direct transcripts of what the interrogated persons said, but rather, they are a summary of the conversation written by the police and approved by the interrogated person. They do not usually contain the questions asked or the answers given in a word-for-word manner.

The preliminary investigation materials provide rich data for the study of criminal phenomena. The most crucial challenges are systematizing the data and keeping it integrated. These materials are not produced for the purposes of academic research, but for the practice of police work and juridical professionals. The mentions about problem gambling are largely dependent on the personal practices of the criminal investigators and their readiness to report such aspects in detail. For example, some investigators use more expressive language and provide fuller descriptions.

The interrogations offer several perspectives of the same situation and a multi-voiced story of the events. Both the researcher and the investigator aim for an accurate description of the factors leading to the crime and its motives. In Article I, the cases were found using the word search method. Reading through the cases confirmed that problem gambling had a role in the emergence of the motivation or in choosing the victim or the target of the crime. In each case, gambling was also mentioned as an activity which had occurred before, during, or after the criminal incident. By applying Felson's (2006) classification of criminal incident (i.e., prelude, the incident, and aftermath), the text mass of the preliminary investigation documents was coded into three categories: 1) descriptions of what had happened before the criminal incident, 2) descriptions of the criminal incident, and 3) description of the aftermath of the crime. Using this framework to guide document analysis, different themes emerged from the data.

4.1.4   Time to Fold data

Exploring the scale of problem gambling-related hidden criminality is crucial to understand the findings from the Police Information System and to set them into wider context. Creating such a comparison point was possible using the data collected from applicants to the "Time to Fold" program, which is an online and telephone-based treatment option directed at problem gamblers. The program lasts eight weeks and utilizes cognitive behavioralist therapy, and it also includes self-work tasks in an online environment and weekly telephone discussions with a therapist (five hours in total). "Time to Fold" also offers peer-support groups in an online forum. The program has been a part of Peluuri's services since 2007. Screening data from this program was analyzed in Article II.

Different problem gambling screens reach slightly different aspects of problem gambling, and considerably few of them include a question about problem gambling-related crime. The questionnaire for the program applicants included The NORC DSM problem gambling screen (NODS), based on the DSM-IV diagnostic criteria for gambling addiction. The NODS screen consists of 17 questions with "yes" or "no" response options. The crime-related item was removed from the updated DSM-V criteria, but as the NODS screen is based on the older version of the criteria, it still has a question about problem gambling-related stealing and cheating. The question "During the previous year, have you stolen or cheated money from your family members or other persons to fund your gambling?" is preceded by a question about lying to family members about their gambling and whether this has happened more than three times during the previous year. Despite the inclusion of these questions, it is not possible to explore whether this stealing or cheating has ever been reported to the police or whether the victim was even aware of it. Examining self-reported crime is nevertheless important to understand the relationship between problem gambling and criminal behavior.

The NODS screen scoring ranges 0–10. The cut-offs are as follows: 5 or more points entails a gambling addiction, 3–4 points indicates problem gambling, and 1–2 points indicates at-risk gambling. The sensitivity of the screen has proved good in clinical evaluation (Himelhoch et al. 2015). Problem gambling is not a static state or part of a personal character; instead, its intensity and forms of manifestation can vary over time. For this reason, the NODS screen uses two different time frames,

inquiring about the diagnostic criteria over both the previous two months and the previous year.

Unlike the documents provided by the police, the "Time to Fold" data enabled the identification of associations between various aspects of gambling behavior (e.g., different game types and the intensity and financial consequences of gambling) and self-reported criminality. Such data enables a criminogenic problem gambler to be profiled in the context of help-seeking and enables factors related to gambling behavior that are associated with stealing or cheating to be distinguished.

4.1.5 Pilot study for prisons

The prevalence of problem gambling among Finnish prisoners had not been explored before this present study. The purpose of Article III is to examine the prevalence of problem gambling as well as the willingness to receive tailored help for problem gambling among prisoners in two Finnish prisons. A short questionnaire included a three-item brief biosocial gambling screen (BBGS) and a question about the main crime type and its relationship to gambling. The questionnaire also inquired about previous sentences, substance use, and support preferences for problem gambling. The survey was delivered to the prison wards to be distributed by the prison workers.

The study was conducted in two different types of prisons in Finland: one was a closed high-security prison in Turku and the other was an open prison in Vanaja. The data from Vanaja was collected from two different wards, one for males and one for females.

The data was collected using questionnaires distributed by the prison guards to the prisoners. The prisoners returned the completed questionnaires in sealed ballot boxes. A total of 96 prisoners completed the questionnaires (55 men and 39 women; two respondents did not report gender). The BBGS was included to assess gambling problems. The BBGS is a brief three-item scale that measures different aspects of problem gambling: 1) feeling restless, irritable, or anxious when trying to stop or cut down on gambling; 2) keeping one's family and friends from knowing how much one gambles; and 3) needing to get help with living expenses because of one's gambling. The researchers used two versions of the BBGS with different timeframes. One version referred to gambling in the last 12 months, and the other version referred to gambling during the 12 months before the participant entered prison. The survey included a modified version of the alcohol use disorders identification test (AUDIT-C) to assess problems with alcohol use. The respondents were inquired about smoking in the past year and the use of illicit drugs in their lifetime. The questionnaire also included crime-related items: respondents were asked to report the primary offense (the most serious offense) for their current sentence (e.g., robbery, theft, property crime, violent crime, drug offense, financial crime). Finally, the participants were offered a list of options from which to choose the type of support that they would like to receive for problem gambling. Demographic information included gender, age, and marital status.

4.1.6 Gambling harms survey and register data

Article IV explores the associations between problem gambling and criminal convictions among the general population by using data from the Gambling Harms Survey and register-based background variables provided by Statistics Finland. Data from the Finnish Gambling Harms Survey in 2017 was used (n = 7,186). The respondents were adults (18 years or older) living in three regions in Finland: Uusimaa, Pirkanmaa, and Kymenlaakso. Respondents who were currently in an institution, such as a prison or mental health institution, were excluded from the survey. Respondents completed PPGM, a screen consisting of 14 items. In addition, the respondents were inquired whether they had ever felt gambling was a problem for them. Based on the PPGM scores, the researchers divided the participants into four groups: (1) no gambling, (2) recreational gambling (gambling less than monthly), (3) at-risk gambling, and (4) problem or pathological gambling. Register data derived from Statistics Finland was combined to the matrix to explore whether participants had ever been convicted of a crime during the past five years (2012–2016). The register data also included demographic background variables: age, gender, and information on social disadvantages including education, employment status, income level, and receipt of basic social assistance in 2016.

4.2 Methods

4.2.1 Document analysis in the study of crime

Article I explores crime reports and preliminary investigation materials by using grounded theory based document analysis. As part of the qualitative research tradition, document analysis is usually used together in triangulation with other methods and as complementary to quantitative studies. For Bowen (2009), document analysis is a systematic practice, which can be used to explore both physical and digital documents, which can include text, words, and images, that have

been recorded without the researcher's participation. Bowen refers to Coffey and Atkinson (1996), who define documents as social facts, which are produced, shared, and used in a socially organized manner. The researcher must consider these contexts in which the documents (e.g., the interrogation transcripts) have been produced. To reach meanings and increase the understanding of the observed phenomenon, the collected data is organized into wider themes, categories, and case examples by utilizing content analysis. Documents can be observed from a grounded theory-based approach and by using suitable terms from a theoretical framework to guide coding. Felson's classification of criminal incident was used as a theoretical framework for coding in Article I.

4.2.2 Statistical methods

The data were analyzed using SPSS software (SPSS, Inc., Chicago, IL, USA). In Article II, the "Time to Fold" data was modified into a SPSS matrix, in which the dichotomous (yes/no) variable (i.e., "During the previous year have you stolen or cheated money from your family members or other persons to fund your gambling?") and its associations to various other background variables were explored using logistic regression models. Similarly, logistic regression models were ran in Article IV to explore the relationship between having a conviction (yes/no) during a five-year period preceding the survey and various sociodemographic and gambling-related factors. In Article III, statistical significance was determined using $\chi 2$ and Fisher's exact tests. Detailed descriptions of the statistical procedures and the variables used is found in the original publications.

4.2.3 Studying self-reported crime

Studies on self-reported crime have a relatively long history in criminology. In addition to victim studies, self-reported studies are one of the central methodological approaches to tackle the problem of hidden criminality. Article II details the respondents' answers about whether they have participated in an activity which is 1) principally punishable by the law and 2) socially and morally frowned upon (e.g., stealing and cheating; Kivivuori 2005).

Self-report studies have proved to be satisfactory in their reliability, and the method has been used in studying the criminal behavior among special groups, such

as substance users (see Cartier et al. 2006). Regarding the validity of such studies, people seem to respond truthfully to the questions inquiring about their criminal behavior, at least for the less severe crimes, when the responses are compared to the information drawn from the police data. In Finland, self-reporting studies have been used to explore criminality among students (e.g., Salmi 2008; Kivivuori 2005; Honkatukia 1999). For example, since the early 1990s, the Institute of Criminology and Legal Policy at the University of Helsinki has participated in the International Self-report Delinquency Study (ISRD), which is an international comparative survey on the crime victimization and offending of 12–16 year-olds.

The criticism towards the self-report studies has focused on their alleged tendency to overemphasize less severe crimes. In addition, the method is not considerably sensitive to explore differences between different crime types. For Kivivuori (2005), an optimal measure for crime includes several questions on criminal behavior, ranging from serious to less severe crimes and the frequency of these acts. The "Time to Fold" data contains only one crime-related item. In Article II, however, the focus is on the associations between problem gambling-related stealing and cheating and different sociodemographic and gambling-related background factors, instead of the details of the criminal behavior. More detailed information of the dynamics of the criminal incidents is obtained in Article I.

5   RESULTS

5.1   Problem gambling creates financial chaos and desperation

In Article I, 55 problem gambling-related cases from 2011 were analyzed using data derived from preliminary investigation documents and crime reports. The majority (79%) of the cases were non-violent property crimes, committed at home or at the workplace. Qualitative analysis of the cases revealed that the events before the crime included gambling-related financial trouble, emergence of suitable opportunity to crime, and loss of life-control, including depression, substance use, and/or relationship problems. Financial trouble referred to a situation where the debt had increased to an intolerable amount because of a destructive cycle of gambling and loaning money. Gambling had continued with all available legal means possible, and the crime was in a way a continuum to legal lending. For example, when the loans were no longer possible using their own IDs and banking details, loans were then taken using the IDs of a close one. The extent of gambling was typically hidden from their close ones. The stories told by the suspects and victims were characterized by the strong presence of their everyday environment. In most of the property crimes found, the incident did not include a radical shift into a criminal subculture or the planning of a violent robbery, but instead, the crimes occurred where the gambling and other everyday life took place, stemming from the immediate environment of the perpetrator. In accordance with the routine activity theory, socially organized everyday routines seem to affect to the quality of crime. Gambling is a routinized activity in Finland and an almost institutionalized part of consumer culture and environment. Culturally valued lifegoals and dreams are channeled through gambling. At the same time, the online environment is faceless and anonymous, which gives an easy access to the bank accounts, IDs, and telephones of the close ones. Online and mobile money transactions are swift and enable large debts to be quickly accumulated. Being a caregiver to a spouse or a relative can also open access to resources.

According to the documents, sometimes the suspects had gambled while intoxicated and had drunken arguments with their family members. However, it

remains unclear whether heavy alcohol use or depression preceded the problem gambling or vice versa. Previous studies have shown that both problem gambling and criminal behavior are associated with other psychosocial problems.

Most of the suspected crimes were non-violent property crimes. The criminal incidents were classified in three categories: 1) identity theft, 2) unauthorized access, and 3) violent outburst. Identity thefts typically occurred at home, and the crime type was most often payment frauds. These cases were based on the fraudulent use of a credit card or of a bank ID of a close one to gamble online. Unauthorized access typically referred to a situation where the perpetrator had access to certain resources or gambling products, based on their position as an employee. Such positions were, for example, being a cashier at a store or a coffee house that sells gambling products, and the employee had gambled the products without paying and without being unauthorized. This category also included the use of a company credit card or account to get money for gambling. Violent outbursts were related to negative emotions caused by alleged problem gambling, typically including arguments about spending too much money or time gambling. The persons suffering from an alleged gambling problem could either be victims or perpetrators of violent crime: accusations of the other party being a problem gambler were accompanied or responded with violence.

The crime aftermath consisted of hiding the trails and, eventually, revival through getting caught. Prevention of the financial chaos that gambling can produce seems essential to problem gambling-related crime prevention: a financially-desperate gambler is a motivated offender. Low-threshold problem gambling support groups could therefore reduce problem gambling-related criminality. This study suggests that gamblers need holistic support in addition to financial counselling. To prevent problem gambling-related crime, it is essential to provide an array of support for a wide range of problems other than personal finances.

The preliminary investigation documents also described other problems in life control aside from problem gambling. Such issues included depression, risky substance use, and self-destructive thoughts. The suspects noted in the interrogation documents that they were in a state of complete indifference and were only continuing gambling matters. Hiding the gambling problem and the financial burden caused by it is described as emotionally considerably straining and depressing.

Crossing mutually agreed boundaries and wrecking shared dreams with a spouse had caused a significant amount of shame for the gamblers.

Both the property and violent crimes were most often committed to continue gambling or to hide it. Regarding property crime suspects, most suspected perpetrators reported that all criminally gained funds were spent solely on gambling. Loss chasing was also mentioned by the suspects. Repetitiveness of the incidents was typical, as the majority of cases consisted of several individual events, continuing from a few weeks to over a year.

5.2   Factors related to criminogenic gambling

In Article II, screening data (n=1573) from a Finnish problem gambling self-help program was analyzed to explore factors related to criminogenic problem gambling. The purpose of this sub-study was to examine the background variables that were possibly associated with stealing or cheating money for gambling. Based on previous research, stealing or cheating was assumed to be a last resort for gamblers with a long history of problem gambling. Therefore, this study explored whether the duration of gambling problems or the starting age of gambling predicted stealing or cheating money for gambling.

Logistic regression was applied to study the associations between problem gambling and both reported cheating and stealing. Of the respondents, 37.6% reported that they had cheated or stolen to fund their gambling. As such, these findings are not generalizable to the population level. However, based on previous studies, it can be roughly estimated that as much as one-third of treatment-seeking problem gamblers use illegal measures to gain funds for their gambling. The models indicate that self-reported gambling-related cheating and stealing is related to young age, low education, low income, a high rate of depression, a long history of problem gambling, and negative subjective perception of one's financial situation. However, a solid, unanimous explanation for problem gambling-related crime does not exist. Based on the study, a wide range of tailored services is needed to prevent problem gambling-related crime, and such services should be aimed at at-risk gamblers who are dealing with depression and financial hardship.

Although examining causal relations using this data was not possible, the findings support criminological observations that crime cumulates to young age groups. Various studies also confirm that education has a preventative effect on criminal behavior. These two factors, age and education, were rather strongly associated with criminal behavior in this study. It can be speculated that impulsivity is at its peak in young age groups, and persons with impulsive traits drop out of education earlier. Gambling and gambling problems as well as criminal behavior are also more common among young men. However, gender, the number of permanent members of a household, substance use, or the starting age of gambling were not associated with gambling-related stealing or cheating.

5.3   Probable problem gambling prevalent among prisoners

Article III assesses Finnish prisoners in a pilot study. The survey was conducted in two different types of prisons in Finland: a closed, high-security prison in Turku and an open prison in Vanaja. The prison in Vanaja had different wards for women and men. Questionnaires were distributed to the prisoners by the prison guards. The prisoners then returned the questionnaires in sealed ballot boxes. A total of 96 prisoners completed the questionnaires. The response rate was 30.8%, which is low but typical for such a prison population. Of the respondents, 55 were men and 39 women, and two respondents did not report their gender. To explore potential gambling problems, the questionnaire included a brief biosocial gambling screen (BBGS). The BBGS is a scale with three items that measure 1) if people feel restless, irritable, or anxious when trying to stop or cut down on gambling; 2) if people try to keep their family and friends from knowing how much they gamble; and 3) if people need to get help with living expenses because of their gambling. The respondents were offered two options to choose from: yes (1 point) or no (0 points). Two different versions of the BBGS were used with different timeframes: one enquired about gambling in the last 12 months and the other version enquired about gambling during the 12 months before the respondent entered prison. Alcohol use was assessed using the alcohol use disorders identification test (AUDIT-C), and a simple yes or no question enquired about the respondents' experience smoking in the past year and their use of illicit drugs in their lifetime. The respondents were also enquired about the principle offence (i.e., the most serious crime leading to their sentence) of their current sentence (e.g., robbery, theft or property crime, violent crime, drug

offense, financial crime). Finally, the respondents were asked whether they felt that they needed support for their gambling problem and were offered a list of options on different forms of problem gambling support that they would prefer. The demographic information included gender, age, and marital status.

The results suggest that the prevalence of probable problem gambling is relatively high among prisoners. Past-year pre-conviction problem gambling prevalence was about 16% and past-year prevalence was 15%. Most of the participants with probable problem gambling indicated they had a gambling problem both before and after entering prison. Age, gender, smoking, and alcohol or illicit drug use were not associated with past-year problem gambling or problem gambling before sentencing. Furthermore, the AUDIT-C scores indicated that over half of the participants drank alcohol at a risky level. Over 80% of the respondents had smoked at least once during the last 12 months. Of the respondents, 37% had used illicit drugs.

Nearly 60% of the prisoners who responded to the survey had a previous sentence. Having a previous sentence was more prevalent among men. Almost one-quarter of the respondents with previous sentences had a probable gambling problem. Female respondents with a gambling problem had a previous sentence more often than women respondents without a gambling problem.

Almost half of the respondents reported a violent crime as the main crime of their sentence. Violent crime was the most common crime type for both men and women. Drug-related offences were more common among female respondents: about 25% of women respondents and 7.7% of men reported a drug offense. Robbery, theft, or property crime was reported as the main crime of their sentence by 5% of women and 20% of men. Six participants reported that their main crime was gambling related, of which five scored as potential problem gamblers.

One-third of the respondents who were sentenced for a property crime, financial crime, or robbery were probable problem gamblers. Of all the respondents, 24% showed an interest in receiving support by identifying one or more support preferences. The most preferred type of problem gambling support was group support in all its forms, followed by a personal conversation with a prison staff member. Participants whose main crime was gambling-related preferred to have a personal conversation with a prison staff member, mixed group support, and guided online forum.

Based on the results of the study, correctional institutions are recommended to include systematic screening for potential problem gambling in their procedures and to implement tailored intervention programs for inmates with gambling problems.

5.4 Criminal convictions associated more strongly with social disadvantage than problem gambling severity

In Article IV, population survey data (Finnish Gambling Harms Survey in 2017) was combined with data derived from national registers in Finland to explore whether sociodemographic background factors could explain the link between problem gambling and crime. The respondents were 7,186 adults living in three regions (i.e., Uusimaa, Pirkanmaa, Kymenlaakso) in Finland. Of the respondents, 52.3% were women. People residing in an institution such as prison or a mental health institution were excluded from the survey. The survey included the 14-item problem and pathological gambling measure (PPGM). In addition, the respondents were also asked whether they had ever felt that gambling was a problem for them. The respondents were divided into four categories based on their PPGM scores of no gambling, recreational gambling, at-risk gambling, and problem or pathological gambling. Statistics Finland's register data was combined with the survey data to explore if the participants had ever been convicted of a crime in the past five years (2012–2016) and whether there is an association between gambling severity and having a conviction. The demographic background variables drawn from the registers included respondents' age, gender, and data on respondents' socioeconomic status including education, employment status, income level, and receipt of basic social assistance in 2016.

Of the respondents, 2.1% (123 participants) had been convicted of at least one crime during the past five years and had received a prison sentence, community service, or probation order. Of the main crimes (the most serious crime of the sentences), property or financial crimes (44.4%) were the most common crime type, followed by traffic-related crimes (22.4%). Petty fines, such as minor traffic offenses, were not included.

Men (3.7%) had more convictions compared to women (0.7%). Having been convicted was also more common among respondents with low income, those who

were unemployed, and those who had not taken the matriculation exam. The prevalence of having a conviction was higher among respondents who had received basic social assistance (13.5%) compared to those who had not (1.5%). Moreover, criminal convictions were more common among respondents with problem or pathological gambling (8.8%) compared to at-risk gambling respondents (3.5%), recreational gamblers (2.0%), and non-gamblers (1.2%).

Logistic regression models revealed that factors reflecting social disadvantages were more strongly associated with having a criminal conviction than problem gambling. These variables included receiving basic social assistance, low income, not having taken matriculation examination, and being unemployed. In addition, male gender and a younger age were associated with criminal convictions. When these factors were added into the model, problem gambling was no longer associated with having a criminal conviction. Odds ratios for both past-year gambling problems and perceived life-time gambling problems did not remain statistically significant. The most powerful individual variable contributing to gambling severity becoming non-significant was receiving basic social assistance. Therefore, these findings suggest that receiving basic social assistance is rather strongly associated with both gambling severity and having a conviction. Receiving basic social assistance increases the odds of having convictions as well as gambling problems. Only in a model with age, level of income, employment status, and past-year gambling severity and perceived life-time gambling problems did the gambling variables remain statistically significant. Despite the fact that problem gamblers were overrepresented among the convicted group, the gambling variables did not remain statistically significant in models with gender, receiving basic social assistance, and education. These results are in line with Article III and several international findings (e.g., Banks et al. 2020; Widinghoff et al. 2019; Moore 2018; Riley et al. 2018; May-Chahal et al. 2017; Turner et al. 2017)

6 DISCUSSION

This dissertation is the first attempt to address the associations between problem gambling and criminal behavior in Finland. As such, this study is descriptive and explorative in nature. This study approaches the relationship between problem gambling and crime on several different levels and perspectives by using various operationalizations. The sub-studies explored problem gambling among crime suspects and prisoners as well as criminal behavior among help-seeking gamblers and gamblers in the general population.

Although the gambling environment in Finland is somewhat unique, the results of this study were consistent with existent literature, and they support the generality of the deviance framework (Dennisson et al. 2020) and general problem behavior syndrome (Jessor & Jessor 1977). Several risk-taking and antisocial behaviors seem to co-occur, including harm to oneself and others. This co-morbidity is often explained in psychological terms with risk-taking personality traits, self-control issues, and proneness to novelty seeking.

According to Agnew's general strain theory (1992), crime is a response to stressors, such as financial and social consequences of problem gambling. In the context of problem gambling, nevertheless, this theory is still quite controversial. In Article I, financial strain was often present in the situation preceding the criminal activity, as noted by the suspect or the witnesses. However, in addition to problem gambling and the financial strain caused by it, other life-control issues, such as depression and substance use problems, were present in most cases. This notion supports the generality of the deviance framework. An array of common background variables contribute to both problem gambling and criminal behavior as well as other various problem behaviors (see Perrone et al. 2013; Mishra et al. 2011; Vitaro et al. 2001). The risk factors for criminal behavior recognized in Articles II and IV, such as a high rate of depression and low education, are widely associated with both problem gambling (Welte et al. 2011; Welte et al. 2017; Roberts et al. 2019) and crime (Ozkan et al. 2019; Lochner et al. 2020) as found in previous studies. Similar findings have been made among adolescents (Mestre-Bach 2021). In short, problem gamblers

seem to be more susceptible to crime, whereas offenders appear to have a higher risk to problem gambling compared to the general population.

The four sub-studies of this dissertation suggest that problem gambling contributes to criminal behavior, but the relationship is considerably complex and causality remains unclear. Together with mental health problems, other addictions, and social disadvantage, problem gambling is one of many social and psychological factors that lead to crime. This study finds that problem gambling has primarily motivated reported criminal behavior through financial hardship and the stress it causes. The study suggests that self-reported criminal behavior is common among help-seeking problem gamblers and that young age, low education, low income, a long history of gambling problems, high rates of depression, and financial desperation were associated with such activity. Despite the higher prevalence of gambling and gambling problems among men, gender was not significantly associated with reported stealing and cheating among help-seeking gamblers. This outcome reflects the findings by Binde et al. (2021). By studying Swedish General Court verdicts of cases with criminogenic problem gambling elements, Binde et al. (2021) found that middle-aged women were overrepresented as perpetrators compared to general crime statistics in Sweden. The researchers speculated that this might be due to a rise in online gambling among women in this age group. Most of the women offenders with problem gambling had no previous criminal history.

According to the sub-studies, the prevalence of problem gambling is relatively high among prisoners and among those with criminal convictions. This finding is in line with previous international studies. The sub-studies suggest that problem gambling is not a clear-cut criminogenic factor, but instead, its criminogenic potential is unleashed in synergy with several other confounding factors. The comorbidity between problem gambling, social disadvantage, substance use disorders, and other mental health issues is substantially high. Many of these comorbidities also correlate to criminal behavior (e.g., Gottfredson & Hirschi 1990). However, the causality between these is considerably difficult to define and would require large-scale longitudinal data.

