

Survey of the prevalence of gambling and gambling problems in Denmark 2021



Unofficial translation of the survey conducted by Ramboll Management Consulting on behalf of the Danish Gambling Authority. Please note that in case of any discrepancies, the Danish version of the survey will prevail.

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Summary

1

In November 2017, a political agreement was entered into with the aim of strengthening the fight against gambling addiction in Denmark. Based on the agreement, Ramboll Management Consulting has conducted a study of the prevalence of gambling problems in Denmark, in order to monitor trends in the gambling area. The survey was conducted on behalf of the Danish Gambling Authority in the 2021-2022 period. The main conclusions from the report are presented below.

1.1 HOW WIDESPREAD ARE GAMBLING PROBLEMS AMONG THE ADULT POPULATION?

In this survey, gambling problems are measured by the PGSI screening tool. PGSI consists of nine questions that divide respondents into four categories: 1) no gambling problems, 2) low level of gambling problems, 3) moderate gambling problems and 4) serious gambling problems. The proportion of adult Danes who have at least a low level of gambling problems has doubled over the past five years. In 2016, 5.2% of adult Danes had at least a low level of gambling problems, while in 2021 this had risen to 10.9%, and the increase is statistically significant. This development is due to large increases in the categories of Danes with moderate gambling problems and Danes with a low level of gambling problems. From 2016 to 2021, the proportion of people with a low level of gambling problems increased from 3.6% to 6.5%, and this increase is statistically significant. Similarly, the proportion of people with moderate gambling problems showed a statistically significant increase from 1.2% in 2016 to 3.7% in 2021.

The survey shows that in 2021, around 29,500 adult Danes had serious gambling problems, equivalent to 0.67% of the adult population. In 2016, the number was around 16,000, equivalent to 0.38% of the adult population. Even though the figures seem to indicate an increase in the prevalence of serious gambling problems, no significant increase can be noted in the number of adults with serious gambling problems. This is because the difference between 2016 and 2021 lies within the statistical uncertainty of the survey.

When comparing the prevalence of gambling problems in the adult Danish population with Norway and Sweden, the survey shows that Sweden has significantly fewer adults (4.3%) with at least a low level of gambling problems, while Norway has significantly more adults (13.8%) with at least a low level of gambling problems. In Denmark, 10.9% of adults have at least a low level of gambling problems. The survey thus shows that gambling problems are more prevalent in Denmark than in Sweden, while the opposite applies in Norway.

In Sweden, there has been a statistically significant decrease in the prevalence of gambling problems since 2015, while Denmark has seen almost a doubling of gambling problems since 2016, and the increase in Denmark is statistically significant. In Norway, there has also been a statistically significant increase from 2015 to 2019. However, the increase in gambling problems in Norway has not been just as significant as in Denmark.

- In 2016, 5.2% of adult Danes had at least a low level of gambling problems, while in 2021 this increased to 10.9%.
- In 2021, around 29,500 adult Danes had serious gambling problems, equivalent to 0.67% of the adult population. In 2016, the proportion with serious gambling problems was 0.38%. No significant increase can be seen in the proportion with serious gambling problems.
- In Denmark, 10.9% of the adult population have at least a low level of gambling problems, while in Sweden this is 4.3% and in Norway 13.8% (figures from 2019).

1.2 HOW PREVALENT ARE GAMBLING PROBLEMS AMONG CHILDREN AND YOUNG PEOPLE?

Among children and young people aged 12-17, 6% have at least a low level of gambling problems, even though it is not legal for this age group to engage in most types of gambling. The prevalence of gambling problems among children and young people is thereby significantly lower than the prevalence of gambling problems among adults. No previous surveys have been made of the prevalence of gambling problems among children and young people using the PGSI screening tool, so that the development in the prevalence of gambling problems among children and young people cannot be assessed on the basis of this survey.

The survey also shows that around 2,600 children and young people aged 12-17 have serious gambling problems, equivalent to 0.6%. This means that by and large the same proportions of children and young people and of adults have serious gambling problems. Predominantly boys have serious gambling problems.

- Among children and young people aged 12-17, 6% have at least a low level of gambling problems, even though it is not legal for this age group to engage in most types of gambling.
- Among children and young people, around 2,600 have serious gambling problems, equivalent to 0.6% of 12 to 17-year-olds.

1.3 WHO HAS GAMBLING PROBLEMS AMONG ADULTS?

When comparing people who do not have gambling problems to people with gambling problems (moderate or serious gambling problems), the survey shows that the group of people with gambling problems differs in a number of respects. People with gambling problems are more likely to be 1) men, 2) younger (overrepresentation in the 18-24 and 25-39 age categories), 3) less educated and 4) single people. In addition, people with gambling problems are more likely to have family members who also have or have had gambling problems.

People with gambling problems also find that their physical and mental health is poorer compared to people who do not have gambling problems. They have a higher consumption of intoxicants (alcohol and drugs) and a higher self-declared incidence of crime compared to people without gambling problems.

Taking account of demographic and socioeconomic characteristics in an overall regression model, a number of correlations are seen to disappear. It is thus only gender, age, physical health and alcohol consumption that are of independent significance to the probability of gambling problems.

Consideration of the age at which people gambled for the first time shows that people with gambling problems are no different from those without gambling problems. However, people with gambling problems are most likely to engage in physical and online betting when gambling for the first time, while adults without gambling problems are more likely to use lotteries/scratch cards purchased from a physical retailer when gambling for the first time. People with gambling problems have typically been introduced to gambling by a friend and are more likely to have a social circle that engages in gambling.

People with gambling problems prefer online betting and online casinos. Compared to adults without gambling problems, adults with gambling problems spend more time and money on gambling.

- Adults with gambling problems are predominantly men, people aged 18-24 or 25-39, and people with lower levels of education.

- Adults with gambling problems experience poorer physical and mental health, greater use of intoxicants and a higher self-reported incidence of crime.
- A comprehensive regression model that takes account of all demographic and socioeconomic characteristics shows that only gender, age, employment, physical health and alcohol consumption are of independent significance to the probability of gambling problems.
- Adults with gambling problems are most likely to engage in online and physical betting as their first experience of gambling, while adults without gambling problems are most likely to have scratch cards as their first experience of gambling.
- Adults with gambling problems prefer online casino gambling and online betting.

1.4 WHO HAS GAMBLING PROBLEMS AMONG CHILDREN AND YOUNG PEOPLE?

Children and young people with gambling problems differ from children and young people without gambling problems in that they are more likely to 1) be boys, 2) not be in employment, 3) have parents with no labour market affiliation, 4) earn more money from after-school jobs and 5) receive more pocket money. Furthermore, children and young people with gambling problems are more likely to have family members who also have or have had gambling problems.

Children and young people with gambling problems assess their own physical health to be poorer and have a higher consumption of intoxicants (alcohol and drugs) compared to children and young people without gambling problems.