Problem gambling induces a wide range of harms that are experienced differently in different socio-economic groups and in different environments (Raybould et al. 2021). According to various studies (see e.g., Sharman et al. 2019), some groups, such as males or those with co-morbid mental and physical health problems, are

more vulnerable to problem gambling than others. Since different sociodemographic groups play different games, game-specific factors as well as accessibility and availability affect the severity of how gambling harms manifest. Problem gambling-related financial harms seem to hit socially disadvantaged groups the hardest (Resce et al. 2019), and having a lower socioeconomic family background is shown to predict problem gambling-related instrumental crime (Rocheleau et al. 2021).

A recent Finnish study (Latvala et al. 2021) found that problem and at-risk gambling are more prevalent among the unemployed and those who have received social security benefits to cover the essential costs of everyday life. This finding is in line with Article IV, as receiving social security benefits was found to predict criminal convictions more than gambling severity itself. In Article IV, an association was found between receiving such benefits and gambling severity. However, it is unclear whether receiving social security benefits is a consequence of problem gambling. It may be reasonable to think that in a situation where the individual is already in a financially vulnerable situation problem gambling can drastically drain essential resources that can contribute to the need to apply the benefits. Although the link between socioeconomic status and debt problems is not quite straightforward, debt problems are shown to be strongly and dynamically associated with criminal behavior (Van Beek et al. 2021; Aaltonen et al. 2016). Debt problems are also a recognized risk-factor for recidivism (Hoeve et al. 2014).

The findings of this study suggest that the relationship between problem gambling and crime is strongly mediated by socioeconomic disadvantage. Based on the results, the same people who are at risk of problem gambling are also more likely to be disadvantaged in various aspects of life and are more likely to be convicted of a crime. According to previous studies, gambling is often used to escape a chaotic life situation by problem gamblers through the promise of a significant win is to fix everything. Chasing losses (i.e., trying to win back lost money) has been found to be associated with problem gambling-related crime (May-Chahal et al. 2016) and similar patterns of behavior were present in Article I.

A large body of research links impulsivity to problem gambling. A personality trait such as impulsivity may contribute greatly to ones' early life, academic performance, social relations, and choices of interest, and thus, it leads to various issues that lessen the stability in a person's life. In such a chaotic situation, the chosen means of managing the chaos may be ineffective, escapist, and hazardous, which can

lead to further desperation and eventually to criminal activity. Impulsivity can also lead to marginalization, social exclusion, and low attachment to society and norms. Countercultures exist where risk-taking behaviors such as heavy gambling and criminal activity support each other and are normalized and actively neutralized, and this context might explain the high prevalence of problem gambling among prisoners and the high rate of convictions among problem gamblers. However, according to Article I, the majority of the suspected perpetrators depicted their criminal activity as a last resort that they would not have committed without their gambling problem. They tried to escape their desperate situation through gambling to recover from the financial consequences and to hide their problem.

The extensive availability of gambling products in Finnish everyday environments, alongside with noticeable marketing for decades, has normalized gambling for a large part of the population. EGM play, which many studies have connected to high gambling harm and problem gambling risk, is more frequent among socially disadvantaged groups. Intense presence of EGMs in convenience locations such as supermarkets makes these games a visible part of everyday life for such vulnerable groups. Gambling expenditure is highly cumulated, and a large proportion of total gambling consumption comes problem gamblers and at-risk gamblers (Grönroos et al. 2021), and thus, it is considerably likely it comes from socioeconomically disadvantaged groups (Latvala et al. 2021). A recent Finnish study (Raisamo et al. 2019) discovered that EGMs are placed more often in socio-economically deprived areas. Living in a socially disadvantaged neighborhood has been shown to increase the risk of problem gambling in some studies (Slutske et al. 2019), or at least together with low socio-economic status (Barnes et al. 2013), although other studies cannot confirm such a connection (McMillen & Doran 2006).

High gambling frequency and high problem gambling are associated with a higher rate of risk-taking and anti-social behaviors in general as well as with novelty seeking and low impulse control. Not only do gambling problems seem to be more common among people who report having arrests, criminal justice charges, or sentences, but people who gamble more often and more problematically seem to take risks especially in the domains of ethics, health, and safety compared to other, non-antisocial risk-taking. Such findings support the notion that gamblers have the tendency to be involved in such risk-taking when harm to the self or to others is evident (Mishra et al. 2017).

The patterns to problem gambling-related property crime recognized in Article I are strikingly similar to those that Binde (2016a, 2016b) depicts in his study on problem gambling-related embezzlements at the workplace. In Binde's study, problem gambling-related embezzlements at the workplace are committed by persons who are granted access to company resources. Such individuals usually do not have a criminal history, but in Binde's study a small group of perpetrators were also involved in other illegal activity and lived such a lifestyle. For most people, winning back the losses is one of the key motives for the criminal behavior. At the same time, crime itself and hiding the crime cause a massive stress reaction, which such individuals try to manage with gambling and the promise of a large win. To cover their criminal activity they become entangled in a web of lies and use different neutralization techniques (e.g., "I'm only borrowing this money") to explain their behavior to themselves and to others. Binde reports that after the discovery of the crime the perpetrator is typically relieved and willing to seek treatment while their close ones are in shock. Similar aspects are present in Article I regarding property crimes that occurred at home. Considering the crime types, the findings are also similar to the recent study on court verdicts by Binde (2021).

The findings of the Article I are more or less in line with routine activities theory: problem gambling, as part of everyday life and among various other contributing factors, has the potential to create a motivated offender. It can be thought that problem gambling-related crime also emerges from three elements - target, offender and place - all of which have their supervisors. It's safe to argue that among various other instances, the welfare state and gambling providers both share a responsibility in preventing problem gambling-related crime. From the viewpoint of social responsibility, they can be considered to have a supervising role. Furthermore, they share a responsibility to contribute to a healthy society, where ever fewer people feel an urge to resort to gambling or to criminal behavior in order to relieve a sense of loneliness, lack of prospects, alienation and financial or psychosocial pressure. Together, they have a substantial obligation to create a safe environment where options other than gambling or criminal activity are always readily available and actively recommended in a straining life situation. While it's important not to demonize gambling, its potential to cause harm should still be openly discussed and the associated social risk and protective factors studied more in depth.

The findings of Article II can be meaningfully reflected in the study by Roberts et al. (2019) among treatment-seeking problem gamblers. These authors identified

that factors associated with illegal acts and finance problem gambling included low income and low education, which is similar to the findings of this study. Respondents who had resorted to illegal activity also had a more severe gambling problem, anxiety, depression, diagnosed mental health problems, mental health problems in their family, and previous treatment for problem gambling. In the study by Roberts et al. (2019), early onset of problem gambling predicted illegal activity to finance gambling. Offenders also had damaged their relationships more often due to gambling.

Despite the probable high prevalence of problem gambling among the prisoner population suggested by Article III, problem gambling as a phenomenon is still overlooked by the juridical system. In addition to raising awareness of gambling programs, tailored training programs for prison workers are also needed. Of the prison workers surveyed in a study (Castrén et al. 2021) conducted together with Article III, 81% reported that they consider problem gambling to be a serious issue in Finland and a vast majority (94.1%) had encountered a prisoner with a gambling problem during the previous year. However, almost half of the respondents felt that their training or information about problem gambling and issues related to it are inadequate.

Considerably little convergence has been found between gambling studies and criminology, considering the history of gambling as a deviant activity. For a long period of time, criminological studies mainly addressed gambling as a part of criminal subcultures or conducted hot spot analysis on how, for example, a casino-opening affects general patterns of crime in a specific location. Until recent years, problem gambling as a criminogenic factor has been somewhat overlooked in criminology. Problem gambling has been mainly seen as a one possible manifestation of weakened impulse control similar to other addictions. During the past two decades, advances in gambling studies have increased the understanding of problem gambling as a unique phenomenon, its prevalence, and the specific harms related to it, including criminal activity. The progress made in gambling studies will also change criminological perspectives on the subject.

Yokotani et al. (2020) suggest that the pathways model can explain the relationship between problem gambling and different types of criminal activity. Behaviorally conditioned problem gamblers have no previous psychosocial comorbidity, but they are driven into problem gambling and the associated cognitive biases by their environment, subsequent gambling behavior, and financial instability.

Hence, the authors hypothesize that their gambling typically leads to financial crime. In addition to these elements, emotionally vulnerable gamblers have comorbidities such as depressive symptoms, which they try to cope with their gambling as well as with substances such as alcohol. This pattern of behavior can expose them to committing drug and alcohol-related crime. Finally, gamblers in the antisocial-impulsive path experience all the elements from the emotionally vulnerable group but are also highly impulsive and suffer from anti-social tendencies. According to Yokotani et al. (2020), this combination leads to an increased risk of committing violent crime. However, their further empirical analyses only supported the association between problem gambling and income-generating crime.

To a certain degree, the pathways model of problem gambling resonates with classic criminological theories. The behaviorally conditioned pathway resembles behavioral theories and social learning theories of crime, such as the theory of differential association by Sutherland (1939; see also Matsueda & Lanfear 2007). These theories are generally built on the idea that human behavior develops through experience, perception, and cognitions. The emotionally vulnerable pathway has similar components to Agnew's general strain theory, in which crime is a response to various psychosocial stress factors. The antisocial-impulsive pathway shares essential assumptions with the general theory of crime by Gottfredson and Hirschi (1990) in that they both partly explain behavior with deficits in self-control. The results of this study suggest that both the emotionally vulnerable and antisocial impulsivist pathways introduced by the pathways model are present in the relationship between problem gambling and crime. The association between problem gambling and criminal behavior at the population level, as well as the high prevalence of problem gambling among prisoners, might be partly explained by impulsivity in accordance with the pathways model. However, criminogenic gambling seems to also be linked to emotionally vulnerable characteristics, which supports general strain theory.

While the majority of the findings, especially the notions made in Article I, fit the general problem behavior and impulsivity-based narrative of previous studies, some of the results of this study are rather surprising. Several previous studies confirm that gambling, problem gambling, and criminal activity are all significantly more prevalent among men, but among help-seeking problem gamblers studied in Article II, gender does not prove to be a statistically significant predictor of stealing or cheating to finance gambling. Moreover, an early starting age of gambling has been suggested to

predict more severe gambling harm (of which crime is often considered one of the harms emerging last), but in the data of this study, low starting age was not associated with stealing or cheating. Among the surveyed prisoners in Article III, substance use was not associated with problem gambling, contrary to several studies suggesting the comorbidity between these factors. Finally, based on previous literature, it was somewhat unexpected that gambling severity was not independently associated to having criminal convictions in Article IV.

6.1 LIMITATIONS

The sub-studies each have limitations. Regarding article IV, the response rate was relatively low (36%). Nevertheless, the response rate was higher than gambling-related web and postal surveys on average internationally (Williams et al. 2012b). Characteristics of non-respondents in the Finnish Gambling Survey have been mapped. The results show that especially men and younger respondents were more reluctant to participate to the survey. Online survey respondents were more often at-risk and problem gamblers, compared to the postal version respondents (Salonen et al. 2017b; Kontto et al. 2020).

The findings of this study might be partly explained by the small number of respondents with convictions. Given the size of this group, convictions were decided to be coded as a dichotomous variable. This methodological choice also significantly limited the possibilities to explore the quantity and quality of convictions. Regarding problem gambling and at-risk variables, non-significant findings might be explained by the small number of participants in at-risk and problem gambling groups. This might explain the situation where corresponding high odds ratio suggest an association between criminal convictions and problem gambling, but the finding proved to be non-significant.

As found in earlier criminological studies, certain types of offending peak at a young age and are more common among men. Surveys such as the one in Article IV may not reach the vast majority of criminally active people. However, despite these limitations, data on criminal convictions and socioeconomic status were derived directly from the national registers kept by the Statistic Finland. Thus, recall bias or social-desirability bias were not major concerns. As noted in Article I, a considerably

large portion of criminal behavior remains unreported and undetected, and thus, such occurrence is never registered or reported to the police. The sub-studies I, III, and IV focused on reported or convicted offending, whereas sub-study II explored self-reported criminal behavior.

Through the survey data and the retrospective nature of gambling and conviction data, it was not possible to examine the convictions' causal relationship to problem gambling. Although the initial idea of the article was to examine convictions from a longer period or even from a lifetime perspective, Statistic Finland was only able to provide information on convictions from the past five years prior to the survey. Future studies should incorporate larger samples and register data to overcome the issues faced in Sub-study IV. Including prisoners, the clinical population, and the general population in the future surveys is crucial.

6.2 IMPLICATIONS

This study suggests that from the viewpoint of crime prevention, early interventions for the financial chaos produced or worsened by problem gambling are crucial. To minimize the risk of problem gambling-related criminal activity, a comprehensive selection of support for a variety of problems other than personal financial difficulties is needed. Problem gambling support programs should also incorporate a wide range of easy-access psycho-social support and financial counseling into their services. Problem gambling-related criminal behavior seems to be associated with socio-economic disadvantage more generally, as well as with comorbid depressive symptoms, and it seems likely that sustainable, holistic, and efficient social policy will lessen crime related to problem gambling. Since the crime analyzed in Article I mainly involved deceitful and unauthorized use of resources available in the everyday environment of gamblers, opportunities for criminal activity could be to some extent eliminated by increasing awareness. This could be done by providing problem gambling-related training for the workplaces and for their affected others to identify their problems and to help them seek professional support before the problems escalate. Based on the results of this study, more efficient customer identification with gambling operators, instant loan providers, and financial institutions is also recommended. In line with general strain theory, for

persons with problem gambling crime seems to be an act of desperation in a considerably stressful situation.

Article II indicates that many of the crime predictors identified in criminology more generally, such as young age and low education, also apply to problem gambling-related crime. Based on the models introduced in Article II, problem gambling-related crime interventions should focus on problem gamblers in an early phase and should manage serious depression and severe financial hardship.

According to the results of this dissertation, gambling problems are prevalent among prisoners, and support for problem gambling is needed among incarcerated populations. The notion that gambling problems were not associated with substance addictions among the participants might imply that prisoners with problem gambling are a separate group and that they need tailored support, which cannot be integrated with other addiction programs inside the prison. Conducting a problem gambling screening when individuals enter prison would be important from the viewpoint of providing early interventions and avoiding recidivism, especially among prisoners sentenced for a property or financial crime or robbery. Among women, an association was also found between having a previous sentence and problem gambling, which should be considered when planning programs. Diverting suitable offenders from incarceration to rehabilitation already before sentencing would require problem gambling-screening at courts. To guarantee the same rights to health care for prisoners as for the general population, problem gambling interventions should be an integrated part of prisoner health care (Turner et al. 2017). Prison staff should undergo training to understand and to detect problem gambling as a phenomenon and to guide prisoners to proper treatment. The pilot study was considerably well received at the Criminal Sanctions Agency. The next steps in developing problem gambling treatment services in prison environment will be increasing problem gambling awareness among policy makers and performing more quantitative and qualitative studies in prison settings. The results of this study suggest that establishing clear guidelines for assessment, support, and treatment, while evaluating the efficacy of these guidelines, is important. According to Article IV, problem gamblers suffer more often from multiple problems, and thus, social disadvantage should be considered in preventive efforts and interventions focused on possible problem gambling in the criminal justice system setting. Finally, the results of this study imply that social policy, ethically sustainable gambling policy,

and criminal policy should be closely intertwined in the spirt of the welfare state's mission to reduce and prevent social exclusion and disadvantage.

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PUBLICATIONS

PUBLICATION
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From Problem Gambling to Crime? Findings from the Finnish National Police Information System

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From problem gambling to crime? Findings from the Finnish National Police Information System

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Abstract

In previous studies, problem gambling was found to have many adverse consequences, including crime. However, links between crime and problem gambling have been studied relatively little. To fill this gap, we collected problem gambling-related police reports from the Finnish National Police Information System. Fifty-five problem gambling-related crime incidents reported to the police 2011 in Finland were subjected to qualitative analysis. The role of problem gambling, as self-identified by the gamblers themselves, was examined as highlighted in different crime reports: what common features did the gamblers share, and what were the possible causal mechanisms between problem gambling and crime? The data consisted of text documents produced by the police, specifically crime reports and preliminary investigation documents. Collected documents were coded using Weft QDA and SPSS. Grounded theory approach was applied. The majority of the cases were non-violent property crimes, committed at home or at the workplace. We determined that problem gambling, through financial difficulties, does indeed lead to crime.

Résumé

Les recherches montrent que le jeu compulsif entraîne nombre de conséquences néfastes, dont la criminalité. Toutefois, le rapport entre les deux a relativement peu été analysé. Pour combler cette lacune, nous avons examiné des rapports de police répertoriés dans le système d'information de la police nationale de Finlande. Nous avons soumis à une analyse quantitative 55 incidents criminels rapportés à la police finlandaise où le jeu était en cause. Nous avons examiné le rôle du jeu compulsif (dévoilé par les joueurs eux-mêmes) à la lumière des différents rapports : quelles caractéristiques ces joueurs avaient-ils en commun? Quels pourraient être les mécanismes de causalité entre le jeu compulsif et les actes criminels? Les données prenaient la forme de documents textuels rédigés par les policiers, plus précisément des rapports de crime et d'enquête préliminaire. Nous avons codé les documents à l'aide de Weft QDA et de SPSS et appliqué une approche théorique à base empirique. La majorité des incidents se rapportait à des délits contre les biens, non

violents, commis dans des domiciles et des lieux de travail. Nous avons établi que le jeu compulsif, en raison des difficultés financières qu'il cause, conduit effectivement à la criminalité.

Introduction

Crime and gambling can overlap in many different ways. One classification is as follows. Gambling can (1) occur illegally, (2) occur improperly, (3) be penetrated by criminal organizations, and (4) in the case of gambling addiction, can provoke criminal activity (Spapens, Littler, & Fijnaut, 2008). In this study, we explore and delineate (4).

Exploration of the relationship between problem gambling and crime invites specific problems in method. A situation where crimes are committed to fund excessive gambling and to pay gambling debts is often called criminogenic problem gambling (e.g., Smith, Wynne, & Hartnagel, 2003). Recent research suggests a relationship between problem gambling and crime, but it is often difficult to interpret the direction of causality. Certain psychological studies confirm that this antisocial tendency, and the personality traits associated with risk-acceptance, are each related to both problem gambling and offending (Blaszczynski & Steele, 1998; Folino & Abait, 2009; Mishra, Lalumière, Morgan, & Williams, 2011). Substance abusers with antisocial and violent tendencies are three times more likely to be problem gamblers (Cunningham-Williams, Abdallah, Callahan & Cottler, 2007). In neurobiological research, impulsivity has been shown to be connected with problem gambling. In addition, specific features of Attention Deficit Hyperactivity Disorder (ADHD) have been established as predictors in problem gambling in adolescents (Derevensky et al., Pratt, Hardoon, & Gupta, 2007; Vitaro, Arseneault, & Tremblay, 1999). In a study of pathological gamblers, Grall-Bronnec et al. (2011) determined that 26.5% of subjects reported a history of ADHD. However, it remains unclear as to which features and subtypes of attention deficit disorders contribute the most to predicting a gambling problem. Gambling and criminal activities can together be part of a more extreme general risk-taking lifestyle, and thus it is difficult to ascertain causal relationship between the two activities. It is nevertheless possible that impulsivity and attention deficit disorders may both lead to various problems in life, including problem gambling.

Previous studies propose that gambling problems are more prevalent among prison populations relative to the larger population (Abbott, McKenna, & Giles, 2005; Williams, Royston, & Hagen, 2005). Lahn (2005) reported that 34% of the offenders surveyed in Canberra, Australia, suffered from gambling problems whereas, in the general population, the prevalence rate was considerably lower. A Canadian study (Turner, Preston, Saunders, McAvoy, & Jain, 2009) assessed offenders with

a diagnosed (SOGS-R) gambling problem. The researchers found that 65.2% of those offenders with a serious gambling problem reported gambling as a reason for their criminal offending. To be more specific, in these cases the motive for the particular offence was to fund compulsive gambling or to manage gambling debts. Those respondents who enjoyed a less-severe gambling problem more often claimed that gambling was part of a criminal personal means of living. Such a means might bring extra time and money, both of which could then easily be channelled into gambling. Gambling and criminal behaviour may indeed both be part of a risk-taking way of living; it is important, for a full understanding of this behaviour, to know that each activity feeds adrenalin and is therefore attractive to potential participants (Mishra et al., 2011). In a study conducted in a correctional institution in Hamburg, Germany (Zurhold, Verthein, & Kalke, 2013), 7% of the inmates were found to be problem gamblers, a lower proportion than what has been discovered in similar North American and Australian studies. With Zurhold et al.'s study, 46.7% of the offenders with gambling problems had been sentenced for a gambling-related reason. Furthermore, one third of the female offenders assessed in New Zealand were found to be probable problem gamblers (Abbott et al., 2005).

Research on pathological gambling and its prevalence has also taken place using participants of anonymous gambling groups and treatment institutions. Folino & Abait (2009), in an Argentinian study, found that 77% of a sample of 62 gamblers in a support group had committed at least one illegal act because of their gambling. In Quebec, Canada, 68% of the members of a Gamblers Anonymous group reported that they have participated in criminal activity because of gambling, and over one third of them reported that they had stolen money from their employer to gamble (Ladouceur, Boisvert, Pépin, Loranger, & Sylvain, 1994). These findings can be meaningfully compared to the results of the 1990 Maryland Department of Mental Health and Hygiene survey (Lorenz, Politzer, & Yaffee, 1990), in which 62% of the members of the local Gamblers Anonymous group admitted that they had resorted to an illegal act because of their gambling, stealing money being the most common crime.

Lesieur (1984) classified gamblers' perceptions of illegal activities as follows: ideologically justified acts, temporarily justified acts, and completely unjustifiable acts. In his ethnographic study, Lesieur found that one third of his sample of problem gamblers justified their own criminal acts to themselves, either as ideologically justified or as temporally necessary. Based on his sample, it can be inferred that gambling led to crime with up to 90% of his subjects. However, from the viewpoint of classical neutralization theory in criminology (Sykes & Matza, 1957), this result could in fact be interpreted as an attempt to neutralize the committed crime and thus avoid responsibility on the part of the gambler.

The mechanisms of substance abuse and pathological gambling seem to share common features. The patterns of income-generating crimes committed by members of Gamblers Anonymous in the United Kingdom were similar to those committed by narcotic addicts (Brown, 1987). In Brown's study, the most common crime type was property crime without violence. This finding seems to be in line with later studies on

the subject. For example, Meyer and Stadler (1999) determined that the presence of the offences contributed significantly to the differentiation between problem gamblers and non-problem gamblers: typical crimes committed by a problem gambler were fraud, embezzlement, theft from family, and theft non-family members. In his examination of gambling-funding crimes in Australia, Crofts (2003) analyzed 3,000 court files, and determined that problem gamblers more often perpetrated frauds at their workplace.

It is important to keep in mind that problem gambling is not necessarily the only cause of crime. It is instead the case that the elaborate and covert processes that lead to crime may in fact have been learned and practised before the person even started gambling (in such a case, crimes related to gambling are comparable to suicides as they relate to gambling [Blaszczynski and Farrell, 1998]). However, as Blaszczynski and Farrell note, the exact point of a critical breakdown that leads to the suicide is hard to determine. In a study of Gamblers Anonymous in Maryland, 31% of the respondents were identified as dual or cross addicts (Maryland Department of Mental Health and Hygiene Survey). Also, among adolescent gamblers, the practise of gambling has been recognized as one in a series of coexisting problems (Fröberg, 2006; Vitaro, Brendgen, Ladouceur, & Tremblay, 2001). Vitaro et al. (2001) reported strong concurrent links between gambling, substance use, and delinquency among 16- to 17-year-old boys. However, longitudinal links were rather weak, and gambling did not in fact explain the increase in either substance use or delinquency. Griffiths (2009) also found that adolescent gambling and substance abuse are indeed closely linked. Underage participation in commercial gambling is illegal in many cultures, and tends be part of other kinds of illegal activities, such as alcohol and illicit drugs. From this point of view problem gambling can be seen as part of the more general "problem-behaviour syndrome" introduced by R. Jessor and S. L. Jessor (1977). Findings from a sample of adolescents in Hong Kong seem to confirm this perspective (Cheung, 2012). Adolescents who were probable pathological gamblers or who had permissive attitudes towards gambling were not only more likely to be heavy consumers of alcohol and tobacco but were also more likely to be delinquents.

Men seem to be more likely than women to exhibit signs of a gambling problem, and are also more ready to commit crimes when trying to obtain money to gamble. However, among youths studied by Ellenbogen, Derevensky, and Gupta (2007), 62% of the girls classified as at-risk problem gamblers reported that they had stolen money from their parents because of their need to gamble. Stealing money can be considered to be an early warning sign of a gambling problem, they suggest.

In this study we used Finnish archival data to analyze connections between problem gambling and criminal behaviour. The first objective of this study was to assess how problem gambling was presented in crime reports and preliminary investigation documents. Specifically, we asked how the role of alleged problem gambling was highlighted in the behaviours of different crime suspects, and which common features the suspects shared. (As the research determined, and as will be described below, police reports and preliminary investigation documents did in fact give both

detailed views and unique information on the events surrounding specific crimes and on the particular circumstances leading to those offenses.) The second objective of this study was to highlight the possible causal pathways between problem gambling and crime (Figure 1).

Method

Data Collection

As noted above, the data consisted of text documents produced by the police. Those documents were crime reports and police preliminary investigation documents. In Finland, the law obligates the police to register any criminal suspect whenever someone suspects that a crime has been committed (Criminal Investigations Act). The police officer writes an informal description of the case and reports the date, venue and the name of the possible charge or charges. Personal information about the victim, perpetrator, and the other persons involved in the suspected crime are also gathered during interrogations. Preliminary investigation begins if reason exists to believe that a crime has occurred. The central purpose of the investigation is to gather evidence for the possible trial. Through the investigation it is decided whether charges need be considered. As such, a crime report always contains uncertainty: it only *describes* the reported events of a suspected criminal offence. In this first step of the investigation, it is still unclear whether the crime has in fact actually occurred. The preliminary investigation tries to produce clues by determining the course of events, the scene of the crime, the achieved potential benefits of that crime, and the harm caused to each party. In clear and less-serious cases, only a restricted preliminary investigation is conducted. A complete preliminary investigation—one which results in a more extensive prosecution case—includes more-detailed investigation measures, such as transcriptions of witness testimonies and of interrogations of other parties.

To delineate correctly the relationship between problem gambling and crime, this study investigated not only problem gambling-related crime reports but also their progress during the respective preliminary investigation and criminal procedures. The
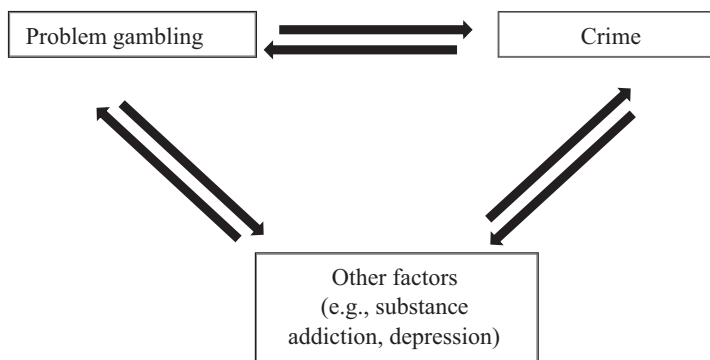

Figure 1. Possible causal mechanisms of problem gambling-related crime

starting point of data collection was the National Police Information System. This police register contained the names of all crime suspects known to the police. It should be noted that only a small part of criminal activity was in fact reported to the police. In our earlier study (Kuoppamäki, Kääriäinen, & Lind, 2014), we developed the method of collecting gambling-related crime data from the Police National Information System. Using specific list of keywords, we found 2,233 gambling-related police reports for the year 2011. A total of 737 crimes were selected from these cases. By using this method as a guideline, and by refining search terms, we attempted to find all crime reports that referred directly to problem gambling or gambling addiction.

Data were gathered by reading the description sections of the crime reports. These data contained the aforementioned information about the suspected offence. All problem gambling-related offences in 2011 were included in the search, and 89 of these contained in the description a direct reference either to problem gambling or to other forms of compulsive gambling. In this present study, we used criminal investigators as informants because the pertinent documents were produced by police officers. The officers created the documents for the purpose of the possible juridical process. As such, the officers aimed for giving the most accurate depiction of the events. The documents therefore contained (1) meaningful interpretations of causal preconditions—specifically, the factors that led to the alleged criminal offenses—(2) pertinent correlations based on those factors, and (3) the order in which the offenses took place. It was these features of our qualitative data that allowed us to distinguish the different causal mechanisms in problem gambling-related crime. However, it was not, in fact, possible to test these mechanisms. It is important to note that the collected data did not necessarily represent directly a gambler's own view of the situation, but rather the police description of the crime, and the interpretation by the police of what the suspect or the witness told about the crime. In each case, one interrogation document summarized the story as told by single person (e.g., a suspect, a witness, a victim). After the interrogation, the person read the document, then signed it. Even so, the quotations presented here are not in fact completely direct transcriptions of what the person actually said. Furthermore, problem gambling, gambling addiction, and pathological gambling may not in fact have been diagnosed with any gambling screen. Rather, they may merely be mentioned in the description of the crime. Police officers were not qualified to make a diagnosis, so a gambling problem was instead self-diagnosed by the suspect or witness or victim.

It is important for the qualitative researcher to be alert to the social construction of the document and to the purpose for it was originally produced. For example, Turk (1966) noted that police officers were always constrained by interpretational issues. In the process of investigation, answers to the questions such as "what really happened?" are actually negotiated by the interactants, including the suspect.

Procedure

Assessing the actual relationship between crimes and gambling can be a challenge. According to Smith et al. (2003), it is in fact almost impossible. One

possible reason for the problem is this: the gambling connection may actually not be reported in the police register. It is also possible that monitoring illegal gambling is not among the first priorities of the local police, or that it actually the security personnel of the gambling venue who handle gambling-related crimes (Smith et al., 2003).

Spapens et al. (2008) described three possible methodological approaches that were used to assess the relationship between problem gambling and crime. Each of these approaches was concerned with the required starting point for data collection. Those start points could be either (1) the general population, (2) problem gamblers, or (3) offenders. In the case of (1), a combination of offending and problem gambling could be studied without taking either one of the two themes as the offset for data collection. For instance, a self-reported problem gambling survey could be complemented with a questionnaire that would measure problem gambling-related offending. With (2), we could collect meaningful data about offending among diagnosed problem gamblers. Data about criminal behaviour could be gathered from people attending a problem-gambling support group: Spapens et al. (2008) stated that studies that use this research setting tend to find a higher prevalence of criminal behaviour among problem gamblers. Concerning (3), the particular point of interest can actually be problem gambling *among* offenders. In practise this method required examination of the prevalence of problem gambling among convicts and offenders. Method (3) was the closest to the method chosen in this study, as the collected documents were essentially about crime suspects who were oriented towards crime in action. Rather than studying criminality among clinically diagnosed problem gamblers, we instead studied, through officially-designated crime suspects, the depictions of self-identified problem gambling. It was believed that these suspects had reported to the police the pertinent information regarding their crimes, and that this information was connected to problem gambling on their part of the suspects.

Different methodological perspectives all enjoy their respective benefits. Assessing hidden criminality would require using material other than that the police database provided. As we focused on those suspects reported to the police, the National Police Information System was an obvious location for data collection—indeed, it was the only one. Through studying such police reports it was possible to delineate one important aspect of problem gambling-related offenses: by definition, the *context* of crime investigation gathered a pertinent variety of voices, voices through which the course of events could then be determined. It was certainly this diversity of different voices that makes this type of archival data interesting and worth using. In this regard, police records provide what is, without doubt, a different yet meaningful perspective on problem gambling-related criminal behaviour— different than what can be grasped through, for example, population scale surveys or interviews with offenders or problem gamblers. The results derived from police record data could then be later compared to those produced through different research designs, and then

complemented by further studies, to yield a more detailed and extensive accurate picture of both problem gambling and crime.

The goals of qualitative research differ from those of quantitative research. A qualitative method does not allow the researcher to explain, find causal determination, predict, or generalize findings. Instead, qualitative research seeks to illuminate and understand its topic (Golafshani, 2003). As Patton (2002) described the matter, in qualitative research "the researcher is the instrument," whereas the credibility of quantitative research is in fact based on instrument construction. Partly because of this situation, the terms *validity* and *reliability* have slightly different meaning for qualitative and quantitative researchers. Even using different *terms* for evaluating qualitative and quantitative research has been proposed. Golafshani (2003) wrote:

> [I]t seems when quantitative researchers speak of research validity and reliability, they are usually referring to a research that is credible while the credibility of a qualitative research depends on the ability and effort of the researcher. Although reliability and validity are treated separately in quantitative studies, these terms are not viewed separately in qualitative research. Instead, terminology that encompasses both, such as credibility, transferability, and trustworthiness is used. (p. 600)

The nature of this study was largely exploratory, given the relative lack of research on this topic in Finland. The objective of our research was to conduct a descriptive analysis of problem gambling-related crimes reported to the police in Finland in 2011. Starting with the gambling-related crimes that took place within this timeframe, we used a string of pertinent keywords to search the National Police Information System. Only those cases with a direct mention in the description part of problem gambling or gambling addiction were selected. This process of exclusion took place to avoid any personal interpretations of the nature of the crime. For example, although gambling debts often do indicate gambling problems, we did not include gambling debt-related cases that did not also contain direct reference to a gambling problem. An asterisk was used as a wildcard. The keyword string in Finnish was:

> ongelmapel* OR *pelaamishäir* OR *pelihait* OR *pelihim* OR *peliong* OR *peliriippuv* OR *pelivaik* OR *peliaddikt*

It is translated as:

> problem gambl* OR gambling disorder* OR gambling harm* OR gambling desire* OR gambling problem* OR gambling dependence* OR gambling trouble* OR gambling addict*

We selected all 89 of those cases in the police investigation reports that mentioned either problem gambling or gambling addiction in the description section.

Preliminary investigation documents were then collected through direct contact with the officer in charge of the investigation. The case materials thus retrieved contained highly confidential evidence, such as interrogation transcriptions, account statements, and personal e-mails written by the suspects. Reading these documents revealed that not all the cases were in fact actually suitable to the research. Certain cases were *not*, despite how they first appeared, in fact linked to problem gambling, but were instead related to, for example, video gaming addiction. Other cases were still under investigation and, as they were therefore incomplete, were therefore judged inappropriate as data for this study. We also did not include suicides related to problem gambling. Upon completion of this stage of the research process we had 55 case documents that were clearly related to our topic. We also determined that, among the documents we now had, interrogation transcriptions were set to be the most fruitful source of information.

The collected documents were coded using Weft QDA and SPSS. We labelled the data, in detail, through the grounded approach. Sensitive to the analytic themes that were now emerging from that data, we then modified these classifications into larger categories. We used the three-phase coding process described by Strauss (1987). These three phrases were open coding, axial coding, and selective coding. With open coding, codes evolve freely from the content of the data. With axial coding, these codes are then linked to wider categories. Finally, with selective coding, these core categories are deepened, guided by the coding paradigm that has arisen from the data.

Differing from the pure grounded approach—of which Miles and Huberman (1994) was an example—we instead produced from the literature a start list of codes. Felson (2006) classified the sequence of a criminal act into three stages: (1) the prelude, (2) the incident, and (3) the aftermath. These three classes comprised the start list. Phrased differently, the three stages may be classified as (1) what led to the committed or alleged act, (2) its nature of that act, and (3) its results. All the narratives studied exhibited a similarly-structured description of the events in general. Using this framework, we described the course of events in different problem gambling-related crimes. Because all cases were located using a problem gambling or gambling addiction-related headword, no separate gambling-related question was needed. The description of the three stages in turn described the relationship between problem gambling and crime. Although the generalizability of our findings may have been limited, they did nonetheless provide a rather detailed picture of the problem gambling-related crimes committed in 2011 in Finland.

It should be noted that one interrogation document could differ from another even for the same case. The information about the relation of problem gambling to the crime could also remain limited. Certain suspects described exactly the games they played, how often they played, and the respective sizes of their bets. In contrast, other suspects referred to their problem gambling only as *somehow* affecting the course of events. All narratives mentioned either a gambling problem or a gambling addiction. By observing these stories, we believe we shed light on how problem gambling and criminal activity interact.

Table 1
Suspects by age (N=57)

Age Range	n	% of Sample
15–24	12	21.1
25–34	20	35.1
35–44	12	21.1
45–54	12	21.1
Over 55	1	1.8

Results

Before the Crime

In our data, a typical suspect of a problem gambling-related crime was a man in his late 20s (Tables 1 and 2). Of the suspects, 35.1% were from 25 to 34 years old. At the time of the crime, the youngest suspect was 17 years old and the oldest 61. Fifty-five crimes of the crimes were reported to the police; between them, these crimes yielded 57 alleged suspects, of whom 82.5% were male. In all but two incidents, the suspected crime was committed alone, and the crime had only one suspect. In 50 of the 55 cases, problem gambling was a component of the suspect's behaviour before the crime itself. Only two suspects had reportedly committed similar problem gambling-related crimes earlier.

During one gambling session, stakes had varied from tens to hundreds of euros. The type of game played was mentioned in 29 cases. Seventeen interviews reported that the suspect gambled mostly online, and that this was causing them financial trouble. In six cases the suspects gambled mainly through slot machines or scratch cards. Four documents referred to poker or sports betting. Two documents reported that the perpetrators gambled in a casino or bingo setting. The games played were provided primarily by Finnish gambling operators, specifically Veikkaus and RAY. In addition to these games, suspects gambled through online games provided by PAF. Our data yielded no direct mention of horse betting, although certain of the suspects' statements about their sports betting may in fact have been references to horse betting.

Three main themes emerged from the descriptions of the events that preceded the crimes (Table 3). In the interrogation documents, the presence of problem gambling

Table 2
Suspects by gender (N = 57)

Age Range	n	% of Sample
Male	47	82.5
Female	10	17.5

Table 3
Events before the crime

Classification	Gambling- related financial trouble	Opportunity to crime	Loss of life-control
Examples	A: *After turning 18, I had taken multiple short-time consumer credits using my own ID. When I couldn't afford paying these credits back, I lost my credit, and I couldn't take out more loans using my own ID. At the time I already had a severe gambling addiction and I spent all the money on gambling.*	B: *I was aware of the Shell Credit Card that was in my fathers' car.* C: *I knew where my employer held the debit card.*	D: *I have had depression for decades. In addition, my memory is bad. At the start of the year, my heart stopped because of a suicide attempt.* E: *Now thinking back, I've suffered from depression since 2007.*

became particularly conspicuous when the suspects and witnesses outlined the suspects' psychological and social histories prior to the crime. In these cases, a gambling problem of considerable duration, coupled with related financial difficulties, acted as a background to the offense.

It was not always clear whether opportunity created the thief or the gambler or both. Often, however, the crime was committed to make continued gambling possible. For gambling to persist, suspects needed to conceal the financial consequences of their doing so. It was at this point that the possibility of committing a crime might first occur to the gambler:

> I have a serious gambling problem and about € 80 000 of debt in foreclosure. In the end of April, I received my bonus holiday pay, but I gambled all the money right away. The money was supposed to be spent on a holiday trip, for which we had been saving together for a year and a half. I did not want to disappoint her (girlfriend), and I felt that I had to get the funds from somewhere. Suspect C50 (Male, 31: Payment Fraud)

Problem gambling easily stretches the family's financial limits. At the same time, problem gamblers are trying to retain their respect as perceived by their relatives and other persons to whom they are close. Therefore, the financial and social consequences of excessive gambling seem to be interwoven. Neglecting the finances of the family can easily lead to shame and guilt. Financial trouble is considered to be the clearest indicator of excessive gambling, and by hiding this trouble, the gambling problem also remains invisible. It is only in the prelude of problem gambling-related property crimes that financial troubles do *not* play a significant role. Also, in the case of problem gambling-related family violence, it is not the time but the money consumed by gambling that causes, prior to the crime, arguments between family members. In 19 cases, problem

gambling and the associated economic troubles had started long before the criminal incident:

> I've been addicted to gambling since 2008. That was the first time I tried PAF's online games. My financial troubles are caused by my gambling. I use most of my salary on online gambling. I've had money problems since 2010. I cannot remember exactly when I lost my credit, but losing my creditworthiness was due to my gambling and due to the bills related to my gambling. Suspect C42 (Male, 27: Aggravated Robbery)

However, it should be noted that problem gambling is not all about losing bets. Problem gamblers may also win significant amounts of money yet still cannot pay their massive gambling debts. The suspects may have told their families about their winnings, but not necessarily about their losses:

> In the summer of 2007 my partner had won € 36 000 from online-gambling and she gave me money for purchasing a new car. At the time her gambling was occasional, or at least she gave such an impression. Victim C6 (Male, 25: Grand Fraud)

The games were designed to make profit to the operator. Despite the occasional winnings, the suspects continued to gamble away their winnings instead of discontinuing gambling and reducing their loans. One need seemed common among the suspects: to spend quickly all the money obtained through gambling. At the same time, gambling was an escapist world, one located far away from everyday life and from the very problems that this escapism caused:

> I did not have a clue how I would live for the next month. I did not think of such things when I was gambling. I knew it was payday, and I gambled the money away. The same night, I noticed that I had gambled my salary and I hadn't paid a single bill. Suspect C42 (Male, 27: Aggravated Robbery)

When life control was lost, gambling offered a perfect distraction from daily troubles while at the same time deepening them. Here, in the oasis of the escapist cocoon, everything was still possible—as long as the gambler obtained more money to gamble. Apparently, after a gambling session, the gambler was then forced to face the consequences of gambling.

Short-term loans were causing huge problems for problem gamblers prior to the crime. Using the Internet or their mobile phones, suspects might take various loans from different lending companies. As a result, in nine cases, the suspect's own credit rating was insufficient for obtaining more money to gamble, let alone to pay living expenses. Losing credit rating also made everyday life highly complicated which obviously only deepened the despair felt by the gambler. Some simple daily purchases were not possible anymore. Taking a loan or renting an apartment became practically impossible. Without money and credit cards, suspects had often resorted

to the help of family. Suspects had tried to cope with the situation before the crime and tried to pay their debts.

However, in most cases, those persons close to the suspect were not aware of the magnitude of the gambling problem or of the gambler's financial difficulties. At the same time, mutual trust with family or work community usually meant shared bank accounts and shared access to personal details for identification. This situation provided opportunities for crime. For the practical organization of shared everyday life, a spouse, and not the gambler, might be in charge of paying the bills. Learning to use electronic bank services might have proved too challenging for that spouse, and the spouse who could handle electronic banking might hold all access. Any situation in which the spouse who managed the finances also had a concealed gambling problem proved risky:

> For several years I took care of the finances for my mother-in-law, for as long as ten years. I had her debit card and the associated user IDs in my use. She gave me full access. Suspect C14 (Female, 61: Grand Embezzlement)

Gambling was not the only problem that was mentioned during the interrogation. The classification "Loss of Life Control" (22 cases) referred to specific psychological and social troubles that were not financial. These problems included depression (9 cases), heavy alcohol use (8 cases), and relationship problems (7 cases). During interrogations each suspect was forced to reflect on pertinent past events and situations, and relate specific events to the criminal incident. Sometimes the suspect did not completely acknowledge depression until caught: Through introspection, one's actions and motives might appear different than they had previously been. It was, of course, possible that this kind of self-diagnosed depression during the interrogation might be used to justify irrational behaviour and to reduce the culpability of the crime, thus making it socially more acceptable. The signs of depression might have been clear all along if depression and health problems had led to, for example, a suicide attempt prior to the crime.

The gambling problem might also be one of many consequences of a risk-taking way of life, one that corresponded to a general problem behaviour syndrome. For example, in this excerpt, careless attitudes to alcohol use, gambling and finances were described. Two generations of a family shared this way of life:

> I remember that, in the summer of 2010, I travelled with my dad. We drank together from dusk till dawn almost the whole summer. At that time, I used my dad's credit card for my own expenses. I had permission of some sort, but somehow I lost control. I have a strong gambling addiction. The summer of 2011 went pretty much the same way; we drank maybe even more than the previous summer. Suspect C24 (Male, 36: Payment Fraud)

Gambling addiction was used here as one explanation for the gambler's loss of control. The circumstances before the criminal incidents took place had usually

been more or less chaotic. The suspects' attempts to regain life control were often characterized by a certain *carpe diem* mentality. Among the suspects it was common to try to win back the lost money in one moment. The cause of the crime was the need to solve the problem permanently. Even though gambling-related financial troubles were referred to as the most important factor leading to the crime, the suspects also discussed the social consequences of gambling more generally.

The Incidents

As earlier research had determined, problem gamblers tended to commit those crimes that were concerned with the generation of income, among them fraud and embezzlement. This situation was the case in the majority of the suspected crimes which were committed in 2011 in Finland and which were reported to the police (Table 4). We divide these crimes into three categories. Here, the typical crimes committed by problem gamblers were (1) property crime committed at home, (2) property crime committed at work, and (3) other crimes. In practise, "other crimes" included assault, tort, and drunk driving.

The perpetrator's own immediate environment provided ample opportunities for property crimes. By "property crime" we refer to embezzlement, fraud, theft, robbery and larceny, each of which aims for financial profit. As already mentioned, in a family and at the workplace, human interactions are built on mutual trust. When this trusted responsibility is disturbed, as is done so by excessive gambling, the problem gambler can then try to obtain greater income, at first by greater frequency of gambling. The gambler then gambles to an even greater extent, using money obtained through illegal or unethical means. Usually, the crime does not require planning, as the easy target and the tools for committing the offence are already present. Indeed, property crime committed at home was the most common types of problem gambling-related crime: the gambler's own household was one of the most readily-available locations for the acquisition of additional gambling money. The classification of "identity theft" (18 cases) refers to a situation in which the perpetrator used the identity and banking details of another person, such as a close family member, to obtain extra gambling money (Table 5). In ten cases the victim was the gambler's partner, in five cases a parent, in two cases a sibling, and in one case a child. This type of property crime was committed using an online banking system, one through which money could easily transferred, and through which

Table 4
Crimes by type (N=57)

	n	*%*
Property crime	45	78.9
Violent crime	9	15.8
Other crimes	3	5.3

Table 5
Incidents by classification

Classification	Identity theft	Unauthorized access	Violent outburst
Example	*I forged the signature of my ex-partner in a written application and I applied the loan, € 4000 as I remember. The loan was then paid into the account of my ex-partner.*	*In the spring, as I was working as cashier at the cafe, I remember filling out a coupon of Keno. I left the value of the coupon unpaid to the cash register.*	*I rip the door off its frame and threw it to the ground.*

fraudulent verification of a user's identity could be done without difficulty. In such cases, the Internet was one of the places where the gambling took place.

Of those crimes alleged to have taken place at the gamblers' homes, the majority (15 cases) included taking short-term payday loans online through the personal details of another family member. This crime concerned what is sometimes called "fast money." With this offense, and in most cases, the perpetrator either (1) opened a new bank account using a stolen identity, or (2) subscribed to a new mobile account:

> I had my partner's mobile subscription in my use. He bought it for my use, since I had no credit and I could not get my own mobile subscription. I used the phone as a modem and I subscribed a data package to it, so I could continue gambling online on PAF. I did not tell my partner anything about this. Suspect C6 (Female, 25: Grand Fraud)

Financial difficulty caused by gambling was another theme, which we found in nine cases. It was connected to property crime, and included, in particular, the loss of credit trustworthiness. The process through which a problem gambler goes into debt and then turns to crime is depicted in Figure 2. Taking out a short-term consumer credit provides quick financial relief for the troubles problem gambling is causing. To
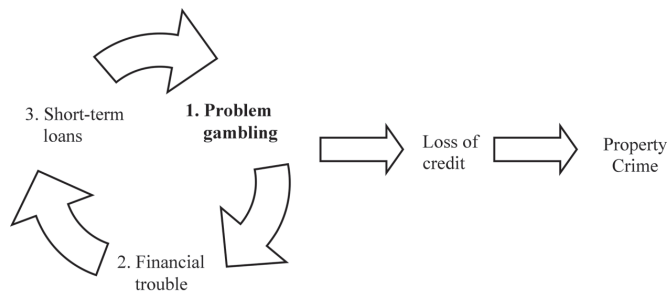

Figure 2. Cycle of problem gambling and its relationship to property crime

manage the previous loans, the suspect usually takes out another loan from another lending company. As the loans cumulate, they lead easily to more severe debt problems and to a payment default entry. The gambling sessions are repeated often, and more loans are then taken out. All this is done to avoid facing the consequences of excessive gambling. In our examination of those identity thefts that took place at home, we noted that the loss of credit seemed to be the breaking point that started the gambler's criminal behaviour. When the debt-ridden gambler was no longer financially suitable for taking out financial loans, property crime was a way to return to the emotional charge of gambling. The criminal incident was a prerequisite for obtaining new loans, because the loans had to be taken out using a new, stolen identity.

This same cyclic pattern can be found in Internet fraud committed by problem gamblers: Internet auctions provide a similar opportunity to use a stolen or fictitious identity. A typical case of Internet fraud as committed by a problem gambler consists of selling items online that the suspect does not actually own. Such items include laptops and mobiles. The perpetrator uses a fake identity, receives the money, but never then sends the sold item to the buyer. The gambler gives false explanations to the buyer, explaining why the sold product is not yet available to be sent. This process of selling imaginary items is then repeated using another identity.

In search of gambling money, suspects also used their access to family members' online bank accounts. The classification of "unauthorized access" (17 cases) referred to cases in which the suspect usually and already had permission for both withdrawals and money transfers between accounts. This permission applied for mutual everyday expenses only, and was not specifically set up for gambling. As the finances were shared, the practical implementation of the crime at first resembled only lending between family members. Eight suspects report that their intention was to pay everything back eventually, and the crime was presented as a temporarily necessary deed, and as a loan.

Typically, one crime consisted of dozens of unauthorized withdrawals or instant loans. Amounts of money in single withdrawals were rather small, and the stolen money was instantly consumed during one gambling session. The duration of this activity varied from a few days to several months. Because of the high frequency of these transactions, the amount of money stolen can eventually expand to hundreds of thousands of euros before the activity is caught.