Taking account of demographic and socioeconomic characteristics in an overall regression model, all correlations are seen to disappear, however, with the exception of correlations for gender. The overall regression model thus shows that being a boy is of independent significance to the probability of gambling problems among children and young people.

The age of first gambling experience does not differ between children and young people with and without gambling problems. It can be seen, however, that children and young people with gambling problems are more likely to have betting at a physical retailer as their first experience of gambling, while for children and young people without gambling problems, their first experience of gambling is more likely to be scratch cards/lottery tickets purchased from a physical retailer. Children and young people with gambling problems have typically been introduced to gambling by a friend and are more likely to have a social circle that engages in gambling.

Among children and young people with gambling problems, the preferred type of gambling is online betting and online casinos, while for children and young people without gambling problems, it is lotteries (e.g., scratch cards) purchased at a physical retailer.

- Children and young people with gambling problems are more likely to be boys, not be in employment and have parents with no labour market affiliation, compared to children and young people without gambling problems.
- Children and young people with gambling problems assess their physical health to be poorer and that they have a higher consumption of intoxicants compared to children and young people without gambling problems.
- An overall regression model that takes account of all demographic and socioeconomic characteristics shows that only gender is of independent significance to the probability of gambling problems among children and young people.
- Children and young people with gambling problems are most likely to have online betting as their first experience of gambling. The preferred types of gambling among children and young people with gambling problems are online betting and online casinos.

- Several of the same trends can be seen for both adults with gambling problems, and children and young people with gambling problems. However, children and young people with gambling problems differ from the adult population with gambling problems in that they do not assess their mental health to be poorer and are not more likely to have committed crimes.

1.5 DO ADS AND COMMERCIALS AFFECT THE URGE TO GAMBLE?

This report uses three different methods which all aim to investigate how gambling ads and commercials affect gambling behaviour. The overall conclusion is that on the basis of the surveys conducted it is not possible to draw any clear conclusions as to whether ads and commercials affect the urge to gamble. This is because the surveys in the report point in different directions and that more detailed investigations of this separate issue would be required for any clearer conclusions to be drawn. A survey of the impact of ads and commercials was not the main objective of this report.

The first sub-survey is a survey experiment from which there is no documentation that watching gambling ads and commercials affects the urge to gamble and gambling expectations. However, the survey does find that watching a gambling ad or commercial affects low-frequency gamblers (people who gamble one to four times a month) in terms of a more positive attitude towards gambling and an increased propensity to want to engage in more types of gambling.

In addition to the survey experiment, as part of the survey physical tests were performed of how the body reacts to watching gambling ads and commercials in the case of people with and without gambling problems. These physical tests show that there is no difference in sweat production or heart rate variability in people with and without gambling problems who watch a gambling ad or commercial. The physical tests show, however, that people with gambling problems are less likely to view the text information in ads and commercials that describes the age limit for gambling and provides references to StopSpillet and ROFUS.

The last survey included qualitative interviews with people with gambling problems. These interviews indicate that people with gambling problems are affected by ads and commercials since they lead to spontaneous, unplanned gambling. Several of the interviewees also state that attractive bonuses (e.g., welcome bonuses) reinforce the urge to gamble, as the gambling seems to be 'free of charge'. The interviewees also highlight that they experience ads and commercials as identifiable, which means that they also share the persons' 'luck' or 'successes'. The ads and commercials thereby give a belief that 'if they can, so can I'.

- It has not been possible to draw any clear conclusions from this survey as to whether gambling ads and commercials affect people's urge to gamble.

1.6 IS THERE A LINK BETWEEN GAMING AND GAMBLING AMONG CHILDREN AND YOUNG PEOPLE?

Gaming and gambling are typically deemed to constitute two distinct types of gambling, of which one concerns gambling for money, while the other is a collective term for different video and console-based games (gaming). However, a large proportion of the video games played today include opportunities to buy virtual elements that can be linked to gambling. This survey has therefore analysed the link between gaming and gambling among children and young people.

Gaming is very prevalent among children and young people. 67% of children and young people aged 12-17 are gamers¹. Gaming is most prevalent among boys, of whom 91% are gamers, while among girls, 41% are gamers. Boys spend more time on gaming than girls, and more boys also experience spending too much time on gaming.

The use of skins for gaming is most prevalent among boys. 53% of boys who are gamers have bought and/or sold skins, while this only applies to 19% of girls who are gamers. Skins are used particularly for such games as CS:GO, Fortnite and the Roblox gaming platform.

10% of boys who have used skins have done so in connection with gambling, which currently is not legal in Denmark, while this applies to only 1% of girls who have used skins.

Loot boxes are less prevalent than the use of skins. 33% of children and young people who are gamers have bought loot boxes. For boys, this amounts to 43%, while for girls it is 10%. It is particularly for the CS:GO and Fortnite games and the Roblox platform that children and young people buy loot boxes. 72% of children and young people who have bought loot boxes have spent less than DKK 50 on this during the past month.

The survey's analyses show that the prevalence of gambling problems is significantly greater among children and young people who state that they are gamers. For children and young people who are gamers, 7.3% have at least a low level of gambling problems, while for children and young people who are not gamers, 3.4% have at least a low level of gambling problems.

If we focus on children and young people who are gamers, there is a significantly greater prevalence of gambling problems among those who have used skins and those who have bought loot boxes. Among children and young people who have used skins, 11.5% have at least a low level of gambling problems, while 4.2% of children and young people are gamers, but have not used skins.

Among children and young people who have bought loot boxes, 12.7% have at least a low level of gambling problems, while this is 4.7% for children and young people who are gamers, but have not bought loot boxes, and the difference is statistically significant.

- 53% of boys who are gamers, and 19% of girls who are gamers have bought skins. Among boys, 10% of those who have bought skins have used them in connection with gambling, while this only applies to 1% of girls who have bought skins.
- There is a greater prevalence of gambling problems among children and young people who are gamers, compared to children and young people who are not gamers.
- Among children and young people who are gamers, there is a significantly greater prevalence of gambling problems among those who have used skins, compared to those who have not used skins.
- Among children and young people who are gamers, there is a greater prevalence of gambling problems among those who have bought loot boxes, compared to those who have not bought loot boxes.
- An overall regression model that takes account of demographic and socioeconomic conditions shows that buying loot boxes and using skins is of independent significance to the probability of gambling problems among children and young people.

¹ Children and young people who answered yes to the question: 'Are you a gamer?' The question is shown in Appendix 3, with a detailed description of what gaming includes.

Introduction

2

In 2012, the Danish gambling market was subject to liberalisation. This led to a large number of new gambling operators of both land-based and online gambling. In November 2017, a political agreement was entered into with the aim of strengthening the fight against gambling addiction in Denmark. Based on the agreement, Ramboll Management Consulting has conducted a survey of the prevalence of gambling problems in Denmark, in order to monitor trends in the gambling area. The survey was conducted on behalf of the Danish Gambling Authority in the 2021-2022 period.

In 2006 and 2016, similar surveys were made of the prevalence of gambling problems in Denmark. The survey in 2006 was conducted by SFI (the former Danish National Institute of Social Research), and the survey in 2016 was conducted by VIVE (the Danish Centre for Social Science Research). This survey should be viewed as a continuation of the two preceding surveys, since the main purpose of this survey is, like in the previous surveys, to map the prevalence of gambling problems in Denmark.

In contrast to previous survey reports, this report also reveals the prevalence of gambling problems among children and young people. In addition, the report also focuses on the link between gaming and gambling – with special focus on loot boxes and skins and the comparability of these elements with gambling.

The survey's monitoring group

A monitoring group was attached to the survey and contributed to the qualification of the quantitative and qualitative data collection, and also a qualification of the analyses based on the data. The monitoring group comprised:

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Morten Rønde, Executive Director of Spillebranchen (Danish Online Gambling Association)

Erik Jensen, Executive Director of Dansk Kasinoforening (Danish Casino Association)

Gunnar Sørensen, Chairman of the Board of Dansk Automat Brancheforening (Danish slot machine operators' trade association).

Christian Vedersø, Consultant, /KL7

2.1 Reading guide

The report comprises the following chapters:

Chapter 3 gives a brief description of the analysis design and the methods used in the survey. A more detailed method description can be found in Appendix 1.

Chapter 4 presents an outline of the gambling trends in Denmark.

Chapter 5 presents the results concerning the prevalence of gambling problems in Denmark, the development in gambling problems since 2016 and comparison with the prevalence of gambling problems in Norway and Sweden.

Chapter 6 provides analyses of what characterises adults and children and young people with gambling problems, compared to people without gambling problems. The chapter also presents the results of studies of the impact of ads and commercials on gambling.

Chapter 7 provides analyses of the link between gaming and gambling among children and young people.

Chapter 8 is the report's bibliography.

2.2 List of appendices

Attached to the report are a number of appendices, which are listed below.

Appendix 1: Method descriptions

Appendix 2: Game descriptions

Appendix 3: Questionnaire from the national survey

Appendix 4: Question guide for qualitative interviews

Appendix 5: The impact of ads and commercials on gambling behaviour

Appendix 6: Supplementary charts and tables

Method

3

3.1 Analysis design

The report is based on a number of different data sources that shed light on gambling problems in different ways. The main purpose of the national survey is to investigate the prevalence of gambling problems, while the qualitative interviews with people with gambling problems aim to provide in-depth knowledge about the mechanisms that lead to gambling problems. The survey experiment and the laboratory experiment both aim to shed light on how ads and commercials influence the urge to gamble. Below is a brief description of each data source. A more detailed description of each data source is given in Appendix 1.

Table 3-1. Overall analysis design

Conducted by Ramboll Management Consulting	Conducted by /KL7
National survey for 10,000 adults and 5,000 children and young people	Survey experiment on the effect of ads and commercials with 1,510 people
30 qualitative interviews with persons who have gambling problems	Laboratory experiment on the effect of ads and commercials measured by biometric data with 29 people

3.2 National survey

The purpose of the national survey was to investigate the prevalence of gambling problems in Denmark. The survey concerned adults (18 to 79-year-olds), as well as children and young people (12 to 17-year-olds). Statistics Denmark randomly extracted 10,000 adults and 5,000 children and young people. Concerning children and young people, only those residing with at least one holder of parental custody were included.

Data collection began in June 2021 and was concluded in December 2021. The survey was conducted by issuing three written reminders via e-Boks, followed by telephone follow-ups. Towards the end of the data collection period, people who had not responded were offered a DKK 50 cinema voucher if they responded within 14 days. This was done to increase the response rate. Analyses of the responses show that people who were offered a voucher did not spend less time on the questionnaire and were thereby no less thorough in their response. Adults, on the one hand, and children and young people, on the other, completed the same questionnaire, with a few variations. The questionnaire consisted of around 60 questions and the full questionnaire is presented in Appendix 2.

The PGSI screening tool² was used to measure the incidence of gambling problems. The PGSI tool is used because it supports comparison of the prevalence of gambling problems in 2021 with the prevalence in 2016, as well as comparison of the prevalence of gambling problems in Denmark with the prevalence in Sweden and Norway. The tool consists of nine questions with four response categories with associated scores. Based on the total score, the respondents are divided into four categories.

² Ferris, 2001. The PGSI tool was developed by the Canadian Consortium for Gambling Research and is used in a number of countries to investigate the prevalence of gambling problems. The PGSI tool was also used in Norway and Sweden to investigate the prevalence of gambling problems.

PGSI scores	Category
0	No gambling problems
1-2	Low level of gambling problems
3-7	Moderate gambling problems
8+	Serious gambling problems

The overall response rate for the entire survey ended at just below 38%. (37.6%) – 38.6% among adults and 35.7% among young people. The response rate is lower than in the last prevalence survey of gambling addiction in 2016, when the response rate was around 59%, of which 1 percentage point was partly completed responses, which are not included in this survey's calculation of the response rate. However, the response rate in itself is not an expression of the representativeness of the survey, since the vital aspect is whether it is random who has responded to the questionnaire. To ensure the greatest possible representativeness of the survey results, the data is weighted so that the groups of respondents from which fewer persons responded have greater weight in the analyses³. It should also be noted that the response rate in this survey is at the same level as for similar surveys conducted in Norway and Sweden in recent years.

Table 3-2. Sample and response rates

	Young people	Adults	Total
Gross sample	5,000	10,000	15,000
Net sample Gross sample less persons who wished to be deleted from the survey	4,978	9,970	14,948
Completed responses	1,785	3,861	5,646
Response rate Completed responses as a percentage of the gross sample	35.7%	38.6%	37.6%

Data analyses indicate certain imbalances in the responses in terms of the age and level-of-education groups who responded. The analyses in the report are therefore based on weighted data. For adults, the data is weighted by age and level of education. For young people, the data is weighted by age.

3.3 Qualitative interviews

The purpose of the qualitative interviews was to nuance the results of the national survey and provide deeper knowledge of the causes of and motivation for gambling. Twenty adults and 10 children and young people⁴ were recruited for interviews based on their responses to the survey or via the Danish Centre for Problem Gambling (Center for Ludomani). The focus of the recruitment was on contacting people with moderate or serious gambling problems and people who are gamers. The individual interviews were held either by telephone or virtually, as preferred by the individual interviewee. The themes of the interviews were:

- Gambling behaviour
- Explanations for gambling behaviour
- Ads and commercials and availability
- Slide between gaming and gambling.

³ See the method appendix for further elaboration of the approach to weighting.

⁴ Of the 30 interviewees, six were recruited via the Centre for Problem Gambling and not from the survey responses. For more details, see the method appendix.