According to previous studies (Crofts, 2003), one of the most common crimes committed by a problem gambler was stealing from an employer. This description was in line with our own findings: another social environment for stealing extra gambling money was indeed the workplace. These crimes usually followed a pattern similar to the one described in Figure 2, driven, as they were, by the gambling-induced financial trouble. Understanding the difference between personal and corporate money could be difficult for a problem gambler, especially if the gambler enjoyed direct access to company accounts. As with families, workplaces were also

built on mutual trust, trust which was easy to abuse. The employee might, for example, enjoy access to a company debit or credit card for use in business transactions. In five of the seven such cases, where the victim was the suspect's employer, the suspect was already managing both an underlying gambling problem and its related financial troubles. As well, the magnitude of the gambling problem often remained hidden from the colleagues and families. The crime committed was a desperate act, one intended to keep this underlying personal trauma invisible to those persons. For example, a shareholder or CEO could relatively without effort make money transfers from his or her company bank accounts—an appealing option for a troubled problem gambler to obtain extra money. However, problem gambling-related property crimes *committed* at the workplace did not always lead to *gambling* at the workplace. Sometimes, the money was stolen from the workplace, and the gambling happened elsewhere. One suspect told about how easy it was to gamble corporate money in poker and sports betting:

> Accounting firm gets the account statements in real time and members of the board have justified access to this information, but in practice, no one supervised my activities, as far as I know. Suspect C17 (Male, 29: Grand Embezzlement)

Here, the crime aimed to maintain the façade of a prosperous or even luxurious means of living, one of which heavy gambling was essentially the supporter. Expensive restaurants and hotels were also a principal component her life and consequent financial situation, but gambling addiction and the related financial problems were mentioned as the main reason for committing the offence.

It is crucial for the reader to know this finding: problem gambling did not seem to lead directly to the crime. Instead, it was the financial hardship caused by problem gambling that proved the immediate perpetrator (Figure 3). The gambler needed the
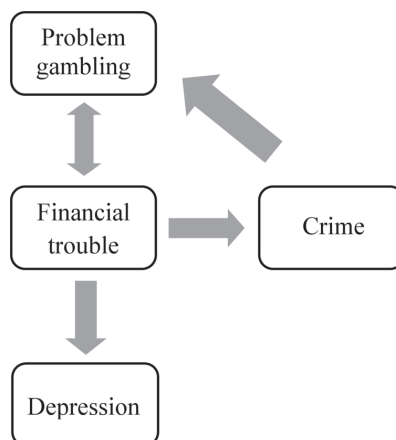

Figure 3. Relationship of problem gambling to crime, depression and financial troubles

money not only for gambling, but also for basic living. However, money gained through criminal activity only accelerated gambling, and the stakes were quickly raised. In most of the property crimes studied here, the majority of the stolen money was swiftly consumed by gambling. The money therefore did not to serve either to solve the financial trouble or to maintain a certain desired means of life. This vicious cycle continued as long as the opportunity for the crime remained, and the perpetrator was not caught:

> Because no one noticed my gambling without paying, I gradually raised the stakes. Suspect C45 (Female, 28: Grand Fraud)

A gambling problem could also result from the criminal incident itself. This interrogation transcript describes the gradual growth of the gambling problem at the workplace and the consequent emergence of criminal behaviour:

> I started to buy the lottery tickets at the gas station. At first, I paid for the lottery tickets, and when I did not have the money to pay for, I thought I would pay for them the next day. I got addicted to the activity, and I had to scratch more and more lottery tickets. Suspect C5 (Male, 28: Grand Embezzlement)

In both these cases, the gambling problem actually started both at the workplace and illegally, specifically through unauthorized use of the gambling products when the suspect enjoyed tempting access to them. (An example of this type of case might include stealing lottery tickets and scratch cards. A suspect could be working as a cashier in a café or a grocery store.) The suspect developed an addiction to gambling illegally without, according to the subject, any previous gambling problems. When stealing from the employer, the suspect often held access not only to gambling products but also to various different temptations. Insufficient supervision made the crime possible, and the suspects of the crimes also reported eating and drinking without paying.

Financial trouble also mediates those occurrences classified as "violent outbursts"—that is, outbursts that are physical or emotional—related to problem gambling. There were seven cases in our research of these occurrences. In one case, time consumed by gambling was not mentioned as the starting point of an abusive interpersonal problem, but rather as what broke the financial limits of the relationship. Human relationships were damaged through the economic hardship caused or deepened by problem gambling. The same mechanism could also lead to victimization of the gambler when, for example, violence accompanied accusations of being a gambling addict. In the case we quote from here, the assaulter had become frustrated with a combination of financial difficulties caused by the alleged gambling problem:

> The argument started when my wife was gambling online. She has a bad habit of doing this when she's intoxicated, and I don't like it at all, as we are financially strained anyway. Suspect C36 (Male, 48: Minor Assault)

The Aftermath

Both problem gambling and the related crimes require concealment. In 12 cases the suspect reported an attempt to hide the criminal incident. Especially with identity thefts, the fear of being caught led to hiding the mail to prevent family members from finding suspicious bills and demand notes (Table 6). Mail could also be redirected to a *general delivery* address. Sometimes, family relations in daily life were so distant that sufficient room existed for hiding the suspicious activities. Shift work could aid in such concealment:

> I concealed the bills sent to our home address by the payday loan companies and collecting agencies from my partner. I succeeded, because my partner left to study every morning. I worked night shifts, and I managed to intercept the bills received in the daily mail. In addition, I took a month off from my work. This also helped to hide the bills from my common-law wife. At the same time, I took care of our children. Suspect C48 (Male, 36: Grand Fraud)

To conceal the crime, the perpetrator could also pretend to be victimized. Ten suspects reported that they had received psychiatric help for their gambling problem after being caught. Sometimes the helpful life change was more dramatic, and included entering military service:

> It is a good time for me to leave for the army. The events came into light in time and the untangling process is on the way. In the army, I also don't have much time or many chances for gambling. My biggest hope right now is to fix the consequences of these miserable events. Suspect C11 (Male, 20: Fraud)

The problem gambler's crime could also produce serious consequences for the victim. After losing money, reputation and creditworthiness, the continuation of a normal life on the part of the victim could be impossible. However, especially in the case of crimes inside the family, the victim could be very understanding and had no other demands but to obtain for the perpetrator treatment for gambling problems. If

Table 6
Aftermath by classification

Classification	Hiding the trails	Revival
Example	*My ex-spouse also hid bills directed at me. During my move I found a large stack of these bills hidden in my apartment.*	*After getting caught I have recognized and confessed my sickly and uncontrolled activity, and sought appropriate treatment.*

the parties came to an agreement, the conciliation solved the case, and no further summary penal order was given.

Discussion

The relationship of problem gambling to crime is a controversial subject. For example, the American Psychiatric Association no longer recognizes as a diagnostic criterion the engagement of criminal activity to finance gambling (APA, 2013). However, criminal activity can still be scored under item 7 on lying (i.e., Lies used to conceal the extent of involvement with gambling). In this study, we analyzed 55 cases of problem gambling-related crime suspects. The data were gathered from crime reports and preliminary investigation documents. Our purpose was to describe how gambling problems were presented in crime reports and preliminary investigation documents. At the same time, we wanted to study causal mechanisms between problem gambling and crime.

The research setting had certain limitations. The documents were produced in a rather personal tone by the officers, and the difference in informative output between different documents was sometimes striking. Most interrogation transcripts did not contain the questions asked by the police officer, but instead only a summary of the answers. It was therefore not possible to observe the interaction between the interrogator and the suspect. Despite these limitations, preliminary investigation documents provided a unique opportunity to study problem gambling-related crime suspects, and we were indeed able to recognize meaningful causal patterns.

The criminal activity associated with problem gambling reflected the characteristics of problem gambling and its negative financial consequences. The staking of money is essential to gambling, and this could be seen in the problem gambling-related crimes, most of them being non-violent property crimes. This finding was consistent with previous studies (Brown, 1987; Crofts, 2003; Meyer & Stadler, 1999).

Cyclic repetition of the gambling sessions could lead to a cyclic nature of the criminal incident. Whether or not it is publicly recognized as "problem gambling," financial problems were considered to be the most important consequence of problem gambling by suspects. Financial difficulties, whether gambling-related or not, were mentioned in 70.5% of the cases. Property crimes committed by problem gamblers seemed to stem from their financial troubles in everyday life. In the majority of cases, problem gambling had started before the criminal incident. In need of gambling money, financial difficulties led especially to property crimes. Previous studies supported this observation (Abbott & Volberg, 1996; Turner et al., 2009), although income-producing crimes have also been shown to be more common than violent crimes for both problem and non-problem gamblers (Turner, Preston, McAvoy, & Gillam, 2013). Commonly, the sole purpose of the crime was to continue gambling, and the stolen money was not actually used to pay financial debts—in 61.5% of the property crimes studied here, gambling directly consumed all the stolen money. In the remaining cases, gambling consumed most or all of the stolen money. It is possible that without the financial problems, the gambling would have continued

without criminal activity. Overall, problem gambling seems to lead through financial trouble to crime, but the crime is committed to continue gambling. In addition, problem gambling-related violent crime appears to result from the social pressure set by the financial trouble. For example, accusations of being a gambling addict could lead to physical violence. Further testing of these causal mechanisms would require larger-scale quantitative studies.

It appears that the perpetrators of gambling-related property crimes often hold a fast-paced and chaotic "gambling attitude" to life in general. Their finances are characterized by certain opportunism and *carpe diem* mentality, supported by a fast-paced online world. Access to fast online money transfers, and especially availability of short-term loans, seems to accelerate the spiral of gambling consumption. In the case of property crimes, usage of online banking services is not only important characteristic of problem gambling, but also a crime itself. E-banking seems to make both excessive gambling and crime easier. Regulation of instant-loan providers is especially needed, considering the negative effect of high-interest instant loans on the financial discomfort of problem gamblers. One step towards this improvement was the interest rate cap of these short-term instant-loans, a cap the Finnish government placed in the summer of 2013.

The current findings also suggest the coexistence of problem gambling with other psychosocial problems. The most common such problem was depression, which was mentioned in nine case documents. On the basis of our data, it was impossible to determine whether it was the gambling or the depression which came first. However, certain of the cases suggested that the financial troubles caused by problem gambling have proved a strong instigator of depression.

The offences did not usually require careful planning or winning the victims' trust. Only in 11 of the studied cases were the suspect and victim not acquainted: problem gambling seemed to lead to misusing already-existing trust. The opportunistic elements of committing the offence were already present. In the current study, problem gamblers did not in fact belong to a shady subculture where high risk-taking behaviours and criminal offenses were the norm.

At worst, the suspect had concealed both the crime and problem gambling for several months. It was clearly emotionally overwhelming to face the consequences of deception. The suspects left the immersion of gambling profoundly unexplained in the interrogation. This lack of explanation might have been because of the roles, procedures and social norms surrounding the interrogation situation. Problem gambling was a socially understandable explanation for criminal behaviour. It also gave justified explanation to the suspects themselves. It linked the criminal incident to a socially maintained discussion of problem gambling. In this political discourse of problem gambling, the act was no longer completely ludicrous and divergent. Instead, it now followed a known pattern of a recognized mental health problem and therefore brought hope: a problem gambler could be healed.

Conclusion

This study has determined the following. Avoidance of problem-gambling related criminal behaviour is dependent on prevention of the financial chaos that gambling can produce. The financially-desperate gambler was a motivated offender. Adequate and easy access to problem gambling support groups could therefore aid the reduction of problem gambling-related criminality. We argue that gamblers need holistic support in addition to financial counseling. The gambler might also require an array of aid for a variety of problems other than personal financial control. Stricter customer identification in online banking services and with instant loan providers could reduce the opportunities for crime. As many victims are close family members, it is important to provide support also for the relatives of the problem gamblers, as well as for their friends. The hazardous behavior patterns of gamblers' needs to be meaningfully recognized. It could occur through providing the tools required. The victimization of the gamblers might therefore be prevented.

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PUBLICATION
II

**Cheating and Stealing to Finance Gambling: Analysis of Screening Data
from a Problem Gambling Self-help Program**

Lind, Kalle & Kääriäinen, Juha

Cheating and stealing to finance gambling: analysis of screening data from a problem gambling self-help program

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Abstract

Previous studies have suggested strongly that early engagement in gambling anticipates severe gambling problems. Problem gambling and gambling addiction are linked to financial difficulties, depression and weakened life control. One social consequence of excessive gambling is property crime. In this study, we analyze screening data ($N = 1573$) from a problem gambling self-help program to locate predictors of such criminal behaviour. We applied logistic regression to determine the relationship between problem gambling and both reported cheating and stealing. Our objective was to create an empirically-based model of the different risk factors related to such criminogenic gambling. Our models suggest that self-reported gambling-related cheating and stealing is related to young age, low education, low income, a high rate of depression, a long history of problem gambling, and negative subjective perception of one's financial situation.

Keywords: problem gambling, crime, logistic regression

Résumé

Des études antérieures ont confirmé qu'une participation précoce à des jeux d'argent prédit de graves problèmes de jeu. Le jeu compulsif et la dépendance au jeu sont liés aux difficultés financières, à la dépression et à un faible contrôle sur la vie. Une conséquence sociale du jeu excessif est la criminalité contre les biens. Dans cette étude, nous analysons les données de dépistage ($N = 1573$) d'un programme d'autoassistance sur le jeu problématique pour trouver des prédicateurs d'un tel comportement criminel. Nous avons appliqué la régression logistique pour déterminer la relation entre le jeu problématique et la tricherie et le vol rapportés. Notre objectif était de créer un modèle empirique des différents facteurs de risque liés à ces jeux criminogènes. Nos modèles suggèrent que la tricherie et le vol autodéclarés attribuables au jeu sont liés au jeune âge, à un faible niveau de scolarité, à un faible revenu, à un taux élevé de dépression,

à une longue histoire de jeu compulsif et à une perception subjective négative de sa situation financière.

Introduction

According to Henry Lesieur's (1977) classic theoretical model of the chase, a gambler enjoys progressively fewer legal options to obtain gambling money as the gambling problem deepens. Five common themes surround the decision to turn to crime: (1) opportunity, (2) external agents of social control, (3) personal beliefs and justifications, (4) progressive depletion of viable available options, and (5) threats. Several empirical studies have indeed demonstrated that problem gambling is a risk factor for criminal offending (e.g., Blaszczynski & McConaghy, 1994; Meyer & Stadler, 1999; Turner, Preston, Saunders, McAvoy, & Jain, 2009). According to a review study by Williams, Royston, and Hagen (2005), various studies indicate gambling problems to be more prevalent among prison populations than among the general population. Research on problem gambling support groups also confirms that a large portion of attendees have committed an illegal act—typically, property crimes—because of their gambling problem.

A high frequency of criminal activity seems to be significantly linked to experiencing more gambling problems (May-Chahal, Humphreys, Clifton, Francis, & Reith, 2016). Problem gambling also increases the likelihood of reoffending on the part of the gambler (Lloyd et al., 2014). A recent study (May-Chahall et al., 2016) on prisoners in England and Scotland found that high-rate offending was connected to loss-chasing behaviour, suggesting in turn that impulse control might function as a moderating factor between problem gambling and crime (see also Blaszczynski & Steel, 1998; Folino & Abait, 2009; Mishra, Lalumière, & Williams, 2016). Chasing behaviour is also one essential component of the integrated model of problem gambling introduced by Blaszczynski & Nower (2002), and of their classification of three problem gambling sub-types: (1) behaviourally conditioned, (2) antisocial, and (3) emotionally vulnerable. Greater impulsiveness is linked to the severity of gambling problems (Alessi & Petry, 2003; Vitaro, Arseneault, & Tremblay, 1999). Problem gamblers with antisocial and impulsive tendencies are also more likely to participate in other problematic behaviours, including crime (Bellringer et al., 2009; Blaszczynski & Steel, 1998; Folino & Abait, 2009; Mishra et al., 2016; Mishra et al., 2011). Similarly, criminology has linked crime to a deficiency of impulse control (e.g., Gottfredson and Hirschi, 1990). At the population level, a survey study conducted in Denmark (Laursen, Plauborg, Ekholm, Larsen, & Juel, 2016) indicated that problem gamblers were more likely to maintain a criminal record, not only for property crimes, but also violence and drug-related offences. Among students, it was more common for problem gamblers to be engaged in various criminal activities, as well as to endure increased substance abuse and mental health issues (Cook et al., 2015;

also Griffiths, Wardle, Orford, Sproston, & Erens, 2009; Gupta & Derevensky, 1998; Hardoon et al., 2004; Hardoon, Gupta, & Derevensky, 2004; Vitaro, Brendgen, Ladouceur, Tremblay, & 2001). A relatively high comorbidity of gambling problems and mental health issues has also been determined in adult populations (Cunningham-Williams, Cottler, Compton, & Spitznagel, 1998; Lorains, Cowlishaw, & Thomas, 2011). Various studies (e. g., Cheung, 2011; Mishra et al., 2016; Potenza et al., 2001) have also discovered that many different forms of antisocial and risk-taking behaviours, including problem gambling, crime and substance use, seem to co-occur. Martin, Macdonald, and Ishiguro (2013) indicated that, among those gamblers in treatment for gambling problems or cocaine addiction, the prevalence of criminal convictions was higher than that among those persons in treatment for tobacco addiction. Social support and full-time employment were found to be crucial protective factors against criminal conviction. Gambling is money-consuming; thus, problem gamblers are more likely to commit those crimes commonly motivated by income generation (Blaszczynski, McConaghy, & Frankova, 1989; Brown, 1987; Laursen et al. 2016; Lesieur, 1977; Turner et al. 2009). Importantly, these crimes are most often committed near the home (McKay & Lesieur, 2005) or at the workplace (Crofts 2003).

From the sociological theories of anomie (Merton, 1938) to criminological strain-theories (Agnew, 1992), poverty and low socio-economic status seem to explain adequately those factors related to offending. Although the relationship between socio-economic factors and crime is not as strong (Agnew et al., 2008) as suggested by leading theoretical approaches, some empirical support for such theories does nevertheless exist. Low socio-economic status consists of various different elements, such as financial position, employment status and educational background, all of which contribute to the risk of delinquency. Examining the association between socio-economic status and different types of crime (violent offences, property offences and driving while intoxicated), Aaltonen, Kivivuori, and Martikainen (2011) found that long-term unemployment and having only a basic education were the strongest predictors of offending. Low socio-economic status correlated with all types of crime, but most notably, socio-economic factors seem to predict property crime. Nordic studies (e.g., Christoffersen, Soothill, & Francis, 2008; Riala et al., 2003) have found low educational performance to predict drunk-driving. Improving educational attainment among the young can lower their risk of marginalization and social exclusion. In fact, education in general seems to be one of the most efficient techniques of crime prevention. (Aaltonen et al., 2011).

Aristotle once stated that [p]overty "is the parent of revolution and crime" (ca. 330 B.C./ 1920, p. 70). However, causal relationships between poverty and crime are still extremely controversial. Criminological strain theories suggest that crime is a reaction to an imbalance between socially-formed goals and unequal opportunities to achieve these: cultural expectations of affluence cannot be met by legal means. This situation is often expressed in financial terms. By analyzing survey data, Salmi and Kivivuori (2005) concluded that financial problems in the family indeed correlated with

delinquency in Finland. According to Agnew et al. (2008), however, only multiple financial problems operating together in fact elevate the risk of offending.

At some level, individual history seems to define the future: according to various criminological studies, criminal careers start at a young age (e.g., Macleod, Grove, & Farrington, 2012; Soothill, Fitzpatrick, & Francis, 2009). Also, early involvement in gambling predicts gambling problems in later life (Hing et al., 2014), and early engagement in criminal activity increases the risk of committing another crime (e.g., Mulder et al., 2011). Regarding the problem of gambling-related crime, gender has shown to be a good predictor of behaviour: males are more likely to commit a problem gambling-related offence (Potenza et al., 2001). In general, men, relative to women, are over-represented in both crime and problem gambling statistics. Men gamble more than women, especially during adolescence (Blinn-Pike, Worthy, & Jonkman, 2010). Several studies have found a high prevalence of problem gambling among youth (e.g., Griffiths et al., 2009; Gupta & Derevensky, 1998). Because of these two factors, the impulsiveness of young men is often used as an explanation for such behaviour. However, according to the age-crime curve (e.g., Loeber & Farrington, 2014), crimes seem to peak in adolescence and early adulthood, independent from other social factors. It must be noted that the significance of age and gender seems to vary according to different types of crime and different forms of gambling.

In line with these findings regarding criminal careers, the earlier gambling begins, the greater the risk of developing a gambling problem would appear (e.g., Hing, Breen, Gordon, & Russell, 2014). The onset of gambling seems to be related to impulsiveness, but only together with low socio-economic status (Auger et al., 2010). Marital status also seems to be linked to both gambling and crime, as single persons are more likely to commit a gambling-related crime (Potenza et al., 2001). In general, strong social bonds through marriage or work seem to buffer the delinquency-related risk factors of childhood (Martin et al., 2013; Sampson & Laub, 1990), for example.

However, not all problem gamblers turn to illegal acts. In this paper, our purpose is to discover the conditions, individual features, and background factors that are connected to self-reported cheating and stealing to finance gambling. These possible underlying factors can be related to gambling behaviour or more generally to social relationships. This research aims to outline the profile and social situation of a criminogenic gambler. The analyses presented here are exploratory only. Our findings can be later compared to the results of other research designs. Recognizing those populations that are at risk can help preventative measures focus more effectively, and support practices can be further developed.

Our main hypotheses arise from the previous research mentioned above. First, we test whether those gamblers who have a longer history of gambling problems are also more likely to report having cheated or stolen. In addition, we assume that starting to gamble at an early age is connected to self-reported cheating and stealing, Thus our two hypotheses may be phrased as: (1) *those gamblers with a longer history*

of problem gambling are more likely to report having cheated or stolen because of problem gambling, and (2) *starting to gamble at an early age is connected to self-reported problem gambling-related cheating or stealing*.

Method

To assess the association between problem gambling and crime, we need to examine several different types of data. This argument can be validated by referring to the crime itself: the majority of all crimes remain unreported to the authorities. By studying official records, we can shed light on only certain aspects of this phenomenon. For example, in Sweden, it is estimated that 10% of problem gamblers attending support groups have embezzled money from their workplace (Binde, 2016a, 2016b). Furthermore, only a small portion of problem gambling-related cases—mostly, fraud and embezzlement—are reported to the police (McKay & Lesieur, 2005; Productivity Commission, 1999). Different methodological approaches are essential to generate more detailed information on problem gambling and crime, means varying from data collection at problem gamblers' treatment programs to examining official court documents. This approach includes both qualitative and quantitative designs. As an example of such multidisciplinary method, criminogenic gambling has been studied using population scale surveys (Dickerson, Baron, Hong, & Cottrell, 1996; Laursen et al. 2016), prison studies (Abbott, McKenna, & Giles, 2000; Abbott, McKenna, & Giles, 2005; McEvoy & Spirgen, 2012; Zurhold, Verthein, & Kalke, 2014), and studies conducted at problem gambling support groups (Blaszczynski et al., 1989; Folino & Abait, 2009; Potenza et al., 2001).

In this study, we utilize screening data from the Finnish "Time to Fold" problem gambling self-help therapy program, which is an Internet- and a telephone-based therapy program directed at problem gamblers. The question of cheating and stealing is included in the screening data of the program, allowing us to estimate the criminogenic factors of gambling in Finland. As a measure, this approach is not crime specific, but cheating and stealing money covers gambling-related property crime in general.

"Time to Fold" is an Internet- and telephone-based therapy program for problem gamblers. Lasting eight weeks, it includes web-based exercises and phone sessions with a therapist, and utilizes a cognitive-behavioural approach. Each client spends five hours in total with the therapist. The program also provides peer support through its online forum. In this study, we examine data from a survey of the applicants conducted during the screening phase, when applying for the program. The program began in 2007, and by the start of 2016, had served almost 1,600 problem gamblers. In our study, we described and elaborated upon the data from this screening phase.

This material permitted us to compare the differences between those gamblers who had reportedly committed a crime (i.e., stealing or cheating) and those gamblers who had not. Our objective was to identify the variables linked to each group, those respondents who answer yes and those respondents who answer no. The variables

were related to gambling behaviour, financial difficulties or experienced social consequences.

The screening and pre-treatment questionnaires covered themes such as the games played, the gambling-related beliefs held and the socio-economic costs of gambling. We utilized screening data collected ($N = 1573$) from the web-based therapy service. The questionnaire contained 91 different topics, including certain topics from the NORC DSM (NODS) screen for problem gambling (17 questions, scale: yes [1], no [0]). Our dependent variable was part of this NODS gambling screening, under the theme of current problems in gambling. The screening included a total of 17 different questions (regarding both the previous 12 months and the previous 2 months) and was originally developed for population surveys. Not all problem gambling screenings take criminal behaviour into account. However, the NODS questions are based on DSM-4-diagnostic criteria, which still include criminal behaviour—unlike the renewed DSM-5 criteria. Thus, the question that formed our dependent variable was: "*During the last year, have you stolen money from or cheated your family members or other persons in order to finance your gambling*?"