3.4 Survey experiment

The purpose of the survey experiment was to investigate how watching a gambling commercial affected the probability of gambling. The survey experiment was conducted by the company

/KL7 among 1,510 adult Danes selected via Norstat's panel. On selecting participants, people who gambled at least once a month were oversampled, so as to account for around half of the participants.

In the survey experiment, the participants were randomly divided into two groups. One group first watched a gambling commercial, while the other group did not. Subsequently, both groups were asked a number of questions about gambling, such as the urge to gamble, interest in gambling and attitude towards gambling commercials.

3.5 Laboratory experiment

The purpose of the laboratory experiment was to investigate whether the body reacts differently to gambling commercials in the case of people who do not gamble, compared to people who gamble, but without problems, and people who have gambling problems. The laboratory experiment was conducted by the Department of Psychology at the University of Southern Denmark for /KL7.

The experiment was conducted by 29 people in three groups watching three gambling commercials. At the same time, the persons' heart rate variability and sweat production in the palm of the hand were measured and their gazes were tracked. The three groups were:

Group 1: Ten participants with no experience from online betting or casinos.

Group 2: Ten participants who had experience from online betting or casinos.

Group 3: Nine participants with a gambling addiction, recruited from the Danish Centre for Problem Gambling.

3.6 Overall data basis

Overall, the report is thereby based on four different data sources that have different purposes. The main purpose of the report is to map the prevalence of gambling problems in Denmark and to investigate which mechanisms lead to problematic gambling behaviour. For this main purpose, the national survey and the qualitative interviews are used. It is Ramboll's assessment that the report is based on a solid data basis, since weighting of the national survey makes it representative of the total Danish population. Ramboll also assesses that the 30 qualitative interviews provide a strong data basis to reveal which mechanisms lead to problematic gambling behaviour. The 30 people who were interviewed were recruited based on their known gambling problems, thereby ensuring that the mechanisms leading to problematic gambling behaviour can be adequately elucidated.

Development of gambling in society

4

In the following chapter, the development of gambling in Denmark is outlined. First, the liberalisation of the Danish gambling market in 2012 is described. This is followed by a description of the development of the Danish gambling market in terms of the number of operators, the gross revenue from gambling and the channelling rate for the Danish market.

4.1 Liberalisation of the gambling market in Denmark

In 2010, the Agreement on partial liberalisation of the gambling market⁵ adopted the modernisation and partial liberalisation of the gambling market as from 1 January 2012. The purpose of the partial liberalisation included further focus on the protection of gamblers, including helping to prevent gambling addiction.

Up to 2012, it was only possible to gain a licence for the supply of slot machines and land-based casinos, while the liberalisation provided for free competition in the area of online casinos and betting. Besides the liberalised areas, lotteries (monopoly and non-profit) also exist in the Danish market. On 1 January 2018, the gambling market was further liberalised, so that it is now also possible to apply for a licence for horse betting and online bingo⁶.

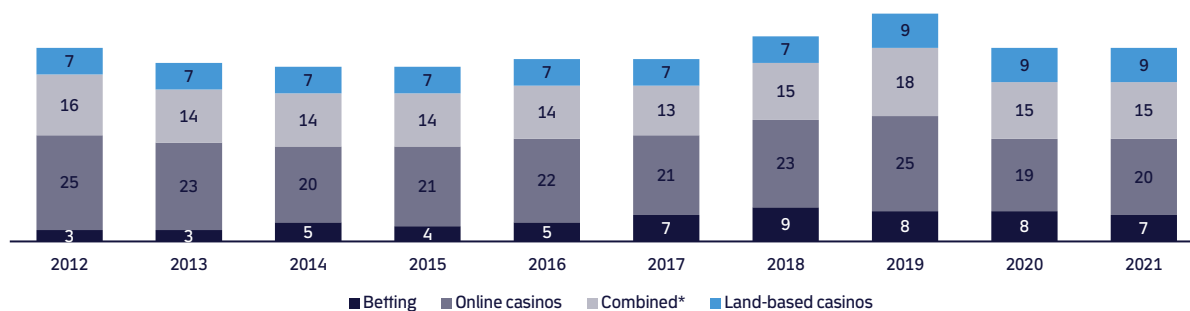
A licence to operate gambling activities also entails a number of regulations with which the licence holder must comply in terms of responsible gambling, anti-money laundering, marketing, technical requirements etc. The Danish Gambling Authority oversees compliance with the regulations and is responsible for ensuring a proper and well-regulated gambling market in Denmark, where gamblers are protected from unfair and illegal gambling.

4.2 Development in the Danish gambling market

Since the liberalisation of the Danish gambling market in 2012, the number of gambling operators in the categories of betting, online casinos and land-based casinos has generally remained stable. On the 2012 liberalisation, a total of 67 licences were issued, distributed on 51 operators of betting, online casinos and land-based casinos and operators licensed to offer both betting and online casino. During the period from 2012 to 2021, there were minor fluctuations in the number of licences, but the development can generally be described as stable, as shown in Chart 4-1.

The number of licences for the installation of land-based slot machines has gradually declined since 2012. In 2012, there were 454 licences to install land-based slot machines, which in 2021 had fallen to 295, as shown in Chart 4-2.

Figure 4-1. Number of operators licensed for betting, online casinos, land-based casinos and combined licences in the period from 2012 to 2021

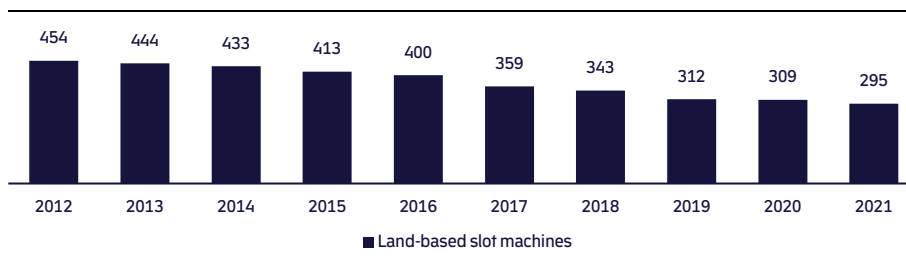


Note: Data from the Danish Gambling Authority.* Combined licences mean that both online casinos and betting may be operated. For land-based casinos, the market is not as liberalised as for online casinos and betting, since only a limited number of licences

⁵ Danish Ministry of Taxation, 2010.

⁶ Danish Ministry of Taxation, 2017.

Figure 4-2. Number of licences for the installation of land-based slot machines in the period from 2012 to 2021



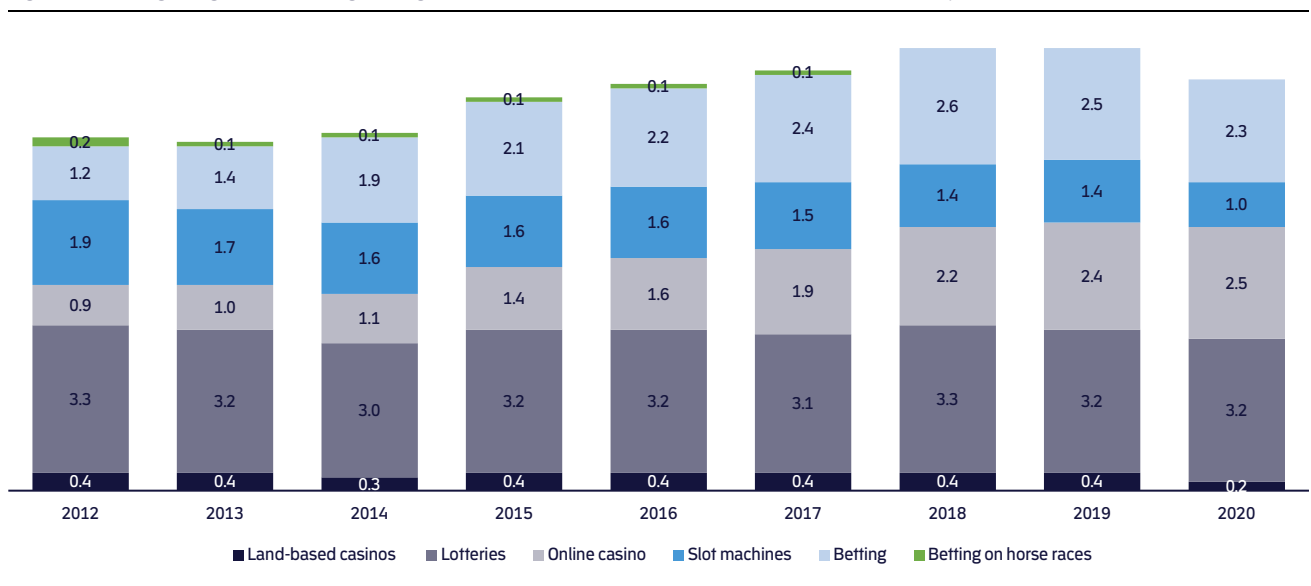
Note: Data from the Danish Gambling Authority.

Since the liberalisation in 2012, gross gaming revenue has been increasing in the regulated market. Gross gaming revenue reflects the total amount that gamblers lose to licence holders and is calculated as stakes minus winnings⁷.

In 2012, total gross gaming revenue amounted to approximately DKK 7.9 billion. By 2020, this had increased by around 17% to approximately DKK 9.2 billion, see Chart 4-3. The decline in gross gaming revenue from 2019 to 2020 of around 7% was probably due to Covid-19, which led to the closure of gambling arcades and restaurants/pubs, land-based casinos and cancelled sporting events.

Online casinos and betting showed particularly high growth during the period. Gross gaming revenue from online casinos increased by approximately DKK 1.5 billion, equivalent to an increase of 167%, from 2012 to 2020, and gross gaming revenue from betting increased by approximately DKK 1 billion, corresponding to an increase of 86% from 2012 to 2020. However, the growth in gross gaming revenue must be viewed in relation to the overall Danish economy, which also grew during the period. From 2012 to 2020, gross gaming revenue's share of GDP remained stable at between 0.39% and 0.43%. Gambling activity thus accounted for almost the same share of the Danish economy in each year⁸.

Figure 4-3. Gross gaming revenue for all gambling areas from 2012 to 2020. Measured in DKK billion, fixed 2020 prices



Note: Data from the Danish Gambling Authority. Betting on horse racing was eliminated as a category in 2018 because the monopoly on horse race betting was removed, so that as from 2018 revenue from betting on horse racing is stated as part of the betting category. In 2021 the total gross gaming revenue amounted to DKK 7.9 billion. In 2020 the amount was DKK 9.2 billion in total. This is an increase of 17%.

⁷ See the Danish Gambling Authority, 2020, for an explanation of the concept.

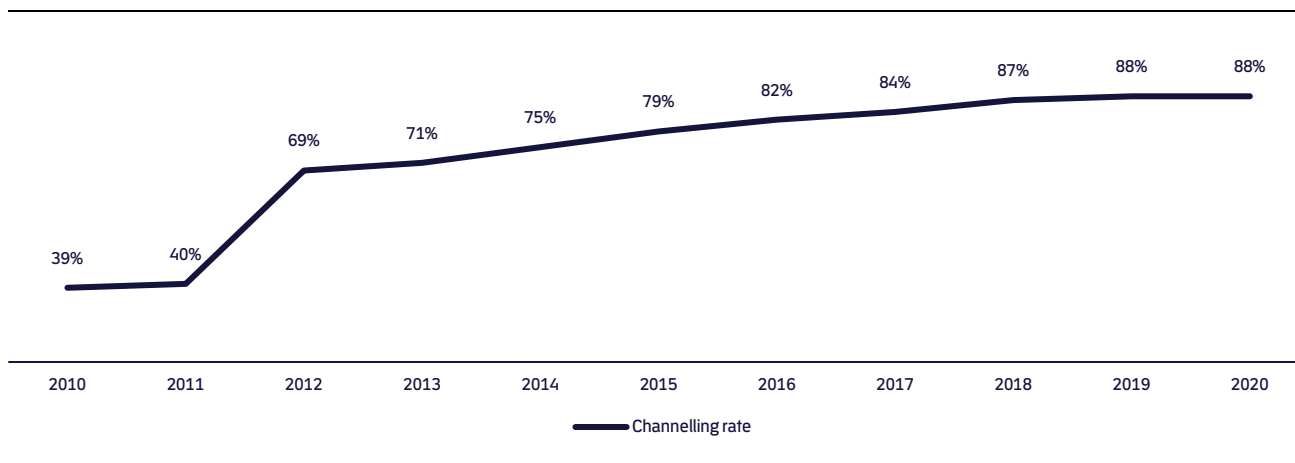
⁸ The Danish Gambling Authority, 2020.

It has been a trend that an increasing share of the total gross gaming revenue originates from online gambling, such as online casinos or online betting. In 2012, online gambling accounted for 31% of the gross gaming revenue, while in 2020 it accounted for 59% of the gross gaming revenue.

Together with the development in gross gaming revenue, an increasing proportion of Danes gamble with gambling operators that hold a Danish licence to provide online gambling.

This is referred to as the channelling rate⁹. The development in the channelling rate is shown in figure 4-4. Prior to the liberalisation in 2011, the channelling rate was 40%, while in 2012 it rose to 69% and by 2020, it had gradually increased to 88%.

Figure 4-4. Development in channelling rate for the period from 2010 to 2020



Note: The figure shows the channelling rate for online gambling from 2010 to 2020. H2 Gambling Capital, 2022.