In accordance with the DSM-4 criteria, this question was preceded by questions about lying to family members and friends about their gambling and whether or not this had happened more than three times during the last year. The total score of answers varied from 0 to 10 (over 5 points = gambling addiction, 3–4 points = gambling problem, 1–2 = risk gambling). In clinical evaluations, the NODS scale has proven sensitive and reliable (Wickwire et la., 2008; Hodgins, 2004)). As gambling behaviour is not a fixed feature of the individual or a static medical state, the NODS screen surveys gambling behaviour during both the previous year and the previous two months. It should be noted that typically, only 10% of problem gamblers seek help. Research has also indicated that help-seeking starts rather late, after 7–9 years of gambling problems.

We used SPSS to examine our dichotomous dependent variable in relation to other variables. As the dependent variable can only be one of two values, 1 (yes) or 0 (no), logistic regression proved useful. Previous studies have analyzed similar data from problem gambling treatment programs using logistic regression (e.g., Potenza et al., 2001).

A limitation of this current study was our second-hand data. The questionnaire was not actually designed to assess criminality, but was rather a diagnostic tool for practitioners. It should be noted that the questionnaire was not detailed regarding the criminal event or even specify whether the incident was reported as a crime to the police. Neither did it provide any information on the victim. Nevertheless, when reaching the dark figure of crime, the data allowed us to take one important step forward. In addition, our data obviously did not represent the entire problem gambling population, but only a certain subgroup of problem gamblers who applied for this specific treatment program. It is possible, for example, that those gamblers who are not able to search for help in fact form a substantially different

socio-economical group: such a group would not be in the scope of this study. A problem gambler who is acting searching for help may have more resources (social, financial and psychological) for recognizing and admit a gambling problem and for eventually obtaining to treatment. Thus, in light of these limitations, the current study outlined the profile of a criminogenic problem gambler who had applied for treatment.

Results

The descriptive statistics of the data regarding our independent variables is presented in Table 1. Of the respondents who reported their gender, 67.2% identified as male and 32.8% female. On average, the age of the respondents was 34.83 (SD = 11,640). Secondary education (45.9%) was the most common educational background among the respondents. The majority (65.4%) of the respondents were employed, and their typical annual income was 25 000–34 999 Euros per year (25.6%). The applicants had started gambling at a rather young age (M = 23.53 years), and before applying for the program, had suffered from gambling problems for an average of 8.2 years. During the previous year, 37.6% of the respondents had stolen money or cheated to finance their gambling. We will now move on to explore further this group: who those persons are, and how they differ from those respondents who did not report having cheated or stolen. Table 2 presents the results of the logistic regression.

First we applied logistic regression to the background variables (Model 1, Nagelkerke R^2: 0,095) to find the basic variables linked to cheating or stealing. By testing different combinations, we found that younger age, lower income and lower education were linked to reporting gambling-related cheating and stealing. Rather surprisingly, gender or household dwelling unit were not associated with reporting cheating or stealing. Gender is already related to succumbing to gambling in the first place, a fact which could in turn explain the lack of a gender effect here.

The second phase (Model 2, Nagelkerke R^2: 0,120) of our analysis brought into our model the (1) starting age of gambling and the (2) duration of problem gambling. As already stated, according to previous studies, an early starting age predicts gambling problems. But does it also predict problem gambling-related cheating or stealing? Contrary to our hypothesis, the starting age of gambling *is not* a statistically significant predictor of self-reported problem gambling-related cheating or stealing. Instead, the duration of gambling problems was associated with self-reported gambling-related cheating or stealing: the shorter the period the subject suffered from gambling problems, the less likely he or she self-reported cheating or stealing. An interesting finding was that different game types were not significant predictors of reporting problem gambling-related cheating or stealing.

The data presented here do not support a notable relationship between gambling problems, illegal actions and other addictive behaviours. First and foremost, the applicants had *gambling problems*—they did not also report significant problems

Table 1

Descriptive Statistics for Dependent and Independent Variables.

	Self-reported cheating and stealing to finance gambling			
	No	Yes	Total	Missing (*N*)
Age (mean)	36.23 (*SD* 12.227)	32.52 (*SD* 10.198)		18
MADRS score (mean)	18.11 (*SD* 9.021)	22.15 (*SD* 9.391)		52
Gender				20
Male *N* (%)	641 (61.5%)	402 (38.5%)	1043 (67.2%)	
Female *N* (%)	327 (64.1%)	183 (35.9%)	510 (32.8%)	
Education				16
Lower primary education	19 (61.3%)	12 (38.7%)	31 (2%)	
Higher primary education	104 (46.6%)	119 (53.4%)	223 (14.3%)	
Secondary education	443 (62%)	271 (38%)	714 (45.9%)	
Higher education	120 (67%)	59 (33%)	179 (11.5%)	
Bachelor's degree	177 (64.6%)	97 (35.4%)	274 (17.6%)	
Master's degree or higher	104 (76.5%)	32 (23.50%)	136 (8.7%)	
Annual Income				20
Do not want to answer	39 (63.9%)	22 (36.1%)	61 (3.9%)	
Under 6 500 €/year	55 (47.4%)	61 (52.6%)	116 (7.5%)	
6 500–9 999 €/year	44 (44.9%)	54 (55.1%)	98 (6.3%)	
10 000–13 499 €/year	75 (57.7%)	55 (42.3%)	130 (8.4%)	
13 500–16 499 €/year	38 (49.4%)	39 (50.6%)	77 (5%)	
16 500–24 999 €/year	176 (56.2%)	137 (43.8%)	313 (20.2%)	
25 000–34 999 €/year	281 (70.6%)	117 (29.4%)	398 (25.6%)	
35 000–49 999 €/year	172 (71.7%)	68 (28.3%)	240 (15.5%)	
50 000 €/year or more	87 (72.5%)	33 (27.5%)	120 (7.7%)	
Age when began gambling regularly				22
Under 16	236 (53.2%)	208 (46.8%)	444 (28.6%)	
16–20	247 (57.8%)	180 (42.2%)	427 (27.5%)	
21–29	198 (66.7%)	99 (33.3%)	297 (19.1%)	
Over 29	281 (73.4%)	102 (26.6%)	383 (24.7%)	
Years suffered from gambling problems				25
Under three years	223 (69.5%)	98 (30.5%)	321 (20.7%)	
3–5 years	260 (62.1%)	159 (37.9%)	419 (27.1%)	
6–10 years	262 (62.4%)	158 (37.6%)	420 (27.1%)	
Over 10 years	213 (54.9%)	175 (45.1%)	388 (25.1%)	
Perception of financial situation				24
Good	66 (84.6%)	12 (15.4%)	78 (5%)	
Bad, but under control	432 (73.7%)	154 (26.3%)	586 (37.8%)	
Bad, and not under control	463 (52.3%)	422 (47.7%)	885 (57.1%)	

with alcohol or narcotics. Thus, alcohol or drug use was not associated with gambling-related stealing or cheating. This finding could, of course, be because of the selection of applicants for this specific therapy program, e.g., those persons with cross-addictions may seek treatment elsewhere. However, when mental issues are added to the model (Model 3, Nagelkerke R^2: 0,164), we noticed that a higher score on the MADR-S depression screen was indeed associated with self-reported problem gambling-related cheating or stealing. These data verify a statistically

Table 2
Logistic regression results.

	Model 1			Model 2			Model 3			Model 4		
	Sig.	Exp(B)	95% C.I.for EXP(B)	Sig.	Exp(B)	95% C.I.for EXP(B)	Sig.	Exp(B)	95% C.I.for EXP(B)	Sig.	Exp(B)	95% C.I.for EXP(B)
Gender	0,359	1,122	0,877-1,436	0,737	0,955	0,732-1,247	0,72	1,052	0,798-1,386	0,488	1,104	0,834-1,462
Age	0,000	0,978	0,968-0,989	0,017	0,98	0,965-0,996	0,031	0,982	0,965-0,998	0,139	0,987	0,97-1,004
Education (vs. Master's degree or higher)	0,000			0,001			0,008			0,036		
Lower primary education	0,011	3,185	1,301-7,796	0,018	3,009	1,211-7,475	0,032	2,738	1,088-6,889	0,078	2,315	0,911-5,882
Higher primary education	0,000	3,607	2,168-6,002	0,000	3,204	1,912-5,369	0,000	2,688	1,591-4,544	0,001	2,426	1,423-4,136
Secondary education	0,003	1,983	1,258-3,124	0,007	1,888	1,194-2,987	0,014	1,786	1,124-2,837	0,045	1,62	1,012-2,594
Higher education	0,006	2,144	1,249-3,681	0,008	2,092	1,208-3,624	0,022	1,923	1,100-3,360	0,039	1,813	1,029-3,194
Bachelor's degree	0,007	1,97	1,199-3,235	0,019	1,82	1,103-3,005	0,064	1,616	0,972-2,685	0,069	1,615	0,964-2,707
Level of Income (vs. 50 000 €/year or more)	0,000			0,000			0,000			0,000		
Under 6 500 € / year	0,036	1,862	1,042-3,330	0,015	2,086	1,154-3,769	0,026	1,998	1,087-3,672	0,042	1,9	1,023-3,528
6 500–9 999 € / year	0,005	2,376	1,299-4,346	0,003	2,571	1,390-4,755	0,004	2,538	1,350-4,771	0,003	2,664	1,403-5,059
10 000–13 499 € / year	0,16	1,493	0,854-2,609	0,129	1,55	0,881-2,726	0,195	1,466	0,822-2,612	0,27	1,39	0,774-2,496
13 500–16 499 € / year	0,019	2,117	1,134-3,953	0,017	2,16	1,148-4,066	0,023	2,124	1,109-4,066	0,043	1,972	1,02-3,813
16 500–24 999 € / year	0,098	1,509	0,927-2,457	0,07	1,579	0,963-2,587	0,087	1,554	0,938-2,574	0,109	1,521	0,911-2,539
25 000–34 999 € / year	0,497	0,848	0,527-1,365	0,522	0,854	0,528-1,382	0,541	0,858	0,524-1,403	0,42	0,814	0,494-1,342
35 000–49 999 € / year	0,632	0,884	0,533-1,465	0,584	0,867	0,521-1,444	0,663	0,891	0,529-1,500	0,675	0,893	0,526-1,515
Starting age (vs. Over 29)				0,482			0,209			0,17		
Under 16 years				0,167	1,411	0,865-2,300	0,088	1,554	0,936-2,581	0,066	1,622	0,969-2,715
16–20 years				0,422	1,203	0,767-1,886	0,436	1,203	0,755-1,917	0,3	1,283	0,8-2,056
21–29 years				0,658	1,102	0,717-1,692	0,709	1,088	0,698-1,695	0,711	1,088	0,695-1,703
Duration of PG (vs. Over 10 years)				0,007			0,044			0,042		
Under 3 years				0,001	0,499	0,335-0,744	0,007	0,567	0,375-0,859	0,008	0,564	0,369-0,861
3–5 years				0,05	0,709	0,503-1,000	0,308	0,831	0,582-1,186	0,283	0,82	0,571-1,178
6–10 years				0,021	0,688	0,501-0,946	0,093	0,756	0,545-1,048	0,062	0,729	0,523-1,016
MADRS Score							0,000	1,047	1,034-1,061	0,000	1,034	1,02-1,048
Perceived financial situation (vs. Bad and not under control)										0,000		
Good										0,001	0,292	0,138-0,621
Bad, but under control										0,000	0,468	0,361-0,608

significant connection between depression and self-reported problem gambling-related cheating or stealing.

Finally, we added the subjective perception of one's own financial situation to our model (Model 4, Nagelkerke R^2: 0,198). It seemed, we found, that the more negatively the respondent saw his or her situation, the more likely that that respondent was to also report having cheated or stolen because of problem gambling. If the situation was good, or at least under control, it was less likely that the person would report having cheated or stolen because of problem gambling. This finding could be interpreted as supporting Lesieur's idea (1977) of running out of available options. Other financial variables were excluded from the analysis, because of too many missing cases.

Discussion

In 2015, Finland was estimated to have about 124,000 problem gamblers, of which about 49,000 were pathological problem gamblers (Salonen & Raisamo, 2015). Problem gambling itself already increases the risk of participating in illegal activity in general (e.g., Laursen et al., 2016). In our data, 37.6% of the attendees reported having cheated or stolen to fund their gambling. This figure is consistent with previous studies in support groups, with estimates (Dickerson et al., 1996; Folino & Abait, 2009; Meyer & Stadler, 1999; Productivity Commission, 1999) typically ranging from 20–60% of support group attendees having committed a crime to fund their gambling. The findings of our study are not generalizable to the population level, but by relying on previous studies we can roughly estimate that as much as one third of treatment-seeking problem gamblers resort to illegal measures to fund their gambling. On the population level, considering the prevalence of severe gambling addiction, this would suggest that several thousand persons in Finland are at risk of committing a problem gambling-related crime.

Inside the problem gambler population, the factors described in this study further increase this risk. The results of this study suggest that problem gambling-related cheating or stealing is predicted by young age, low education, low income, a high depression score, a long history of problem gambling, and the perception of an uncontrollable financial situation. One of the financial consequences of problem gambling is debt (Nower & Blaszczynski, 2014) and we know that, for example, 45% of problem gamblers treated at Gambling Clinic in Helsinki report having debt problems (Salonen, Castrén, Latvala, Heiskanen, & Alho, 2017b). According to this current study, financial difficulties also seem to contribute to a greater risk of committing a gambling-related crime. As simple as it sounds, the principal component of tackling problem gambling-related crime is the prevention of the escalation of gambling problems. In addition, it is crucial to target support at the risk groups with a higher probability of developing financial problems (e.g., the unemployed and persons with only a basic education): those gamblers who run out of financial options faster are more likely to try to obtain money using illegal means. Controlling problem

gambling-related crime requires solving the problem gamblers' financial crises and supporting their mental health at an early stage.

Correlation does not prove causality. It is important to note, that it remains unclear whether, for example, depression and the perception of an uncontrollable financial situation come before cheating or stealing, or if the pattern is in fact the opposite. However, theoretical models (e.g., Lesieur, 1977) and previous empirical (e.g., Sakurai & Smith, 2003) studies suggest that for problem gamblers, criminal activity is often the last resort. As the vortex of gambling strengthens and the financial situation deteriorates, the gambler has ever fewer available options to obtain more gambling money using legal means. Our data support this idea, as the duration of problem gambling had a weak but significant association with self-reported cheating or stealing. Based on our results, those men and women who are at the beginning of their problem gambling careers might still have legal options to obtain more gambling money or still perceive their financial situation as less serious.

There is a rather well-established relationship between social exclusion and crime. By some definitions, crime actually *is* an essential component of such alienation. According to various criminological studies, (1) unemployment and (2) having withdrawn from school seem to predict criminal behaviour. When qualitatively studying problem gambling-related crime reported to the police in Finland (Lind, Kääriäinen, & Kuoppamäki, 2015), three different elements emerged that preceded the crime: (1) chaotic financial situation, (2) opportunity of crime, and (3) other life-control issues, including depression and heavy use of alcohol. Such notions could be meaningfully reflected in the theory of cumulative disadvantage of Sampson & Laub (1997), and in the problem behaviour syndrome of R. Jessor and S. L. Jessor (1977).

Of the socio-economic background variables in our data, low income and education were statistically significant predictors. A low level of education seemed to increase the risk of self-reported problem gambling-related cheating and stealing. In this sense, it is interesting that employment status was not connected to the probability of reporting problem gambling-related stealing or cheating. Indeed, previous studies in criminology have in fact indicated that a strong association exists between education and criminal activity. Even though the causal mechanism between these two is difficult to ascertain, the crime-reducing effect of education could be related to several things. First, education improves socialization and attachment to society. Second, higher education often leads to higher earnings, which could reduce the need to commit a property crime. Third, education both requires and develops patience, which is seen to reduce criminal activity by developing the ability to plan and execute more sustainable solutions for the future (Lochner, 2011). Considering white-collar crime, education—by providing necessary skills and access to resources through position—may in fact increase opportunities for criminal incidents (Lochner, 2010; Machin, Marie, & Vujić, 2011). On the other hand, in the world of computers and e-banking, fraud and embezzlement do not require sophisticated special skills.

In comparison, many criminological studies show that criminal careers start at a young age, long before employment status and education stabilize. It is understandable that, if one has a relatively long history of problem gambling already at a young age, overcoming financial problems is harder. Maturity may bring more savings, more diverse job opportunities, and more established coping skills, which can all contribute to finding solutions other than crime, even in the most difficult personal situations. Among adolescents, problem gambling increases the risk of participating in various other risk-taking activities.

In general, criminal statistics indicate that the number of frauds reported to the police in Finland has been steadily rising since the early 2000s: for example, in 2016, statistics show an 84.5% increase in reported payment frauds compared to the previous year. In 2016, 1.5 million new payment default entries were reported in Finland. According to the Bank of Finland, (Bank of Finland, 2017), the household indebtedness ratio is steadily rising—in 2020 it is estimated to be 129%. Furthermore, the household income of Finns increasingly consists of different social benefits and pensions. Such developments are extremely worrying, since the prevalence of gambling problems is known to be relatively higher among the lowest income groups. In addition, studies have shown gambling problems to be more common among persons on disability pension and long-term sick leave (Salonen, Latvala, Castrén, Selin, & Hellman, 2017a).

If we consider, for example, gambling-related embezzlement at the workplace, gamblers seem to impulsively exploit flaws in the financial control system. (Binde, 2016a; Binde, 2016b; Kuoppamäki, Kääriäinen, & Lind, 2014; Lind et al., 2015) Crimes committed by problem gamblers are usually because of combinations of a desire to fix the situation, an easy opportunity for crime, shame, and absolute financial desperation caused by gambling. Controlling problem gambling-related crime and controlling problem gambling in general is essentially the same task. Also governments play a substantial role here. The gambling monopoly has a significant financial impact on Finnish society: for years, gambling operators have been a major source of income for the state. For example, in 2014, legal gambling produced 1.2 billion Euros in Finland. What is rather alarming is that only a small portion of gamblers are responsible for as much as half of these profits: the majority of gambling consumption comprises only a notably small population. Gambling revenue is then directed to the prevention and treatment of gambling problems: the very problem caused largely by their legal monopoly. At the same time, many non-governmental social and health organizations in Finland are more or less completely dependent on these gambling profits: a certain amount of the gambling revenue created by the monopoly is shared for the public good, such as science, art, sports, health, youth work, and welfare. Examining gambling provision from the perspective of the public good, Nikkinen and Marrioneau (2014) concluded that an internal ethical conflict in governments' fiscal interest exists towards gambling. It does not seem to be ethically sound for governments to be financially dependent on profits created by an activity that is, to some extent, harmful to public health. Focusing on different damage-reduction programs and at the same time expanding the range of different gambling

products is not ethically sustainable, especially considering that certain forms of gambling-related harm can only be prevented by restricting the supply of gambling products.

Crime prevention is most likely to be more cost-effective than fixing damage caused by crime. The prevention of comorbid problems is obviously a crucial factor in improving psycho-social welfare and mental health, as well as being a significant factor in crime prevention. In addition to implementing such motivation-based crime prevention measures, opportunities for crime need to be reduced. This includes structural protection, i.e., making suitable targets more difficult to reach technically. Security control and surveillance are also needed to increase the risk of the gambler being caught. Finally, in addition to the application of technical solutions, crime-risks ought to be controlled socially by, for example, increasing employer and employee awareness of preventative measures and the different risks concerning embezzlement at the workplace. Detecting a gambling problem at an early phase and identifying the populations at risk are both important in problem gambling-related crime prevention.

Prevention should also focus on reducing opportunities to commit crimes by developing more efficient financial control mechanisms. Since using IDs and bank account details of family members seems to be a remarkably common mode of operation (Lind et al., 2015) for problem gamblers turning to crime, banks, online gambling companies and instant loan providers need to develop technological solutions to prevent identity theft. Reducing the opportunities to commit crimes also means stricter supervision at workplaces and improved customer identification for instant loan providers and gambling companies alike.

Despite the law forbidding gambling using credit in Finland, more than 45% of the gambling support group clients of Gambling Clinic in Helsinki have gambling-related debt. Although it is not technically possible to gamble using credit cards in Finland, it is possible, for example, to withdraw cash from an ATM with a credit card and gamble using this money. Tracking the true origin of gambled money is obviously particularly challenging for companies and officials: it would require co-operation at many different levels and possible restrictions on the freedom of customers.

In addition to reducing opportunities by creating stricter financial control mechanisms, technologies and awareness, the most important way to tackle problem gambling-related crime in Finland is possibly to create a supportive atmosphere for problem gamblers to seek help in time. Problem gamblers take on average eight years to seek help and at this stage, the gambling has already caused multiple serious consequences. Help is usually only sought when the problem gamblers run out of money. Stealing or cheating for money is one of the most serious consequences of problem gambling, and typically occurs after the problem has become profoundly serious and all other options have been used. According to various studies (e.g., Lind et al., 2015; Blaszczynski & McConaghy, 1994; Turner et al. 2007), problem gambling-related crime is often committed to hide the underlying problem and to fix the

resulting negative financial consequences. Previous research suggests that the per-petrators of problem gambling-related crime are generally law-abiding persons with serious financial hardships because of their gambling problem.

In Finland, the law obliges the legal gambling provider to take the social con-sequences of gambling into account above their financial interests. Such gambling problem discourse is often used to legitimate the monopoly (Örnberg & Tammi, 2011). The underlying assumption used to legitimate such regulation is that without limitations, gambling causes social problems, including crime. Nevertheless, it appears that gambling can also cause social problems despite being regulated. Reducing gambling problems also requires gambling companies to take action. As already stated in the Finnish Lotteries Act, persons should not be encouraged to gamble, and to the development of new gambling products should also be regulated to some extent to prevent gambling problems. As electronic gambling machines are one of the most addiction-provoking forms of gambling, it could be useful to restrict the availability of such machines in public places such as grocery stores and kiosks.

It is of course possible that gambling problems and crime have a common back-ground factor. Such a mediating factor could be impulsiveness. Regarding develop-mental phases, the young are considered more impulsive, and in general, younger populations are at a higher risk of committing offences: this seems to apply also to gamblers. As already mentioned, a low level of education may be because of certain impulsiveness, or vice versa, impulsiveness might be the consequence of a low level of education.

Those respondents who report gambling-related cheating or stealing are likely to also have a negative perception of their financial situation. They are also more likely to have a higher depression score. Both depression and financial difficulties were noticed to be essential components of the situation preceding the crime in a previous study (Lind et al., 2015). It could simply be that those subjects who are severely depressed have a more hopeless attitude toward their financial situation. Such a perspective might be because of, for example, psychological features, their social situation or socialization (including education): these gamblers can find no other solutions than cheating or stealing.

Although self-report studies have certain clear limitations, they nevertheless remain a central research technique to assess the dark figure of crime. They have a long tradition in modern criminology, alongside crime victimization surveys. Self-report studies ask participants whether they have committed an act which is (a) illegal or (b) morally indefensible—here, cheating and stealing. The self-report method has proven to be fairly reliable, and has been used to study criminal behaviour among special groups such as drug users (e.g., Cartier, Farabee, & Prendergast, 2006). In Finland, the self-report method has also been utilized to assess the criminal behaviour of youth in the ISRD (International Self-reported Delinquency) research project. (Honkatukia, 1995; Kivivuori, 2005; Salmi, 2008). As regards the validity of the self-report method, individuals usually report truthfully, especially minor offences.

Criticism in turn has addressed over-emphasizing these minor offences, as the self-report study is not sensitive to differences between crime types. Nevertheless, in this study, we were essentially interested in describing the factors surrounding illegal behaviour related to problem gambling—not the details of criminal behaviour as such.

The pathways between one's financial situation and problem gambling-related crime need to be explored in more depth. In addition, even though game type was not a significant predictor of reporting problem gambling-related cheating or stealing overall, the relationship between different types of games and problem gambling-related crime would be an interesting topic for further research, especially the qualitative differences between the kind of crimes problem gamblers commit. Such themes were not within the scope of this study.

All in all, it is likely that the problem-gambler population consists of several sub-groups. Criminogenic problem gambling seems to be a slightly different phenomenon to problem gambling, and judging by our results, the populations are also somewhat different. However, we must remember that gambling itself is actually an umbrella term, and contains various qualitatively-different activities, from slot machines and dice to sports betting and horse racing.

Conclusion

Motives for gambling differ, and there are certainly several different paths that lead to problem gambling. Similarly, no single explanation for problem gambling-related crime exists. Nevertheless, the current study shows that problem gambling-related crime shares predictors of crime in general: crime is more commonly committed by younger populations, and low education significantly predicts crime. For problem gamblers, cheating and stealing seem to be the last resort in a situation that is accompanied by severe depression and the final lack of available financial options. Problem gambling-related crime is no exception to general notions in criminology: education is one of the best measures of crime prevention. Based on this study, we suggest that a wide range of services, especially those gamblers dealing with depression and financial hardship, aimed at the populations at risk, are essential for preventing problem gamblers from turning to desperate acts. Early intervention in gambling problems plays a major role in managing problem gambling-related crime.