SUMMARY OF THE DEVELOPMENT IN THE DANISH GAMBLING MARKET

- Since the liberalisation of the Danish gambling market in 2012, there has been a fairly constant number of gambling operators.
- Total gross gaming revenue increased by around 17% from 2012 to 2020, and this increase is primarily driven by growth in gross gaming revenue from online casinos and betting.
- Gross gaming revenue as a ratio of GDP was fairly constant from 2012 to 2020.
- The proportion of total gross gaming revenue originating from online gambling increased from 31% in 2012 to 59% in 2020.
- The proportion of Danes who gamble with operators holding a Danish licence has increased gradually since the liberalisation, and today 88% of gambling takes place with licensed operators.

⁹ H2 Gambling Capital, 2022: The data basis may change, so that the figures may be updated later.

Prevalence of gambling problems in Denmark

5

This chapter focuses on the incidence of gambling problems in Denmark in 2021. The chapter first considers the number of adult Danes with gambling problems in 2021, compared to the number of people with gambling problems in the last survey from 2016. Then the incidence of gambling problems among children and young people in Denmark is investigated. Finally, the incidence of gambling problems across Sweden, Norway and Denmark is compared, in terms of recent status and in relation to development over time. The chapter begins with a brief account of the tool used to measure gambling problems.

5.1 Status and development in the number of adult Danes with gambling problems

The results of the nationwide survey of adult Danes aged 18-79 show that in 2021, 10.9% of Danes in total had at least a low level of gambling problems within the last year. The 10.9% with at least a low level of gambling problems within the last year breaks down as 6.5% with a low level of gambling problems, 3.7% with moderate gambling problems and 0.7% with serious gambling problems.

In 2016, 5.2% of adult Danes had at least a low level of gambling problems, so that this doubled up to 2021. This increase is statistically significant. Among Danes aged 18-79, equivalent to around 478,000 people, 10.9% had at least a low level of gambling problems within the past year. In 2016, this figure was around 212,000 people.

The development from 2016 to 2021 is driven particularly by an increase in the number of people with a low level of gambling problems and in the number of people with moderate gambling problems. From 2016 to 2021, the proportion of people with a low level of gambling problems increased from 3.6% to 6.5%, equivalent to an increase of around 80%, and this increase is statistically significant. Similarly, the proportion of people with moderate gambling problems showed a statistically significant increase, from 1.2% in 2016 to 3.7% in 2021, which is more than a trebling during the five-year period.

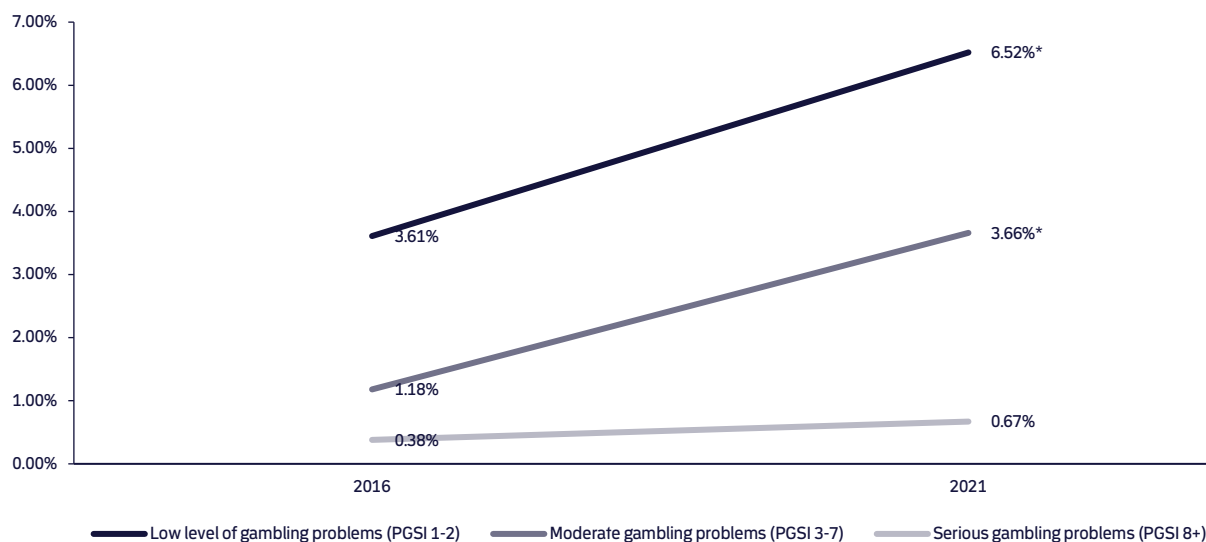
In 2016, people with serious gambling problems accounted for 0.4% of the adult Danish population, while in 2021 they accounted for 0.7%. This increase is not statistically significant, however, as the difference between the two percentages lies within the statistical uncertainty margin¹⁰.

Overall, the survey thereby shows that in 2021 around 29,500 adult Danes could be characterised as having serious gambling problems, based on the PGSI tool. In 2016, the equivalent figure was around 16,000, but as mentioned, the increase from 2016 to 2021 lies within the statistical uncertainty margin, so it cannot be excluded that the increase is due to randomised data collection aspects and thus does not reflect a real increase in the number of adults with serious gambling problems. It should be noted that the summary for the latest prevalence survey shows that 9,800 adult Danes are addicted to gambling¹¹. This figure is based on categorisation according to the NODS screening tool. Comparison of the development from the last prevalence survey based on the PGSI tool corresponds to the above description.

The survey also shows a considerable and significant increase in the number of adult Danes with moderate gambling problems. In 2016, around 49,000 Danes had moderate gambling problems, while in 2021 this had increased to around 161,000 adult Danes. The chart below presents the results described above.

¹⁰ It should be noted that when a 0.3 percentage point increase in the proportion of people with serious gambling problems is not significant, this may be because the 2021 survey has too few respondents for the difference to be identified with sufficient certainty.

¹¹ Fridberg & Jesper, 2016.

Figure 5-1. Prevalence of gambling problems among adult Danes (18 to 79-year-olds) in 2016 and 2021

Note: N=6,180 in 2016, when the survey included 18 to 74-year-olds. N=3,844 in 2021, where the sample includes 18 to 79-year-olds. Weighted data. Significant differences between 2016 and 2021 are marked with an *.

Table 5-1. Proportion of adult Danes with gambling problems in 2016 and 2021

	2016	2021
Low level of gambling problems (PGSI 1-2)		
Per cent	3.61% (3.11-4.11)	6.52%* (5.74-7.3)
Number	148,003	287,055
Moderate gambling problems (PGSI 3-7)		
Per cent	1.18% (0.89-1.48)	3.66%* (3.06-4.25)
Number	48,509	161,138
Serious gambling problems (PGSI 8+)		
Per cent	0.38% (0.20-0.56)	0.67% (0.41-0.93)
Number	15,750	29,498
At least a low level of gambling problems (PGSI 1+)		
Per cent	5.18% (4.58-5.78)	10.85%* (9.87-11.83)
Number	212,262	477,691

Note: 95% confidence interval in parentheses. N=6,180 in 2016, when the survey included 18 to 74-year-olds. N=3,844 in 2021, where the sample includes 18 to 79-year-olds. Weighted data. 2016 data from Fridberg & Jesper, 2016.