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PUBLICATION
III

**Problem Gambling and Support Preferences among Finnish Prisoners: a
Pilot Study in an Adult Correctional Population**

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Problem gambling and support preferences among Finnish prisoners: a pilot study in an adult correctional population

Kalle Lind, Anne H. Salonen, Johanna Järvinen-Tassopoulos, Hannu Alho and Sari Castrén

Abstract

Purpose – The purpose of this paper is to explore the prevalence of potential problem gambling among Finnish prisoners; the associations between problem gambling and demographics, substance use and crime-related factors; and problem gamblers' support preferences.

Design/methodology/approach – Prisoners (n = 96) from two Finnish prisons were recruited between December 2017 and January 2018. The estimated response rate was 31 percent. Gambling problems were measured using the Brief Biosocial Gambling Screen. The participants were asked to report their gambling both for one year prior to their incarceration and for the past year. The independent variables were demographics (age, gender and marital status), substance use (alcohol, smoking and narcotics) and crime-related factors (crime type, prison type and previous sentence). Statistical significance (p) was determined using Fischer's exact test.

Findings – Past-year pre-conviction problem gambling prevalence was 16.3 percent and past-year prevalence 15 percent. Age, gender, smoking, alcohol or illicit drug use were not associated with past-year problem gambling before sentencing. One-third of the prisoners (33.3 percent) who were sentenced for a property crime, financial crime or robbery were problem gamblers. One-quarter (24 percent) of all participants showed an interest in receiving support by identifying one or more support preferences. The most preferred type of support was group support in its all forms.

Research limitations/implications – It is recommended that correctional institutions undertake systematic screening for potential problem gambling, and implement tailored intervention programs for inmates with gambling problems.

Originality/value – This study provides a deeper understanding of problem gambling in prisons. Problem gambling is associated with crime and also seems to be linked with serving a previous sentence. Early detection and tailored interventions for problem gambling may help to reduce reoffending rates.

Keywords Prisoners, Quantitative research, Substance use, Problem gambling, Addiction treatment, Criminal behaviour

Paper type Research paper

Introduction

It is estimated that problem gambling is five to ten times higher in the adult correctional population than in the general population (Turner *et al.*, 2013, 2017; Riley and Oakes, 2015; Williams *et al.*, 2005; May-Chahal *et al.*, 2017). In Finland, population surveys indicate that 3.3 percent (The South Oaks Gambling Screen, SOGS = 3+, Lesieur and Blume, 1987) of people suffer from problem gambling (Salonen and Raisamo, 2015); which falls in the middle of the suggested worldwide problem gambling range of 0.12–5.8 percent (past 12 months) reported by Calado and Griffiths (2016). Problem gambling is an important criminogenic factor, with the majority of identified inmates with problem gambling having committed a problem gambling-related criminal offense (Turner *et al.*, 2009; Brown, 1987; Meyer and Stadler, 1999; Laursen *et al.*, 2016). The types of crime committed by these offenders, such as fraud, forgery, embezzlement, larceny, selling drugs or stolen goods, shoplifting, burglary and petty theft or robbery, are specifically aimed at covering

gambling losses and at making continued gambling possible (Turner *et al.*, 2009; Lind *et al.*, 2015; Kuoppamäki *et al.*, 2014; Abbott and McKenna, 2005; Abbott *et al.*, 2005; Potenza *et al.*, 2000). A higher percentage of problem gamblers than social gamblers commit illegal acts in order to finance their gambling habit or to pay off gambling debts (Reith and The Scottish Centre for Social Research, 2006).

In Finland, there is a scarcity of research concerned with prisoners; no published data is currently available on problem gambling in the prison population. It is almost ten years since the last major prisoner health study, but while this research did address mental health and substance dependence, problem gambling was excluded (Joukamaa *et al.*, 2010). The current study is the first peer-reviewed published report on the prevalence of problem gambling among Finnish prisoners. Gambling and problem gambling among prisoners is an important area of research for various reasons. Among prisoners, undetected and untreated problem gambling is widely viewed as a risk to community re-entry and can lead to re-incarceration. Problem gambling may also have a damaging impact on significant others (Salonen *et al.*, 2016) and victims of gambling-related crimes, which can make re-entry difficult. Problem gambling associated with criminal behavior requires rigorous interventions and clear policies to reduce the incidence or re-occurrence of problematic gambling and to ease the burden on the criminal justice system.

In order to create an effective support mechanism for problem gambling prisoners, it is important to understand the demographics and comorbidities of prison populations. High rates of problem gambling are closely linked with being a young man, minority group status and comorbidities such as substance abuse (Crockford and el-Guebaly, 1998), but problem gambling also occurs among women inmates (Riley *et al.*, 2017; Williams *et al.*, 2005; Abbott and McKenna, 2005).

Problem gambling often remains undetected and undiagnosed, and it is less automatically assessed than substance abuse and mental health problems (Turner *et al.*, 2017; Brooks and Blaszczynski, 2011; Williams *et al.*, 2005). Problem gambling is often seen as a marginal issue that does not warrant the same attention as more visible problems such as substance use, especially when personnel resources are limited. The integration of interventions into broad addiction support programs such as Counselling, Assessment Referral Advice and Throughcare in the UK, a low threshold low/medium intensity, non-clinical drug treatment service for prisoners (Offender Health Research Network, 2010), involves multiple challenges. Shame and the fear of stigma, not wanting to quit gambling and lack of awareness about available support or help are major barriers to seeking help among both the general population and inmates (Suurvali *et al.*, 2008; Turner *et al.*, 2017). On the other hand, it has been reported that inmates with severe gambling problems do tend to seek help (Riley *et al.*, 2017). The first step to making progress is, therefore, to identify the links between problem gambling and other life-control problems and then to integrate problem gambling treatment with prisons' substance abuse treatment (Obstbaum *et al.*, 2016) or broader prison rehabilitation programs. This would guarantee the best possible support services and treatment paths for this particular target population (Turner *et al.*, 2017). Identifying the problem and providing sufficient services are crucial to the goal of preventing crime and reducing reoffending rates (Meyer and Stadler, 1999).

The empirical part of this study is based on a questionnaire among prisoners and probationers, the aim of which was to assess the prevalence of problem gambling, substance use and gambling behavior related to crime, as well as prisoners' and probationers' support preferences with regard to problem gambling. A further purpose is to discuss possible support and treatment options.

Aims

In order to build more effective support systems for prisoners, we need a more in-depth understanding of how substance use and problem gambling are associated and how their concomitant presence can be addressed in correctional institutions. This study set out to explore the prevalence of problem gambling among Finnish prisoners by gender; the association between potential problem gambling, age of gambling and problem gambling onset, and demographics (age, gender and marital status), substance use (alcohol, smoking and narcotics) and crime-related factors (crime type, prison type and previous sentence); and to explore the support preferences of those prisoners willing to seek help for their problem gambling.

Methods

Setting

The Criminal Sanctions Agency in Finland runs 26 prisons, which include both closed and open institutions. The two prisons selected for this survey represent two different types of penitentiaries. Both are located in the criminal sanctions region of Western Finland. Turku prison is a closed high-security prison with a capacity to house 255 inmates. Vanaja prison is an open prison and has two units, one for women and one for men. Open prisons are often the last step of a prison sentence before inmates make the transition back to regular life. Vanaja open prison also has a family ward where inmates can stay with their small children.

The data for this study were collected in these two prisons between December 2017 and January 2018. Before data collection, the researchers met with staff at both prisons, providing information about the purpose of the study and instructions regarding data collection. Staff members distributed the questionnaires to the participants, who also received an information sheet about the study and its purpose. All the data were collected by prison guards as the researchers did not have access to the wards. The researchers visited the prisons personally to promote the study and discuss the preferred and most appropriate method of data collection with the heads of the prisons. Based on these discussions the decision was made to organize data collection via the guards, who were provided with written instructions and who handed out the questionnaires, information sheets and informed consent forms to prisoners. The timing of data collection was based on the prisons' own routines. No prior advertisements or notifications were issued about the study in the prisons. The questionnaires were collected in sealed ballot boxes to ensure confidentiality and to demonstrate that prison staff did not have access to the data.

In addition to prisoners, our survey included persons in supervised probationary freedom. Detainees were excluded as they had not yet been sentenced. The estimated response rate is calculated using statistics provided by the Criminal Sanctions Agency: the number of prisoners changes daily, which means it is difficult to give the precise number of prisoners reached in our study. On January 1, 2018 Turku had 194 prisoners belonging to our target group and Vanaja 59 prisoners. In all we received 96 responses from 312 prisoners (based on January 1 statistics), giving a response rate of 30.8 percent. The response rate was higher in Vanaja (66.1 percent) than in Turku (29.4 percent).

Measures

Problem gambling: the questionnaire instructions defined gambling as "games that are played for money." Gambling problems were measured using the Brief Biosocial Gambling Screen (BBGS, Gebauer *et al.*, 2010), a three-item scale measuring neuro-adaptation, psychosocial characteristics and adverse social consequences of gambling (Table I). Based on their "yes" or "no"

Table I	Criteria of problem gambling as endorsed by prisoners ($n = 96$) by gender			
Criteria	*Question*	*All n (%)*	*Men n (%)*	*Women n (%)*
1. Neuro-adaptation	"During the 12 months before being convicted, did you become restless, irritable or anxious when trying to stop/cut down on gambling?"	11 (12.0)	6 (11.1)	5 (13.2)
2. Psychosocial characteristics	"During the 12 months before being convicted, did have you try to keep your family or friends from knowing how much you gambled?"	12 (12.9)	5 (9.1)	7 (18.4)
3. Adverse social consequences of gambling	"During the 12 months before being convicted, did you have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends or welfare?"	10 (10.6)	4 (7.3)	6 (15.4)
Problem gambling[a] 12 months before conviction		15 (16.3)	8 (14.8)	7 (18.4)

Notes: BBGS, Brief Biosocial Gambling Screen, with yes and no response options. [a]One or more positive responses (yes) to questions 1–3 indicated potential problem gambling during the 12 months before conviction

responses (with total scores ranging from 0 to 3), the participants were defined as potential problem gamblers if they scored one or more. In addition, participants who had answered "yes" to any of the BBGS items were instructed to answer two further questions concerning age of gambling onset and age of problem gambling onset. BBGS was originally developed to measure gambling problems in the past 12 months. Since gambling opportunities are scarce in prison settings, we asked the participants to fill out two different versions of BBGS: the first one inquired about gambling during the past 12 months before the moment of completing the questionnaire, and the second one concerning the 12 months before the start of their prison sentence (on the street).

Substance use: alcohol consumption was measured by using a modified version of the Alcohol Use Disorders Identification Test (AUDIT-C) (Bush *et al.*, 1998). AUDIT-C is a three-item screen used to identify persons who are hazardous drinkers or who have active alcohol use disorders (including alcohol abuse or dependence). It is based on a five-point Likert scale as follows: $a = 0$ point, $b = 1$ point, $c = 2$ points, $d = 3$ points $e = 4$ points. In this study, total scores were counted by summing up the points for each item, and cut-off points recommended by Seppä (2010) were used to identify risky drinking among men (score $\geqslant$6) and women (score $\geqslant$5). Smoking was ascertained with the following yes/no question: "Have you smoked any of the following products: cigarettes, pipe, cigar or electronic cigarettes during the past year?" Lifetime illicit drug use was ascertained with the question: "Have you used narcotic substances?," with a yes/no response option.

Crime-related variables: respondents were also asked to identify the primary crime for which they were currently sentenced. The specified crime types were: robbery; theft or property crime; murder, manslaughter or attempted murder; other violent crime; tax offense, false accounting or other financial crime; drug offense; driving under the influence; and other crime. In addition, the respondents were asked (yes/no) whether they had any previous sentences (Do you have previous sentences?). Finally, the participants were asked to say whether or not their current sentence was gambling related (Is your current sentence related to gambling?). Prison type was also included in the analysis.

Support preferences: the participants' support preferences were assessed by listing different types of support options (see Table IV). Respondents were allowed to choose as many options as they wanted.

Demographics: background variables included gender (man/woman/other/do not want to disclose), age and current marital status (married or in a registered relationship/cohabiting/single/divorced/widowed).

Ethics: the study was conducted in accordance with the ethical standards of the Declaration of Helsinki. The Ethics Committee of the National Institute for Health and Welfare, Finland, approved the research protocol (THL/1701/6.02.01/2017). Additional approval was obtained from the Criminal Sanctions Agency. Potential participants received written and verbal information about the study and the principles of voluntary participation.

Data analysis: the data were analyzed using SPSS 23 software (SPSS, Inc., Chicago, IL, USA). Statistical significance (p) was determined using χ^2 test (> 2 groups) or Fisher's exact test (2 groups): χ^2 test was used for categorical variables when the test assumptions were valid and Fisher's exact test was used when any expected cell count was less than five for a 2×2 table.

Results

Description of the participants

We had 96 prisoner participants, of whom 57.3 percent were men and 40.6 percent women (Table II). Just under one-third were aged 25–34 years, slightly over one-quarter were 35–44 years and one-quarter were 45–54 years. Among women the largest age group (41.0 percent) was 45–54 years, among men the largest age group (33.3 percent) was 25–34 years. Women were most often married or in a registered relationship (36.8 percent), among men the most common marital status was single (38.2 percent).

	All n=96		Men n=55		Women n=39	
Table II Participants' demographics, substance use and crime-related factors						
	n	%	n	%	n	%
Gender						
Men	55	57.3	–	–	–	–
Women	39	40.6	–	–	–	–
Other/missing	2	2.1	–	–	–	–
Age group						
18–24 years	7	7.5	6	11.1	1	2.6
25–34 years	28	30.1	18	33.3	10	25.6
35–44 years	25	26.9	16	29.6	9	23.1
45–54 years	23	24.7	7	13.0	16	41.0
55 years or more	10	10.8	7	13.0	3	7.7
Marital status						
Married or in a registered relationship	23	24.7	9	16.4	14	36.8
Cohabitation	22	23.7	13	23.6	9	23.7
Single	30	32.3	21	38.2	9	23.7
Divorced	16	17.2	10	18.2	6	15.8
Widowed	2	2.2	2	3.6	0	0.0
Alcohol risk consumption, yes	42	53.8	29	69.0	13	31.0
Tobacco smoking, yes	79	84.0	50	90.9	29	74.4
Use of narcotics, yes	34	37.0	25	47.2	9	23.1
Crime type						
Robbery	5	5.5	4	7.7	1	2.6
Theft or property crime	8	8.8	7	13.5	1	2.6
Murder, manslaughter or attempted murder	29	31.9	15	28.8	14	35.9
Other violent crime	15	16.5	9	17.3	6	15.4
Tax offense, false accounting, other financial crime	8	8.8	4	7.7	4	10.3
Drug offense	14	15.4	4	7.7	10	25.6
Drunken driving	6	6.6	5	9.6	1	2.6
Other crime	6	6.6	4	7.7	2	5.1
Previous sentence, yes	54	59.3	39	73.6	15	39.5
Prison type						
Closed high-security prison	56	59.6	49	89.1	7	17.9
Open prison	38	40.4	6	10.9	32	82.1

More than half (53.8 percent) of the participants used alcohol at a risky level (men 69.0 percent; women 31.0 percent). The Cronbach's α for AUDIT-C was 0.747 (Table II). In the closed prison, 59.6 percent of the participants used alcohol at a risky level, compared to 39.3 percent in the open prison. Over 80 percent of the participants had smoked (men 90.9 percent; women 74.4 percent) at least once during the past 12 months. Overall, 37.0 percent of the participants (47.4 percent of men and 23.1 percent of women) had used narcotic substances in their lifetime.

Almost half of the participants reported that their principal offense was a violent crime (Table II). Almost one-third (31.9 percent) had been sentenced for murder, manslaughter or attempted murder. Violent crime was the most frequent category of crime among both men and women: 35.9 percent of women and 28.8 percent of men had been sentenced for murder, manslaughter or attempted murder. One-quarter of women and less than one-tenth of men had been sentenced for a drug offense; 5.2 percent of women and 21.2 percent of men for robbery, theft or property crime; and 10.3 percent of women and 7.7 percent of men for a tax offense, false accounting or other financial crime. Driving under the influence was the principal crime for 9.2 percent of men and 1.6 percent of women. Nearly 60 percent of the participants reported that they had been sentenced previously (39.5 percent of women and 73.6 percent of men). More than half (59.6 percent) of the respondents were in a closed high-security prison. These participants were predominantly men (89.1 percent), whereas women accounted for the bulk of the open prison inmates (82.1 percent).

Problem gambling

In total, 16.3 percent of the participants (18.4 percent of men and 14.8 percent of women) indicated having a gambling problem during the 12 months prior to their incarceration (BBGS = 1+) (Table I). The Cronbach's α value for BBGS was 0.747. Psychosocial characteristics (12.9 percent) were the most commonly recognized criterion of problem gambling, followed by neuro-adaptation (12.0 percent) and adverse social consequences criteria (10.6 percent). Among men, the most often endorsed criterion was neuro-adaptation (11.1 percent), which refers to becoming irritable or anxious when trying to stop gambling. Among women, the most common criterion was psychosocial, referring to problems in trying to keep family or friends from knowing about their gambling (18.4 percent). Overall, women gave more positive (yes) responses to all three items of the BBGS questionnaire (10.5 percent) than men (5.6 percent) when evaluating past-year gambling, but due to the low count data, no formal statistical test was performed on group differences.

In addition, 15 percent of the participants were identified as potential problem gamblers (BBGS = 1+) during the past year. 92.9 percent of them also scored at least one point for the 12 months before incarceration. Similarly, 86.7 percent of those who were identified as potential problem gamblers pre-incarceration also scored at least one point for past-year BBGS. Mean age of gambling onset was 14.73 (SD = 5.78), which corresponded with the relatively early age of problem gambling onset (mean = 22.45, SD = 8.73).

Problem gambling and correlates

The proportion of problem gamblers was highest in the age group 35–44 years, regardless of gender. The most common marital status for problem gamblers was single (47 percent). Among those with risky alcohol consumption, 14.3 percent also had a gambling problem. In addition, 20 percent of the participants with a history of drug use and 17.5 percent of those who smoked presented with gambling problems. Prison type (closed/open) was not associated with problem gambling prevalence (Table III).

One-third of those who had been sentenced for an income-generating crime had a gambling problem. Tax offenses, false accounting and other financial crimes were the most common reasons for being sentenced among problem gamblers, followed by drug offenses and property crimes. There was a statistically significant association ($p = 0.012$) between crime type and problem gambling: problem gambling was more common among those who were sentenced for property crime, financial crime or theft. Among those who had a previous sentence, 24.1 percent (18 percent of men and 40 percent of women) can furthermore be defined as problem gamblers. Among women, having a previous sentence had a statistically significant ($p = 0.011$) association with gambling problems.

Among the six participants whose principal offense was gambling related, five were potential problem gamblers. There was an association ($p < 0.000$) between problem gambling and gambling-related crime. Of those six inmates whose principal offense was gambling related, four had been sentenced for a property offense, financial crime or robbery.

Support preferences

One-quarter (24 percent, $n = 23$) of the participants showed an interest in receiving support by identifying one or more support preferences (Table IV). There were more participants who wanted support than those who were identified as potential problem gamblers in either BBGS (16.7 percent, $n = 16$). The most preferred type of support was group support in all its forms, followed by personal discussion with a prison employee. Men in particular seemed to prefer group-based support and face-to-face discussions over other support types. Virtual support was more popular among women and, overall, women seemed to be more open to different types of support. Those whose principal offense was gambling related preferred personal conversations with a prison employee, mixed group support and a guided online forum.

Table III	Association between the demographic factors and pre-conviction gambling problems	
	Gambling problem[a] n (%)	Significance
Gender		0.776
Men	8 (14.8)	
Women	7 (18.4)	
Age		0.527
18–34 years	6 (17.1)	–
35 years or more	9 (15.5)	
Marital status		0.463
Married, registered relationship or cohabitation	8 (17.8)	
Single, divorced or widowed	7 (14.9)	
Alcohol risk consumption[a]		0.388[c]
Yes	6 (14.3)	
No	3 (8.1)	
Smoking		0.456[c]
Yes	14 (17.5)	
No	1 (7.1)	
Use of narcotics		0.563
Yes	7 (20.0)	
No	8 (14.0)	
Crime type		0.012*
Property crime, financial crime, robbery	7 (33.3)	
Violent crime, drug offense or other crime	7 (10.0)	
Previous sentence		0.022*[c]
Yes	13 (24.1)	
No	2 (5.4)	
Sentence related to gambling		0.000**[c]
Yes	5 (83.3)	
No	10 (11.4)	
Prison type		0.971
Open prison	6 (15.8)	
Closed high-security prison	9 (16.1)	

Notes: $n = 96$, [a]BBGS $= 1+$, Brief Biosocial Gambling Screen: one or more positive responses (yes) indicated potential past-year gambling problems; [b]AUDIT-C risky drinking defined among men score $\geqslant 6$ points and women score $\geqslant 5$ points; significance is determined by Fischer's exact test (two groups); [c]expected cell count 5 or less. *$p \geqslant 0.05$; **$p \geqslant 0.001$

Table IV	Support preferences of problem gambling prisoners wanting help by gender					
	All n = 22		Men n = 15		Women n = 7	
	n	%	n	%	n	%
Personal discussion with prison employee	10	45,5	6	60.0	4	40.0
Group support	17	77,3	12	75.0	4	25.0
Male or female group	11	50,0	7	63.6	4	36.3
Mixed group	7	31,8	4	57.1	3	42.9
Not specified	2	9,1	2	100.0	0	0.0
Telephone supported virtual treatment program	4	18,2	0	0.0	4	100.0
Supportive telephone discussions with a professional	5	22,7	1	20.0	4	80.0
Supportive telephone discussions with a peer	6	27,3	2	33.3	4	66.7
Guided discussion forum or other virtual help from outside the prison	7	31,8	3	42.9	4	57.1

Discussion

Prevalence

Prior to incarceration, past-year prevalence of potential problem gambling among the inmates of the two Finnish prisons surveyed was 16.3 percent. Our results therefore support previous studies indicating that the prevalence of problem gambling is higher in the criminal justice population than the general population (Turner *et al.*, 2013, 2017; Riley and Oakes, 2015; Williams *et al.*, 2005; May-Chahal *et al.*, 2017). In Germany, 7.5 percent of male and 3.6 percent of female prisoners were diagnosed as problem gamblers (Zurhold *et al.*, 2014).

Our sample can be compared against the general prison population in Finland based on statistics from the Criminal Sanctions Agency. The mean age of all prisoners in the country in 2017 was 37.3 years. Most of them were sentenced for a violent crime (40 percent) and one quarter for a property crime. Eight percent of prisoners in Finland were women (Criminal Sanctions Agency, 2017). Our results showed no statistically significant gender differences in problem gambling prevalence. Castrén *et al.* (2015) have earlier reported the same result for patients receiving opioid substitution treatment. Some studies indicate that men gamble more often and suffer from more severe problem gambling than women in the criminal justice population (Wallisch and Kerber, 2001; Kerber *et al.*, 2001), but others have found a higher gambling prevalence rate for female prisoners (Abbott and McKenna, 2005; Abbott *et al.*, 2005).

This finding of no gender differences may indicate a growing trend for women's problem gambling (Salonen *et al.*, 2017; Romild *et al.*, 2016) or other confounding factors. If the problem gambling rate among women is nearing the same level as among men in general, gender-specific approaches will be required for prevention and treatment at the population level as well as among prisoners, where the aim is to reduce levels of recidivism (Riley *et al.*, 2017).

In this study, the most endorsed BBGS item was the psychosocial criterion, which refers to the consequences of problem gambling for social relationships. Problem gambling impacts significant others as well (Salonen *et al.*, 2016), and in some cases can even lead to intimate partner violence (Roberts *et al.*, 2016; Afifi *et al.*, 2010; Liao, 2008). The second most endorsed criterion of neuro-adaptation refers to the behavioral manifestations of withdrawal, and was reported more often by men than women. On the other hand, women reported psychosocial characteristics more often than men. This finding must be interpreted with caution because of our small sample size, but it certainly warrants further investigation of the different gender trajectories. Previous studies have shown that the onset of problem gambling among women is usually associated with stressful life situations and coping difficulties, traumatic experiences in childhood or later life and financial difficulties (Järvinen-Tassopoulos, 2016).

Problem gambling prevalence rates were quite similar for both timeframes, i.e. 12 months before incarceration and the previous 12 months. This might indicate that gambling problems are persistent and long lasting among prisoners. Measurement of the prevalence of problem gambling among prisoners involves several challenges. Future studies should collect data from incoming prisoners in order to avoid problems stemming from recall bias, which may be compounded by the prison setting and the different lengths of sentences. In the current study our focus was to assess the situation of those who were currently in prison, their preferences for support and to help develop practices of support in prisons, regardless of the length of sentence. Among our prisoners, age at problem gambling onset was lower than reported in previous prison studies (Turner *et al.*, 2009) and among help-seeking gamblers (e.g. Teo *et al.*, 2007). Age at gambling onset was also lower than in the general population (Salonen and Raisamo, 2015). Previous studies confirm that early gambling onset not only predicts the development of later gambling problems, but also mental health problems and substance abuse (Burge *et al.*, 2006). In adolescents, particularly males, problem gambling seems to be associated with various problem behaviors, such as substance use, violence and delinquency (Vitaro *et al.*, 2004; Winters *et al.*, 2002): individuals who are prone to one problem behavior are also more vulnerable to others. Similarly, antisocial and risk-taking behavior is a risk factor for problem gambling among adolescents (Dowling *et al.*, 2017; Stinchfield, 2000; Gupta *et al.*, 2006).

Comorbidities

Alcohol risk consumption, smoking and narcotics use was very common in this prison population. Due to several limitations with regard to the measures used and their timeframes, however, these results must be considered tentative, even though they are closely in line with earlier findings (Fazel *et al.*, 2017). Although we found no significant association between problem gambling and other substance use, it is obvious that these problems do tend to accumulate among prisoners. It is well-established that substance abusers are overrepresented in prison populations (Fazel *et al.*, 2006; Lintonen *et al.*, 2011). Even though it is estimated that substance abuse is ten times more prevalent than in the general population (Joukamaa *et al.*, 2010), substance problems are not always detected in Finnish prison settings. In this sample, prisoners in a closed prison setting reported using alcohol at a risky level more often than those in an open prison setting. Future studies into problem gambling and the use of any substances among prisoners should use interviews alongside self-report questionnaires in order to ensure the reliability of the results.

Globally, most prisoners tend to come from the lower end of the socioeconomic spectrum; they have a low education and a wide range of physical and mental health problems. Since the 1980s, mental health problems have become increasingly common and better recognized among prisoners, leading to a growing recognition of the need for preventive measures and treatment options (Obstbaum-Federley, 2017; Joukamaa *et al.*, 2010). Indeed, it is crucial that comorbidities and depth of pathology are properly recognized before prognosis and treatment mechanisms are set up. Based on a pathways model of gambling, there is a possibility that prisoners may fall into the third subgroup of pathological gamblers, which is characterized by signs suggestive of neurological (Young *et al.*, 2015; Morde *et al.*, 2011) and neurochemical dysfunction, impulsivity and antisocial personality disorder (Blaszczynski and Nower, 2002; Nower and Blaszczynski, 2016). Future research could examine if problem gamblers, perhaps even by gender, in prison populations are in fact more likely to fall into the third subgroup. Both the accumulation of various problems and comorbidities suggest that this specific subgroup would greatly benefit from thorough clinical assessment.

Gambling and crime

One-third of the participants who were identified as problem gamblers reported that their current sentence was gambling related. Similarly, Turner *et al.* (2009) reported that 65 percent of the prisoners studied in Canada with serious gambling problems were sentenced for a gambling-related offense. In New Zealand, 19 percent of female and 9 percent of male prisoners who were recently sentenced had a gambling-related offense (Abbott and McKenna, 2005; Abbott *et al.*, 2005). Despite the high rate observed by Turner, treatment for problem gambling is still not systematically integrated into prisoner health care anywhere in the world. There is clearly a need for preventive and supportive interventions and the early identification of problem gambling.

Problem gambling has many adverse consequences, one of which is criminal behavior. Problem gambling and crime can also be part of a risk-taking lifestyle (Mishra *et al.*, 2011). Previous studies indicate that problem gambling tends to accumulate in socio-economically vulnerable populations. As the spiral of the gambler deepens, there are ever fewer legal options to finance gambling. Eventually, severe financial difficulties and indebtedness can lead to property crimes. This study suggests that problem gambling is relatively common, especially among prisoners sentenced for financial crimes.

In line with previous research, the results of this study suggest that problem gamblers' sentences are often associated with gambling, particularly with income-generating crime (see also Riley *et al.*, 2017; Riley and Oakes, 2015; Turner *et al.*, 2009; Abbott and McKenna, 2005; Abbott *et al.*, 2005). This is not surprising, since the aim and purpose of gambling-related crimes are precisely to finance gambling or to pay off gambling debts (Turner *et al.*, 2009; Lind *et al.*, 2015). In our study, one participant was sentenced for a violent crime other than homicide and one for a drug-related crime. Such gambling-related violent crimes may include domestic violence, debt collecting induced by problem gambling or laundering drug money by gambling.

Women who had a previous sentence were more likely to have a gambling problem (cf. Bevan and Wehipeihana, 2015). In order to reduce recidivism, it is important to identify and provide appropriate treatment for possible gambling problems as early as possible. Riley *et al.* (2017) reported that women prisoners' help-seeking rate was higher than in the general population. As this seems to be the case, courts could encourage help seeking. Cuadrado and Lieberman (2012), for their part, recommend screening programs in view of the high proportion of problem gamblers among prisoners and the fact that they are charged with more severe type of crimes. In fact, it would be prudent to screen all offenders who enter the criminal justice system (e.g. court) to identify those in need of help as early as possible, for example, using a court diversion program (see Riley *et al.*, 2018). Future research could examine the prevalence of problem gambling among offenders entering the justice system.

Support preferences

One-quarter (24 percent) of our participants showed an interest in receiving support by selecting one or more support preferences, which is in line with a previous study showing similar rates in prior help-seeking behavior (Riley *et al.*, 2017). The most preferred type of support was group support in all its forms, followed by personal discussions with a prison employee. The low proportion of prisoners willing to seek help may reflect the barrier that continues to deter people from seeking help (Turner *et al.*, 2017; Riley, Larsen, Battersby and Harvey, 2018; Riley, Baigent, Harris, Larsen, Nye and Battersby, 2018), or the individual's motivational stage. One unique discovery in our results was the finding that there were more responses indicating preferred forms of help than possible problem gamblers. This may suggest the presence of hidden problems, but on the other hand, also that if the preferred type of help and support were readily available, the number of prisoners taking advantage would also be higher. This is crucial information for purposes of planning and tailoring interventions in correctional settings. Despite the relatively high prevalence of problem gambling among prisoners, this remains an understudied and underdiagnosed phenomenon. As Turner *et al.* (2017) note, one major issue is the lack of knowledge in the judicial system: unlike substance addictions, problem gambling is still seen primarily as a moral issue, something that is more of a bad choice rather than a true addiction. This is despite the fact that in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013), pathological gambling was renamed as a gambling disorder and moved from the category of impulse control disorder to non-substance related behavioral addiction. Problem gambling is surrounded by a negative social stigma and it might, therefore, be very difficult for outsiders to recognize the problem and for individuals to admit to the problem. The screening and early detection of possible problem gamblers among incoming prisoners is crucial to the effective prevention of recidivism, since untreated gambling problems coupled with accumulating debts can hamper and complicate rehabilitation into society. Financial desperation can greatly narrow the options available to problem gamblers.

Most treatment programs reviewed by Turner *et al.* (2017) take a biopsychosocial approach to problem gambling, using cognitive-behavioral therapy in group settings, with some programs focusing on prevention and others on treatment. Most problem gambling interventions in prison settings are integrated as part of general addiction treatment, while only few programs are specifically designed to address problem gambling. We still do not know what type of programs are most effective, since most treatment approaches used in prisons have not been evaluated. Evaluation is thus an important priority for the future. Prisons have limited personnel resources for gambling-related harm prevention, reduction and treatment, and substance addictions are considered a more visible problem than problem gambling. These kinds of factors may explain why substance addiction treatment is given priority over problem gambling.

Limitations

This study was explorative in nature, investigating prisoners problem gambling in Finland. Although our results are in line with previous studies (Turner *et al.*, 2009; May-Chahal *et al*., 2017; Cuadrado and Lieberman, 2012), they must be interpreted with caution due to the following limitations. Our sample was small and may not be representative of the broader prison population in Finland. The participation rate was low, which in part at least can be explained by the novelty of

the research approach. Furthermore, we only received the total number of prisoners reached, and therefore we could not estimate response rates by gender. The cross-sectional nature of our study prevents any suggestion of causal associations or temporal relations. We did not inquire into the length of the participants' sentences. Response bias cannot be excluded. Those who have been in prison for several years might not recall their gambling behavior before incarceration. Therefore, to avoid this problem, future studies should use a lifetime prevalence timeframe (Riley *et al.*, 2017). Our study shows no positive associations with other addictions, which is unusual. This is likely explained by the measures used, such as the specification of the illicit drugs (Babor *et al.*, 2010) used, the timeframe (current) AUDIT-C and the other limitations mentioned above.

Previous problem gambling surveys in the criminal justice population have used a variety of instruments, such as the South Oaks Gambling Screen and the Canadian Problem Gambling Severity Index (e.g. Turner *et al.*, 2009; May-Chahal *et al.*, 2017), the Lie-Bet (Zurhold *et al.*, 2014; Cuadrado and Lieberman, 2012) which limits the comparability of our results. To our knowledge, BBGS has not been used previously among prison populations. Furthermore, the timeframe of evaluations has varied from current to the past 6 or 12 months before incarceration through to lifetime (Abbott and McKenna, 2005; Turner *et al.*, 2009; Zurhold *et al.*, 2014; Lahn, 2005). In this study, we opted to use the BBGS due to its strong psychometric properties (Gebauer *et al.*, 2010) and its brevity. This brevity probably means that our figures for the prevalence of problem gambling are higher than those based on SOGS and PGSI or clinical evaluations. Future studies should therefore evaluate gambling severity using longer measures coupled with clinical assessments. Ours is the first study to use a brief screen of problem gambling in a prison setting and, at the same time, to inquire about support preferences among those who might be in need of support. We found no gender differences in problem gambling, which may have to do with the sample size or prison setting. This is an area that certainly warrants further investigation, as noted by others (Riley *et al.*, 2017). Overall, although indicative only, our results provide valuable insights for the research community, developers and decision makers alike.

Implications

In 2016, the Criminal Sanctions Agency's Health Care Unit was renamed as the Prisoners' Health Care Unit and placed under the supervision of the National Institute for Health and Welfare. The purpose of this administrative reorganization was to integrate prisoners' health care more closely with wider health care services and to improve the monitoring of health care provision. It will guarantee that prisoners have the same rights to health care as the general population, as discussed by Turner *et al.* (2017). In order to ensure that this basic requirement is met, it is necessary to have mechanisms in place for the early detection of problems, to increase general awareness of gambling problems, and to provide clear intervention guidelines for prison staff. As problem gambling often remains undetected and prison workers are trained and motivated to help (Tourunen and Kaskela, 2014; Turner *et al.*, 2017) and to look for signs of risky behaviors, prisons are a potentially important environment for effective intervention. The reception of the results of our pilot study was very positive at all levels of the Criminal Sanctions Agency. The next steps will be to increase policy makers' awareness of gambling problems; to apply for funding for both quantitative and qualitative studies in prison settings; to draw up guidelines for assessment, support and treatment and to assess the efficacy of these guidelines in the future.

Conclusions

Our study indicates that problem gambling is relatively common among prisoners and that they clearly need support. Surprisingly, despite the strong evidence provided by other studies, we found no association between problem gambling and other addictions. It is more common among inmates sentenced for a property crime, financial crime or robbery than those sentenced for violent crime other crimes. Among women, a previous sentence is associated with having a gambling problem. Based on the results, it is recommended that steps are taken to develop early detection systems and to make tailored treatment options more readily available. In addition to prisons, we also encourage courts to screen for at-risk and problem gambling and to promote help seeking in an effort to divert suitable offenders from incarceration to rehabilitation.

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PUBLICATION
IV

Associations between Gambling Severity and Criminal Convictions: Implications for the Welfare State

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Associations between gambling severity and criminal convictions: implications for the welfare state

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ABSTRACT

This study addresses criminal convictions, social disadvantage and problem gambling as an interwoven set of problems. It makes use of data from a population-based gambling survey ($n = 7,186$) conducted in three Finnish regions. The survey data are combined with national registers to examine associations between sociodemographic factors and gambling severity, comparing persons with and without a criminal record. Gambling behavior included past-year (2016) gambling severity and perceived life-time problem gambling. Social disadvantage was assessed using sociodemographic factors such as education, employment status, level of income and receipt of basic social assistance. Logistic regression analysis showed that both past-year problem or pathological gambling (OR: 2.725) and perceived life-time gambling problems (OR: 2.363) were associated with having a conviction, compared to recreational gambling. Low education, unemployment, low income and receipt of basic social assistance were associated with receiving a conviction. When gender, age and sociodemographic factors were controlled for, odds ratios for both past-year gambling problems (OR: 1.223) and perceived life-time gambling problems (OR: 1.586) did not remain statistically significant. The current study suggests that preventive efforts against problem gambling and interventions in criminal justice systems should be expanded to incorporate the aim of reducing social disadvantage.
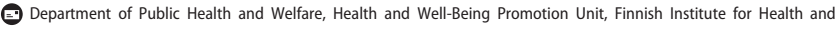
Introduction

Both the connection between gambling and crime and that between gambling and social disadvantage are well established. Numerous studies have found higher rates of problem gambling among criminal offenders than in the general population (Turner and McAvoy 2011; May-Chahal et al. 2017; Turner et al. 2017; Moore 2018; Riley et al. 2018; Lind et al. 2019; Widinghoff et al. 2019; Banks et al. 2020). Although only a relatively small proportion of all crime is gambling-related (Arthur et al. 2014), a study on British prisoners estimated that problem gambling is linked with up to 13% of all offending (May-Chahal et al. 2012). Problem gambling likely plays a significant role in gambling-related crime (Riley and Oakes 2015).

In this study, we explore to what extent factors that often contribute to offending in general also can explain the association between gambling and having been convicted of a crime. This echoes an increasing academic interest in so-called wicked and complex problems, which are thought to be tackled best by leveling out wider social inequalities (Head 2008; McConnell 2018). In the context of the Nordic

welfare state, it is thought that the inherent ability of universal public institutions to iron out differences in social standing applies in the criminal sanction system in its ability to identify and support at-risk populations (Pratt 2007; Lappi-Seppälä and Tonry 2011; Kolind et al. 2013; Kristoffersen 2013, 2013; Lahti 2017). Targeted and cross-sectoral interventions that strive toward this aim are crucial for the reliability and accountability of the welfare state (Hellman 2019a). We propose to approach criminal convictions, social disadvantage and gambling behavior as an interwoven set of wicked problems by combining data from a Finnish population survey on gambling with register-based variables measuring social disadvantage and criminal convictions.

Problem gambling and crime, criminal convictions and social disadvantage

The connection between crime and gambling is a complex one. The relationship has been addressed in surveys aimed at the general population (e.g. Bellringer et al. 2009), help-seeking gamblers (e.g. Meyer and Stadler 1999; Folino and Abait 2009) and offenders in the criminal justice system

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(e.g. Lind et al. 2019). Self-report studies have been crucial for grasping the entire spectrum of delinquent and criminal acts and capture the so-called hidden crime (Kivivuori 2011) or the dark figure of crime (Mosher et al. 2011). In addition, problem gambling has been approached from a criminogenic perspective using court documents (Crofts 2003), police data (Sakurai and Smith 2003; Lind et al. 2015) and official registers (Laursen et al. 2016).

Previous studies suggest that criminal behavior and problem gambling share two kinds of common predictors: (1) psychological factors such as low self-control and depression (Bergen et al. 2014; Welte et al. 2017) and (2) structural factors, such as early employment, low attachment to school and parents, substance use (Dowling et al. 2017). A recent longitudinal study (Dennison et al. 2020) found an association between problem gambling and crime, but this association disappeared when adjusting for socio-demographic differences between those experiencing problem gambling and non-problem gambling.

A Danish register-based study from 2016 identified a strong general association between problem gambling and being charged with a crime (Laursen et al. 2016) showing that violence charges and drug charges were associated with problem gambling to the same extent as economic charges. However, being charged paints a different view of criminality than actual convictions, as it is possible that charges are dropped (Niemi 2018). Due to the complexity and the context-bound nature of the many associations of problem gambling and different types of crime, there is a great need for more knowledge, particularly outside North America, New Zealand and Australia (see Adolphe et al. 2019).

In this study, we use registered data on criminal convictions, representing delinquent and offending behavior for which the individual has been apprehended and convicted by the judicial system. However, is important to note, that what behaviors are registered as criminal offenses by the judicial system is also a question of criminal code, legal praxis, and, how and where police resources are used for surveillance, and arrests. It is a measure only of the kind of criminal behavior that is captured and condemned by the judicial system (Kivivuori 2011; Saarikkomäki and Kivivuori 2013).

What is clear, however, is that throughout the world, including Finland and the Nordic countries, persons, who receive criminal convictions, and especially those who are sanctioned to prison or probation, generally belong to the socially disadvantaged part of the population, having lower education, experiencing relatively more unemployment, and also showing more ill-health, and psychiatric problems (Ogloff et al. 2007; Kivivuori and Linderborg 2009; Lintonen et al. 2011; Obstbaum-Federley 2017). In Finland, similar disadvantages are associated with gambling (for instance Lind et al. 2015). Reasoning drawing on Gottfredson and Hirschi (1990) general theory of crime attribute both drug use and criminal behavior to low self-control: both types of behavior show elements of a desire for immediate gratification. The same logical connection is also often made in studies that theorize the connection between gambling and

crime (Blaszczynski and Nower 2002). While these studies capture important (social)psychological mechanisms in problem behavior, they often pay less attention to societal structures and the kind of factors that may be influenced through supportive actions by the welfare state.

In this paper, we look at the relationship between problem gambling and criminal behavior and the role of sociodemographic factors (e.g. gender, and socioeconomic disparities such as education, employment status, level of income and receipt of basic social assistance). Little is known about the social disadvantages underlying both these paths and that could consequently shed light on how they are intertwined. As far as we are aware there is no earlier work that addresses socioeconomic disadvantages, gambling and crime from a societal viewpoint and that considers the implications of such a societal framing for the welfare state on a more principal level. Two recent works that come closest to this endeavor approach gambling systems as part of the welfare state regime (Egerer et al. 2018) and understand gambling-related harm in a public interest framing (Sulkunen et al. 2018).

Pathways to problems

Excessive gamblers have to constantly search for new sources of money. A typical first step is to cut back on other non-essential consumption, but after a while, this may be extended to important outlays such as food or rent. In severe cases, the individual may go on to accumulate substantial debt and commit legal offenses (e.g. Sakurai and Smith 2003; Oksanen et al. 2018). In addition to the correlation with crime (Laursen et al. 2016; Adolphe et al. 2019), gambling also entails some fundamental mechanisms that stratify people by socioeconomic status. Lower-income groups suffer proportionately more harm from their gambling habit than higher-income groups (Rintoul et al. 2013). Although problem gamblers often resort to crime to cover up their gambling-related financial difficulties (Turner et al. 2009), financial pressure alone does not in itself explain the complex relationship between gambling and crime (e.g. Lind et al. 2015; Banks and Waugh 2019).

Gambling is connected to self-reported crime; to other delinquent acts, some of which remain undetected by the criminal justice system (Crofts 2003; Sakurai and Smith 2003); and to crime leading to convictions and even prison sentences. Most problem gambling-related property crimes take place at home or in the workplace (Lind et al. 2015; Binde 2016). It is likely that problem gambling-related crimes committed against close family members are underreported to the police, being settled between the victim and the perpetrator. Victims might even be unaware that a crime has been committed, which will obviously affect reporting statistics.

The aim of this study is to investigate possible associations between gambling severity and involvement in criminal behavior in terms of criminal justice convictions. We will also examine whether any associations detected are explained by confounding sociodemographic factors

associated with gambling and criminal behavior that has led to a conviction. Through our findings, we will discuss how the emerging picture of the problems can be understood from the point of view of welfare state accountability (WSA) (Hellman and Alanko 2021).

Materials and methods

The data used in this study stems from the population-based Finnish Gambling Harms Survey (Salonen et al. 2017, 2018) by the Finnish Institute for Health and Welfare. The survey gathered information about gambling, gambling-related harm and opinions on gambling marketing in connection with the 2017 reform of the Finnish gambling monopoly. The first wave of data was collected by Statistics Finland and represents the situation before the reform. Most of the demographic background variables were drawn from Statistics Finland's national registers and combined with the survey data.

Statistics Finland collected the data between January and March 2017 (Salonen et al. 2017) from adults in three Finnish regions. Participants were randomly drawn from the population information system. Oversampling was done in the age group 18–24. Statistics Finland collected the data between January and March 2017 (Salonen et al. 2017) from adults in three Finnish regions. 20,000 persons were randomly drawn from the population information system and invited to participate. The criteria for inclusion in the sample were age 18 or over (the age limit for gambling is 18 years) and the ability to understand Finnish or Swedish (Finland's second official language). Institutionalized persons such as inmates in prisons, mental health patients and the infirmed were excluded (Salonen et al. 2017).

The data were collected using web and postal surveys (Salonen et al. 2017). Invitation letters to potential participants were sent to home addresses retrieved from the population information system.

Non-eligible individuals ($n = 67$) were excluded from the study, leaving a final study sample of 19,933 persons (Salonen et al. 2017). The response rate was 36.1%: 7,186 adults participated in the study. Men and younger respondents were more reluctant to participate than women and older respondents. Most respondents, 71% ($n = 5,084$) used the online survey, 29% ($n = 2,102$) participated through the postal survey (Salonen et al. 2017).

Context

Finland has a state-owned gambling monopoly that provides a wide range of gambling products such as lotteries, EGMs and betting. The main justification for the monopoly system is the prevention and minimization of harm caused by gambling. Gambling is a popular pastime activity: according to the latest population surveys around 80% of Finnish people have gambled on at least one game type during the past year (Salonen and Raisamo 2015; Salonen et al. 2020). In 2018, the gambling monopoly revenue was estimated at over 3 billion euros (H2 Gambling Capital). Just 2.5% of all gamblers

account for 50% of total gambling expenditure (Salonen et al. 2017, 2020). Using the South Oaks Gambling Screen (SOGS 3+), it has been estimated that around 3% of the Finnish population meet the criteria for past-year problem gambling (Salonen and Raisamo 2015; Salonen et al. 2020).

Measures

Criminal convictions

Data on criminal convictions were drawn from national registers kept by Statistics Finland. A total of 123 respondents (2.1%, weighted percentage) had been convicted for at least one crime during the past five years (in 2012–2016) for which the sentence was a prison sentence, community service, or a probation order. The data did not include petty fines. The crime data included the year of order and the title of the conviction. The distribution of crime types in this data set is presented in table 1 and it was similar to overall reported crime in Finland (see Danielsson 2019). The most common types of crime committed in the past five years among the studied survey population were property or financial crimes. Due to the small number of convicted respondents we were not able to analyze the data by different crime types.

Gambling severity

Past-year (i.e., 2016) gambling severity was measured using the 14-item Problem and Pathological Gambling Measure (PPGM; Williams and Volberg 2010). PPGM has been shown to be the most sensitive and accurate instrument available (Williams and Volberg 2014). It has three categories: recreational gambling, at-risk gambling and problem or pathological gambling. Those who gambled less than monthly were categorized as recreational gamblers. One additional category was created to represent people who did not gamble at all in 2016. Perceived life-time gambling problems were inquired using the question: 'Have you ever felt that gambling is a problem for you?' ('Yes', 'No', 'I don't know'). The last two categories were combined with those who had never gambled or who had missing data.

Sociodemographic variables

Statistics Finland's register data contains various information about the respondents, including gender and age, but also factors reflecting social disadvantage, such as education, employment status, level of income and receipt of basic social assistance in 2016.

Age was classified into six categories. As the World Health Organization's definition for youth extends to age 24, the first age group was from 18 to 24 years and the last 10-year age group from 54 to the most common retirement age of 64. Education was measured using register-based information on whether or not the respondent had completed the matriculation examination, which is required for entry into university and other institutions of higher education.

Table 1. Crime types of convictions.

	One conviction % (n of convictions)	Two or more convictions % (n of convictions)	Total % (n of convictions)
Property or financial crime	13.3 (10)	51.7 (166)	44.4 (176)
Violent crime	16.0 (12)	8.4 (27)	9.8 (39)
Drug-related crime	9.3 (7)	8.7 (28)	8.8 (35)
Traffic-related crime	46.7 (35)	19.0 (61)	24.2 (96)
Other crime(s)*	14.7 (11)	12.1 (39)	12.6 (50)
At least one crime	18.9 (75)	81.1 (321)	100 (396)

The data includes 123 different respondents. Percentages and frequencies are unweighted. The table includes crime convictions during the past five years (in 2012–2016) for which the sentence was a prison sentence, community service, or a probation order. It is possible one respondent has several convictions. The data did not include petty fines. *Other crimes included e.g.: civil wrong, crimes against official duty and public order.

Typically, those with college aspirations complete the matriculation examination and students with no such aspirations opt for vocational education. The level of income in 2016 (€/month) was divided into quartiles. Based on these quartiles, income level was then divided into three categories: low (Q1: under €1316.67), average (Q2 and Q3: €1316.68 to €2725) and high (Q4: €2726 or over). The data also included receipt of basic social assistance in 2016. This is available to individuals and families whose income and assets do not cover their essential daily expenses.

Data analysis

The data were analyzed using SPSS 27 software (SPSS, Inc., Chicago, IL, USA). The data were weighted based on gender, age, education and region of residence. Statistical significance (p) was determined using chi-squared test (>2 groups). Models were built using binary logistic regression. Throughout this paper whenever we report odds ratios, we do so holding all other variables at baseline.