5.1.1 Prevalence calculated according to revised PGSI

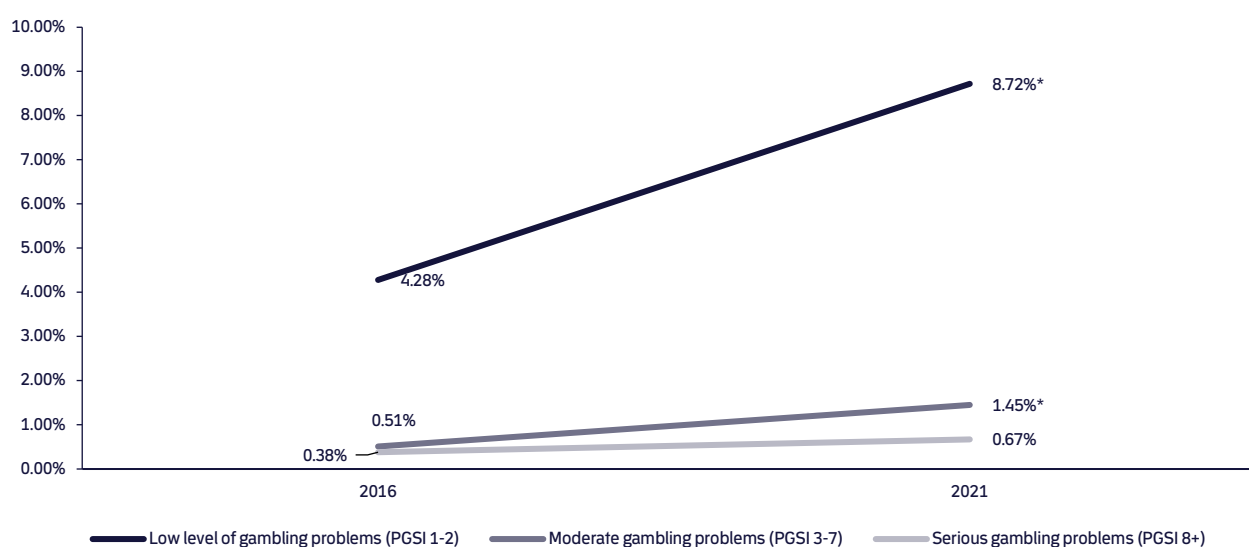
The PGSI tool has been criticised for the fact that the criteria for assignment to the category with moderate gambling problems are too lenient, so that too many people with a low level of gambling problems are categorised as having moderate gambling problems¹². On this basis, a revised version of the PGSI tool has been prepared, whereby fewer people are categorised as having moderate gambling problems, while on the other hand, more people are categorised as having a low level of gambling problems. In the revised PGSI tool, a low level of gambling problems corresponds to a score of 1-4, and moderate gambling problems to a score of 5-7, while serious gambling problems are unchanged and thereby have a score of 8+.

¹² Currie, Casey & Hodgins, 2010.

Calculation of the prevalence of gambling problems according to the revised PGSI tool shows that 8.7% of Danes have a low level of gambling problems, while 1.5% of Danes have moderate gambling problems. The proportion of Danes with serious gambling problems is unchanged when calculated according to the revised PGSI tool.

The development from 2016 to 2021 calculated according to the revised version of the PGSI tool is by and large the same as shown by calculation according to the original version of the PGSI tool. The proportion of adult Danes with a low level of gambling problems has doubled, and this increase is statistically significant. For Danes with moderate gambling problems, the increase has almost been threefold, from 0.51% in 2016 to 1.45% in 2021, and the increase is significant.

Figure 5-2. Prevalence of gambling problems among adult Danes (18 to 79-year-olds) in 2016 and 2021 – compiled using the revised PGSI score



Note: N=6,180 in 2016, when the survey included 18 to 74-year-olds. N=3,844 in 2021, where the sample includes 18 to 79-year-olds. Weighted data. Significant differences between 2016 and 2021 are marked with an *.

5.2 Number of children and young people with gambling problems

This report also maps the prevalence of gambling problems among young people aged 12-17. In formal terms, the legal gambling age in Denmark is 18, disregarding lottery and scratch cards, for which the age limit is 16¹³. Like other previous surveys¹⁴, this survey shows that, despite the legislation, a significant proportion of young people have experience from several types of gambling.

The results of the nationwide survey of young people aged 12 to 17 show that around 6% have had at least a low level of gambling problems within the past year. The incidence of gambling problems is thereby significantly lower among children and young people, compared to the incidence among adults.

For the PGSI categories 'Low level of gambling problems' and 'Moderate gambling problems' in particular, there is a lower proportion of young people compared to adults. Around 3.3% of children and young people have a low level of gambling problems, compared to around 6.5% of adults. Similarly, around 2% of children and young people have moderate gambling

¹³ Currie, Casey & Hodgins, 2010.

¹⁴ The Danish Centre for Social Science Research, 2008.

problems, compared to around 3.6% of adults. For both the 'Low level of gambling problems' and 'Moderate gambling problems' categories, the incidence is significantly lower among children and young people compared to adults.

For the category of people with serious gambling problems, there are equal proportions of young people and adults. Among children and young people, 0.6% have serious gambling problems, while for adults this is around 0.7%, but this small difference lies within the statistical uncertainty margin, and the difference is thereby not significant. Among children and young people aged 12-17, 0.6% have serious gambling problems, equivalent to around 2,600 people.

Table 5-2. Prevalence of gambling problems among young people in Denmark (12 to 17-year-olds) in 2021

	Children and young people	Adults
Low level of gambling problems (PGSI 1-2)	3.32% (2.48 – 4.18)	6.51% (5.74 – 7.3)
Moderate level of gambling problems (PGSI 3-7)	2.01% (1.34 – 2.68)	3.66% (3.06 – 4.25)
Serious gambling problems (PGSI 8+)	0.64% (0.26 – 1.02)	0.67% (0.41 – 0.93)
In total gambling problems (PGSI +1)	5.99% (4.87 – 7.11)	10.85% (9.87 – 11.83)

Note: 95% confidence interval in parentheses. N= 3,844 for adults. N=1,709 for young people. Weighted data. Significant differences between young people and adults are marked by *.

Previous Danish surveys of the incidence of gambling problems among young people did not use the PGSI tool to assess the incidence. It is therefore not possible to assess whether there has been an increase or decrease in the incidence of gambling problems among children and young people.