Results

Description of the respondents

Except for Table 1, all percentages in this section refer to the percentages in the weighted sample and all summary statistics are calculated on the weighted sample. Our sample comprised 7186 respondents aged 18 or over. 52.3% of the respondents were women and 47.7% men. The mean age for women was 50.51 years (SD: 19.04) and the mean age for men 50.53 years (SD: 18.47). The women's monthly net income (mean = 1986.92 €, SD: 1113.23) was lower than men's (mean = 2416.22 €, SD:1574.17).

The proportion of respondents with one or more criminal convictions in the past five years was 2.1% (non-weighted $n = 123$). The respondents' had committed a total of 396 crimes. As one criminal charge can include several crimes, it was possible for a single respondent to be convicted of several crimes at the same time. In these cases the statistics use the so-called principal offense rule, according to which each defendant or convicted person is described by the most serious offense. However, 58.6% of the convicted respondents were only convicted for a single crime. The most common (Table 1) crime types in convictions were property or financial crimes (44.4%) and traffic charges (24.2%). Having two or more convictions was most common with property or

financial crimes. Those respondents who had traffic charges had most often only one conviction. Traffic-related crime included, for example, aggravated endangering of traffic safety, which had led to a conviction. Petty fines were not included in the data, thus minor traffic offenses are not included here.

Sociodemographics and conviction

Having at least one conviction during the past five years was more common among men (3.7%) than women (0.7%) (Table 2). Persons with convictions also had a lower level of income. Having a conviction was most common among the unemployed (9.7%). 3.0% of persons who had not completed the matriculation examination had convictions, compared to 1.0% of those who had completed the matriculation examination. Having convictions was significantly more common among those who had received basic social assistance in 2016 (13.5%) than those who had not received assistance (1.5%).

Gambling severity and conviction

The severity of past-year gambling was associated with having a conviction: 8.8% of probable problem or pathological gamblers had received convictions during the five-year period preceding the survey, compared to 3.5% of past-year at-risk gamblers, 2.0% of recreational gamblers and 1.2% of non-gamblers (Table 3). Perceived life-time gambling problems were also associated with having at least one conviction during the past five years.

Logistic regression models

In our logistic regression models recreational gambling were chosen as the reference group, due to the large size of this specific group. Given the popularity of gambling in Finland, recreational gambling form the normative category. Our first logistic regression model (Model 1, Nagelkerke $R^2 = .029$) only included gambling-related variables: past-year gambling severity (PPGM) and perceived life-time gambling problems (Table 4). According to this model both past-year problem or pathological gambling (OR 2.725; 95% CI 1.339, 5.558) and perceived life-time gambling problems increase the odds (OR 2.363; 95% CI 1.345, 4.150) of having at least one conviction.

Table 2. Association between sociodemographic characteristics and having a conviction during the past five years.

	Total N	At least one conviction		No convictions		χ2(df), p Value
		N	(%)	N	(%)	
All	7186	123	2.1	7063	97.9	
Gender						χ2(1) = 78.23, p < .001
Female	3911	21	0.7	3890	99.3	
Male	3275	102	3.7	3173	96.3	
Age group						χ2(5) = 34.21, p < .001
18–24	874	23	3.1	851	96.9	
25–34	925	22	3.1	903	96.9	
35–44	1016	14	1.6	1002	98.4	
45–54	1059	25	2.9	1034	97.1	
55–64	1248	25	2.3	1223	97.7	
65 or over	2064	14	0.6	2050	99.4	
Level of income in 2016 (€/month)						χ2(2) = 40.56, p < .001
Low (Q1)	1800	53	3.8	1747	96.2	
Average (Q2 and Q3)	3184	54	2.1	3130	97.9	
High (Q4)	2144	16	0.8	2128	99.2	
Employment status in 2016						χ2(2) = 107.10, p < .001
Employed	3771	46	1.5	3725	98.5	
Unemployed	445	35	9.7	410	90.3	
Outside labor force and other[a]	2968	42	1.6	2926	98.4	
Education						χ2(1) = 34.57, p < .001
No matriculation examination	3586	90	3.0	3496	97.0	
Matriculation examination	3600	33	1.0	3567	99.0	
Received basic social assistance[b] in 2016						χ2(1) = 230.04, p < .001
No	6890	87	1.5	6803	98.5	
Yes	316	36	13.5	280	86.5	

Percentages are weighted, frequencies unweighted; [a]includes pensioners, students, persons suffering from long-term illness, caregivers, others and those who don't want to answer. [b]Basic social assistance is available to individuals and families whose income and assets do not cover their essential daily expenses.

Table 3. Association between gambling behavior and having a conviction during the past five years.

	Total N	At least one conviction		No convictions		χ2(df), p-value
		N	%	N	%	
All	7186	123	2.1	7063	97.9	
Gambling severity[a] in 2016						χ2(3) = 45.521, p < .001
Does not gamble	1310	12	1.2	1298	98.8	
Recreational gambling	5001	81	2.0	4920	98.0	
At-risk gambling	626	18	3.5	608	96.5	
Problem or pathological gambling	139	11	8.8	128	91.3	
Perceived life-time gambling problems						χ2(1) = 46.966, p < .001
Yes	295	20	7.0	275	93.0	
No	6891	103	1.9	6788	98.1	

[a]PPGM: Problem and Pathological Gambling Measure; percentages are weighted, frequencies unweighted; may not add up to 100% due to rounding.

The second logistic regression model (Model 2, Nagelkerke R^2 = .209) included gender, age, education, level of income, BSA and employment status. This model suggests that, compared to female respondents, males had significantly higher odds (OR 5.004; 95% CI 3.233, 7.745) of receiving a conviction during the past five-year period. The odds of a conviction was also higher among younger age groups than in the oldest age group (65 years or older). Those who had not completed the matriculation examination were significantly more likely to have a conviction (OR 2.458; 95% CI 1.635, 3.697). Respondents who had received basic social assistance were more likely (OR 3.874; 95% CI 2.531, 5.929) to have convictions than those who were employed; the same was true of the unemployed (OR 2.814; 95% CI 1.728, 4.584). Being outside the labor force (students, pensioners and those retired for health reasons) did not increase the odds of having a conviction compared to those who were employed. Compared to the highest earning quartile, respondents with low (OR 2.734; 95% CI 1.414, 5.286) and average (OR 2.333; 95% CI 1.303, 4.176) income levels were more likely to have convictions.

Gambling-related variables were added to the third model (Model 3, Nagelkerke R^2 = .216) together with gender, age and socioeconomic background variables. In this model, odds ratios remained relatively high for both past-year gambling problems (OR 1.223; 95% CI 0.576, 2.597) and perceived life-time gambling problems (OR 1.586; 95% CI 0.884, 2.844), but these associations did not statistically significantly increase the odds of having a conviction.

Finally, a series of additional models were run to explore which exact sociodemographic variables attenuated the past-year gambling severity (PPGM) into non-significant. First, each background variable was analyzed separately with only past-year gambling severity. None of the background variables alone contributed to the past-year gambling becoming statistically non-significant. After this, both past-year gambling severity and perceived life-time gambling problems were analyzed separately with each background variable. These models revealed that only BSAdropped the past-year gambling severity to non-significance. Both, gender and education, however, turned it very close to non-significant.

Table 4. Logistic regression models on factors associated with having a conviction.

	Model 1		Model 2		Model 3		Model 4	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Gender								
Male			5.004**	3.233–7.745	4.742**	3.047–7.381		
Female			Ref.		Ref.			
Age								
18–24 years			3.742*	1.609–8.703	3.822*	1.596–9.152	4.571**	1.977–10.569
25–34 years			5.838**	2.588–13.169	5.949**	2.555–13.850	6.097**	2.715–13.693
35–44 years			3.267*	1.363–7.831	3.368*	1.370–8.280	3.812*	1.592–9.126
45–54 years			5.047**	2.245–11.347	5.357**	2.312–12.410	6.415**	2.833–14.529
55–64 years			3.266*	1.469–7.260	3.451*	1.508–7.895	4.181**	1.858–9.409
65 or over			Ref.		Ref.		Ref.	
Education								
No matriculation examination (ME)			2.458**	1.635–3.697	2.446**	1.619–3.694		
Has ME			Ref.		Ref.			
Level of income								
Low (Q1)			2.734*	1.414–5.286	2.800*	1.446–5.423	3.024**	1.593–5.744
Average (Q2 and Q3)			2.333*	1.303–4.176	2.233*	1.244–4.008	2.210*	1.250–3.906
Highest (Q4)			Ref.		Ref.		Ref.	
Basic social assistance, BSA								
Has received BSA			3.874**	2.531–5.929	3.700**	2.402–5.698		
Has not received BSA			Ref.		Ref.			
Employment status								
Unemployed			2.814**	1.728–4.584	2.788**	1.709–4.548	5.093**	3.266–7.943
Outside labor force			1.231	.735–2.062	1.211	.721–2.033	1.705*	1.044–2.783
Employed			Ref.		Ref.		Ref.	
Past-year gambling severity[a]								
Does not gamble	0.648	.376–1.116			.845	.479–1.491	.663	.381–1.153
At-risk gambling	1.555	.964–2.507			.983	.570–1.545	1.355	.834–2.201
Problem or pathological gambling	2.725*	1.339–5.558			1.223	.576–2.597	2.194*	1.040–4.632
Recreational gambling	Ref.				Ref.		Ref.	
Perceived life-time gambling problems								
Yes	2.363*	1.345–4.150			1.586	.884–2.844	1.933*	1.077–3.470
No	Ref.				Ref.		Ref.	
Log likelihood	1424.2		1190.5		1170.3		1291.9	
LR Chi2	38.9		283.2		290.2		168.6	
P	<0.001		<0.001		<0.001		<0.001	
Nagelkerke R	.029		.209		.216		.126	

$*p \leq .05$; $**p \leq .001$; [a]PPGM: Problem and Pathological Gambling Measure; Weighted data was used.

Past-year gambling severity and perceived life-time gambling problems remained statistically significant when only age, level of income and employment status were added to the final model including the past-year gambling severity and perceived life-time gambling problems (Model 4, Nagelkerke R^2=.126). In models with gender, BSA and education included, the gambling variable did not remain statistically significant.

Discussion

This study made use of a rare opportunity to explore the relationship between self-assessed gambling behavior and register-based background variables describing socioeconomic status and criminal justice sentences. We approached these concurrent problems as the kind of entangled problems that the Nordic welfare state has set out to address with its general focus on equity, soft correctional treatment and inclusion (Hellman and Alanko 2021).

No clear link between gambling severity and having a conviction

When gender, age and sociodemographic factors were controlled for in our models, odds ratios for both past-year

gambling problems and perceived life-time gambling problems did not remain statistically significant. Receiving basic social assistance had the biggest influence to the gambling severity becoming non-significant. This implies that particularly receiving basic social assistance is associated with both gambling severity and having a conviction. Those who had received basic social assistance had higher odds of having both convictions and gambling problems. Past-year gambling severity and perceived life-time gambling problems remained statistically significant only when age, level of income and employment status were left to the final model including the past-year gambling severity and perceived life-time gambling problems. In models with gender, BSA and education included, the gambling variable did not remain statistically significant.

However, our binary analyses confirmed that gamblers, and problem gamblers in particular, are overrepresented among persons convicted for a crime during the past five years. Among past-year probable problem or pathological gambling, 8.8% had a conviction, compared to 2.0% of recreational gambling and 1.2% of non-gambling. These results are in line with previous Finnish (Lind et al. 2019) and international findings (Turner and McAvoy 2011; May-Chahal et al. 2017; Turner et al. 2017; Moore 2018; Riley et al. 2018; Widinghoff et al. 2019; Banks et al. 2020).

Underlying disadvantages might lead to both behaviors

Our results show that male gender, young age, low income, receiving basic social assistance, not having completed the matriculation examination and being unemployed were indicators of having criminal convictions. The over-representation of criminal convicts among persons with pathological gambling may therefore be associated with these background factors, the majority of which represent particularly the socially disadvantaged population, so that they predict both pathology gambling and criminal convictions.

Psychological and constitutional factors have been thoroughly mapped for both problem gambling (e.g. Blaszczynski and Nower 2002) and people in the criminal corrections system (Sampson and Laub 1995). Our results may, to some extent, reflect the Pathways Model (Blaszczynski and Nower 2002), which associates criminal behavior especially to a pathway labeled as 'antisocial impulsivist persons experiencing problem gambling'. The Pathways model identifies three types people with problem gambling: behaviorally conditioned, emotionally vulnerable and antisocial impulsivist persons (Blaszczynski and Nower 2002). The latter may also become involved in other problematic and risky behaviors, including criminal activity. In future studies, it could be fruitful to further explore these themes using health-related register data.

Originally developed in 1968, the problem behavior theory is a social psychological framework for exploring deviance using behavioral background factors in sociocultural systems and involving a system for socialization and a system of personality traits (Jessor et al. 1968, p. 132). Over time, the theory has expanded beyond explaining problem behavior and evolved into a detailed conceptual structure (Jessor and Jessor 1977). In the 1980s and 1990s, health-related behavior came to play a more important role in problem behavior theory and was increasingly conceptualized in the explanatory variables of psychosocial and behavioral issues that capture lifestyle (Jessor 2014). Attempts to develop models for gambling in this framework have mostly been within the field of psychology (e.g. Sharpe and Tarrier 1993; Blaszczynski 1999).

This study has allowed us to identify a group of people that is hard to reach for societal efforts of integration. This is consistent with previous studies (Rintoul et al. 2013; Abdollahnejad et al. 2014; Cowlishaw et al. 2014) which have identified many comorbidities between gambling and social disadvantage as well as between disadvantage and gambling disorders. There are also many other factors such as smoking, drug use and risky alcohol consumption that are associated with both problem gambling and criminal activity (e.g. Welte et al. 2001; Mishra and Lalumière 2008; McGrath and Barrett 2009). As for associations with being convicted for illegal acts, various empirical studies have reported that gambling, risk-taking and antisocial behavior tend to co-occur (e.g. Mishra et al. 2010, 2011, 2017; Mestre-Bach et al. 2018b). Furthermore, problem gamblers who commit criminal acts seem to show poorer cognitive control and higher psychopathology (Mestre-Bach et al.

2018; Fatima et al. 2019). Excessive gambling is also linked with violent behavior (Laursen et al. 2016).

Addressing disadvantage from the perspective of welfare state accountability

Our findings suggest that multiple measures of problem behavior and social disadvantage are concentrated in specific demographic groups, thus making these groups vulnerable to a wide range of issues such as financial strain from gambling and a higher rate of criminal convictions. While these findings are in line with basic problem behavior theory (e.g. Jessor and Jessor 1977), we did not find a direct associations between criminal convictions and problem gambling when sociodemographic group status was properly adjusted for.

Persons with social disadvantage are disproportionately represented in the criminal justice system (see e.g. Lofstrom and Raphael 2016), partly because the typical crimes that they commit are the types of crimes that do not usually go unreported (Skogan 1977). Gambling, financial problems and crime (both economic and violent crimes) often co-occur and therefore it may be useful to deal with them together in what is often referred to as multilayered 'wicked' or complex problem pictures (Rittel and Webber 1974; Devaney and Spratt 2009). The interconnections between gambling and many types of delinquent behavior have many times been explained with individual-level factors such as impulsive behavior or low self-control (e.g. Blaszczynski and Nower 2002). This paper confirms that, there are societal level factors, such as low income level, that both connect to delinquent and criminal behavior and exacerbate the negative effects of gambling or be otherwise associated with it.

The concept of welfare state accountability (WSA; Hellman 2019a; Hellman 2019b; Hellman and Alanko 2021) entails a socio-legal normative point of departure for discussing how well policies and services function in view of the principles of the overall system. The resilience of the welfare state can be understood in terms of the extent to which the welfare state is able to uphold and carry out the social contract. The legitimacy of the state's authority over citizens is embedded in the execution of this contract. When the welfare state's ability to keep up its part of the contract is to be scrutinized in any given question, attention must be directed to the principles of its institutional setup.

Seen in the light of the WSA, the higher prevalence of gambling among socioeconomically vulnerable groups represents a great challenge for Nordic welfare states. As in the case of the other Nordic countries, Finland has recently had the agenda to vertically merge service provision throughout its social and health services (Stenius and Storbjork 2020) and has been forced to revisit some of its key welfare institutional principles including universality and equality (see Kangas and Kvist 2018; Hellman and Alanko 2021). Population studies have shown that gambling expenditure is concentrated in groups with low socioeconomic status and that low-income groups contribute proportionately more of their income to gambling than higher-income groups (Castrén et al. 2018). Male gender, low education, young

age, being single or divorced, unemployment, sick leave, retirement for health reasons, and low income are reported to predict gambling problems (e.g. Tolchard et al. 2014; Salonen and Raisamo 2015; Dowling et al. 2017). This is a group that the Nordic welfare states' universal system is trying to reach with new synergized multi-professional foci (Klavus et al. 2020).

The finding that both gambling and legal offenses are associated with socioeconomically vulnerable backgrounds is in itself an important contribution to the literature on the concentration of multiple problems in vulnerable populations (see e.g. Bjerge et al. 2019). However, since it concerns gambling-related problems, the problem picture emerging from this study has special relevance from a welfare state perspective. Gambling levels and harms are associated with socioeconomic inequality (Rintoul et al. 2013; Tu et al. 2014; Canale et al. 2017). Earlier research has shown that gambling control policies play an important role in adjusting gambling prevalence and harm (Rossow and Hansen 2016). Our study suggests that a social policy that recognizes gambling as an integral part of the risk picture of social disadvantage in general, can effectively counteract the complex relationship between criminal offenses, social status and gambling. This is a task for which the welfare state can and should be held accountable.

It is important to have a clearer understanding of how the gambling habit ties in with other social problems so that the services designed to help gamblers can be more appropriately targeted. Our analysis identified a group of citizens whose life is marred by multiple social disadvantages that are putting them in a vulnerable position. These disadvantages are of special interest from the point of view of the welfare state's aims of promoting equality, inclusion and social integration through its institutional structure.

We found that persons who were more socially disadvantaged on several measures had more often been convicted for a crime. As well as having a lower income level and higher gambling severity scores (PPGM), they had more often received income transfers from the state to cover their daily expenses and had less often taken the matriculation examination than those who had no convictions. On the basis of our data we are unable to assess the causal connections between gambling severity and criminal convictions. Previous studies have shown that both gambling-related criminal activity (see e.g. Kuoppamäki et al. 2014) and problem gambling-related criminal activity exist in Finland (e.g. Lind et al. 2015). However, the question of whether there is a causal relationship between problem gambling and criminal behavior remains controversial. Criminal activity related to problem gambling typically occurs alongside various other aspects of problem gambling, which is the main reason why criminal activity was excluded from the DSM-5 diagnostic criteria for gambling disorder (American Psychiatric Association 2013).

Some of the problems experienced by the gamblers in this study were probably exacerbated by social and economic disadvantage. Financial problems caused by gambling may have a more severe impact on persons in a more precarious social situation and therefore more readily lead to crime. This also underscores the need to develop preventive and supportive services that look at the broader picture rather than address just the most visible and obvious problems, such as gambling-related crime per se (see Conklin 2006; Head and Alford 2015; Bjerge et al. 2019). Our study was limited to exploring social disadvantage in terms of level of income, receipt of basic social assistance and education. To gain a broader view of the social complexity of the relationship between problem gambling and criminal behavior, future studies on gambling and criminal behavior should also consider substance abuse and mental health problems as measures of social disadvantage.

Limitations

The response rate in our study was not very high (36%), but nonetheless higher than the international average for web and postal gambling-related population surveys (Williams et al. 2012). Overall, women and older respondents were more willing to participate than men and younger respondents (Salonen et al. 2017). Gambling participation, particularly online gambling, and both at-risk gambling and problem gambling were more common among those who participated using the online survey than those who used the postal version.

Measurements of socioeconomic status were not affected by memory problems as the data came directly from national registers. Furthermore, compared to self-report evidence on criminal behavior, the registers we used were a reliable source of information on reported and convicted criminal acts. However, since we had only a small number of respondents with convictions, we had to measure convictions as a dichotomous variable and therefore lost valuable information on the quantity and quality of convictions. Moreover, we were unable to determine whether or not the convictions were gambling-related. We were not able to measure the full spectrum of crime, as it is likely that some less-severe criminal incidents do not lead to charges, remain undetected or unreported and thus unregistered. Unfortunately, we were not able to examine crime types due to the small number of responders with both problem gambling and convictions. Furthermore, our register-based information on criminal behavior was limited to the past five years prior the survey.

It is possible that our findings are explained by the relatively small number of respondents ($n = 123$) with a conviction. Indeed future population-based studies on convictions should aim to work with larger sample sizes. Moreover, a more in-depth understanding of the associations between problem gambling and crime requires that we conduct studies in different settings and include prisoners, the clinical population and the general population.

The associations between problem gambling and criminal convictions would probably be stronger if the prison population had been included in the study. It is possible that survey studies such as this are unable to reach the vast majority of people who engage in criminal activity. A more in-depth investigation of criminally active persons would also need to

have access to register data (see e.g. Aaltonen 2013). Lastly, the survey data used in this study were retrospective in nature, and the time frames used for gambling problems and the fact that data on convictions covered a time-period of five years in retrospect, also limit any inferences that can be drawn about causal connections. Therefore, we were unable to make any firm causal claims about the links between problem gambling and crime. The small number of participants in some sub-groups, such as those at-risk and problem gamblers with convictions, may be the reason for non-significant findings although the corresponding OR implies an association between the response and a covariate.

Conclusion

This study implies that problem gamblers are overrepresented among people with crime convictions. However, based on this general population sample of Finnish people, it seems that social disadvantage variables are stronger indicators of criminal convictions than gambling behavior. Therefore, preventive efforts focused on possible problem gambling and interventions in criminal justice systems should also take account of the factor of social disadvantage. This study discerns a multi-problem ridden group that puts the Finnish welfare state's systemic accountability to the test, particularly with regard to its role in regulating gambling, minimizing and preventing gambling-related harm, but also in developing support and treatment services for problem gamblers in the prison population. Our results make it clear that efficient gambling services and a sustainable gambling policy should be an integral part of the welfare state's toolbox in the fight against social exclusion and disadvantage.

Implications

Our results suggest that inclusive, universal and equality-based social policy is closely intertwined with both crime prevention and ethically sustainable gambling policy. Given the complexity of gambling problems, socioeconomic disadvantage and criminal behavior, it is imperative that different service providers in the welfare state work closely with one another. In the Finnish welfare state today, the screening and treatment of gambling problems are not sufficiently integrated: consequently our understanding of how gambling problems are intertwined with social disadvantage and crime remains limited. In a pilot study by Castrén et al. (2019), prison workers were found to be well aware of the extent of problem gambling and they recognized the importance of addressing the issue, but they felt they were ill-equipped to refer their clients to treatment. Similarly, although judges recognize the condition of problem gambling, it is very rarely considered a mitigating factor in explaining criminal activity (Brooks and Blaszczynski 2011). The welfare state and its justice system could well benefit from the introduction of gambling courts, for example (see e.g. Hinshaw 2005; Guenaga 2011; Turner et al. 2017; Laux 2019). Future studies should address the relationship between gambling severity and criminal behavior using larger samples and life-time data on convictions and fines. From the viewpoint of crime prevention development, it would be particularly important to examine how the interconnections between social disadvantage and gambling lead to crimes harsh enough and visible enough to result in criminal convictions.

Disclaimer

The Ministry of Social Affairs and Health, Helsinki, Finland, had no role in the study design, analysis, or interpretation of the results nor in any phase of the publication process.

Ethics approval and consent to participate

The study was conducted in accordance with the ethical standards of the Declaration of Helsinki. The Ethics Committee of the Finnish Institute for Health and Welfare, Finland, approved the research protocol (THL/1390/6.02.01/2016). Additional approval was obtained from the Ethics Committee of Statistics Finland (5/2016, 17.11.2016).

Potential participants were informed about the principle of voluntary participation. They were informed that participating the study involved the register-linkage, in accordance of the national data protection regulations of that time. Furthermore, the letter included information about the registers, their statutory right to disclose data for scientific purposes and a list of the register-based variables used.

The research protocol was approved by the ethics committee of the Finnish Institute for Health and Welfare. The Finnish Gambling Harms Survey dataset is openly available for research purposes from the Finnish Social Science Data Archive (https://www.fsd.uta.fi/en/). Additional approval for the use of the register data was obtained from the ethics committee of Statistics Finland. Analyses were conducted in a protected environment by Statistics Finland using a remote access system, and the results were transferred to the authors through a screening process.

Author contributions

KL, MH, YO and AHS were responsible for conceiving, designing, and planning the study. The data were analyzed by KL. KL and AHS interpreted the results. KL wrote the first draft of the article. KL, MH, YO and AHS critically revised the article for important intellectual content.

Disclosure statement

The authors declare that they have no conflict of interest.

Funding

Data availability statement

Gambling Harms survey data is openly available for research purposes from the Finnish Social Science Data Archive (https://www.fsd.uta.fi/en/). The register-based data was available based on a separate contract with Statistics Finland. The statistical analyses were conducted in a protected environment by Statistics Finland using a remote access system.

The results were transferred to the authors through a screening process.

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