The most recent survey of gambling problems among children and young people is from 2008¹⁵ and uses a revised version of the NODS tool to assess the incidence of gambling problems. The survey also considers 12 to 17-year-olds and finds that 0.1% of children and young people have obvious gambling problems, and 0.4% have possible gambling problems.

5.3 Gambling addiction in the Nordic region – status and development compared to Denmark

The Nordic countries have liberalised the gambling market to varying degrees. While the Danish gambling market was liberalised back in 2012, the Swedish market was not liberalised until 2019, and in Norway there is still a state monopoly on the provision of gambling. Comparison of the prevalence of gambling problems in the Nordic countries also reveals clear differences. Overall, the comparison with the Nordic countries indicates that Norway has a significantly higher proportion of people with gambling problems compared to Denmark, while Sweden, on the other hand, has a significantly lower proportion of people with gambling problems. Sweden stands out from Denmark and Norway in particular in terms of the proportion of people with a low level of gambling problems and people with moderate gambling problems. While in Denmark and Norway, 6.5% and 8.8%, respectively, of the adult population have a low level of gambling problems, this is only 3% in Sweden. Similarly, only

¹⁵ The Danish Centre for Social Science Research, 2008.

0.8% of the adult Swedish population have moderate gambling problems, while this is the case for 3.7% in Denmark and 3.1% in Norway. Sweden thus has significantly fewer adults with moderate gambling problems, compared to Norway and Denmark.

Considering the proportion of people with serious gambling problems, there is no significant difference between Denmark and Sweden, where 0.7% and 0.5%, respectively, of the adult population have serious gambling problems. Once again, Norway stands out with around twice as high a proportion of the adult population with serious gambling problems, and Norway thereby has significantly more people with serious gambling problems, compared to Denmark.

On comparing the Nordic countries, it is worth noting that the Norwegian survey was conducted two years earlier than the surveys in Denmark and Sweden. Furthermore, the surveys were not conducted for completely identical target groups, as Sweden included 16 to 84-year-olds, Norway 16 to 74-year-olds and Denmark 18 to 79-year-olds. There are also certain differences between the countries in terms of the data collection methods used, as shown in the table below the graph.

The aforementioned factors entail that comparison between the Nordic countries is subject to certain reservations.

Table 5-3. Gambling problems in the Nordic region compiled for the adult population

	Denmark	Sweden	Norway
	2021	2021	2019
Low level of gambling problems (PGSI 1-2)	6.5%	3.0% *	8.8% *
Moderate level of gambling problems (PGSI 3-7)	3.7%	0.8% *	3.1%
Serious gambling problems (PGSI 8+)	0.7%	0.5%	1.4% *
In total gambling problems (PGSI +1)	10.9%	4.3% *	13.3% *

Note: Significant differences between Denmark on the one hand and Sweden and Norway on the other for the individual categories of gambling problems are marked with *.

Table 5-4. Gambling problems in the Nordic region compiled for the adult population

	Denmark	Sweden	Norway
Population	18 to 79-year-olds	16 to 84-year-olds	16 to 74-year-olds
Data collection method	Online, phone and letter	Online and letter	Online* and letter
Response rate	38.6%	28.5 %	32.7%
Number of respondents	3,861	7,343	9,248

Note: *Norway sent out printed letters with information on how to respond online. Letters with questionnaire forms were then sent out. Swedish data from the Public Health Agency of Sweden, 2022. Norwegian data from Pallesen et al., 2020.

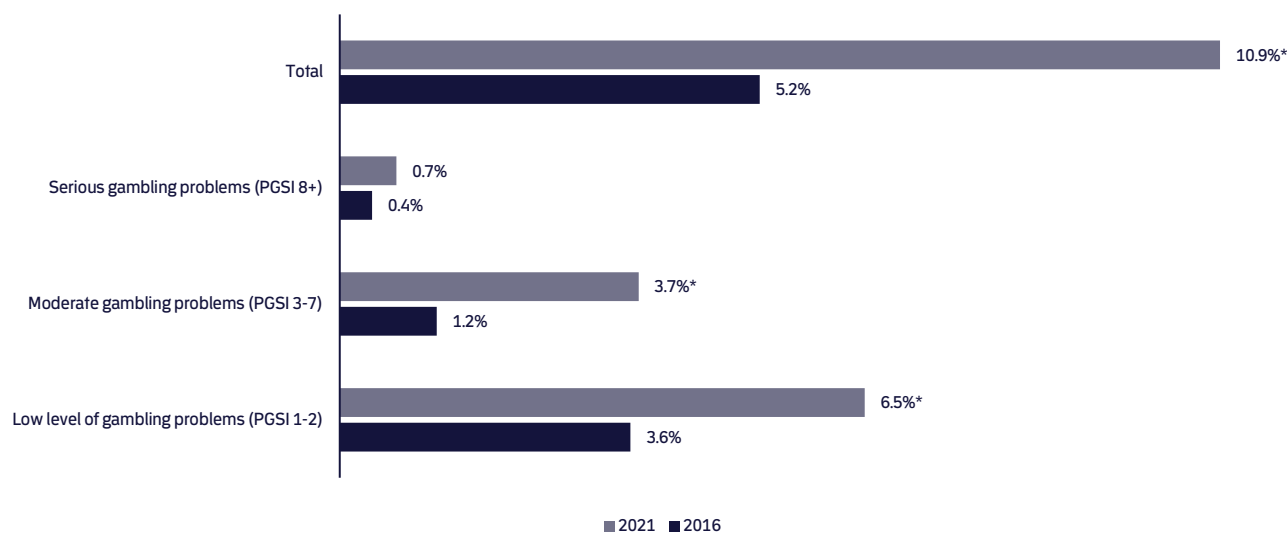
5.3.1 Development in the prevalence of gambling problems in the Nordic region

Chart 5-5 shows the development in the prevalence of gambling problems in Sweden, Norway and Denmark. It should be noted that the respective countries' surveys were not conducted in the same years, as the chart shows. In general terms, the proportion of people with gambling problems in both Denmark and Norway has increased. In Denmark, the proportion of the population with at least a low level of gambling problems increased from 5.2% to 10.9% in the period from 2016 to 2021, and this increase is significant. In Norway, the same proportion increased from 10.9% to 13.3% from 2015 to 2019, and this increase is also significant.

In Sweden, during the period from 2015 to 2021 there was a significant decrease from 5.8% to 4.3% in the proportion of the population with at least a low level of gambling problems.

Denmark has thus experienced the largest relative increase compared to Norway and Sweden. However, Norway still has the largest proportion of people with gambling problems in the Nordic region. The 2006 survey revealed that the prevalence of gambling problems in Denmark was lower than in Sweden and Norway¹⁶. In the 2016 survey, Norway still had the largest proportion, while the figures for Denmark and Sweden had converged¹⁷. In 2021, however, Denmark clearly overtook Sweden in terms of the proportion of the population with at least a low level of gambling problems.

Figure 5-3. Gambling problems in Denmark compiled for the adult population

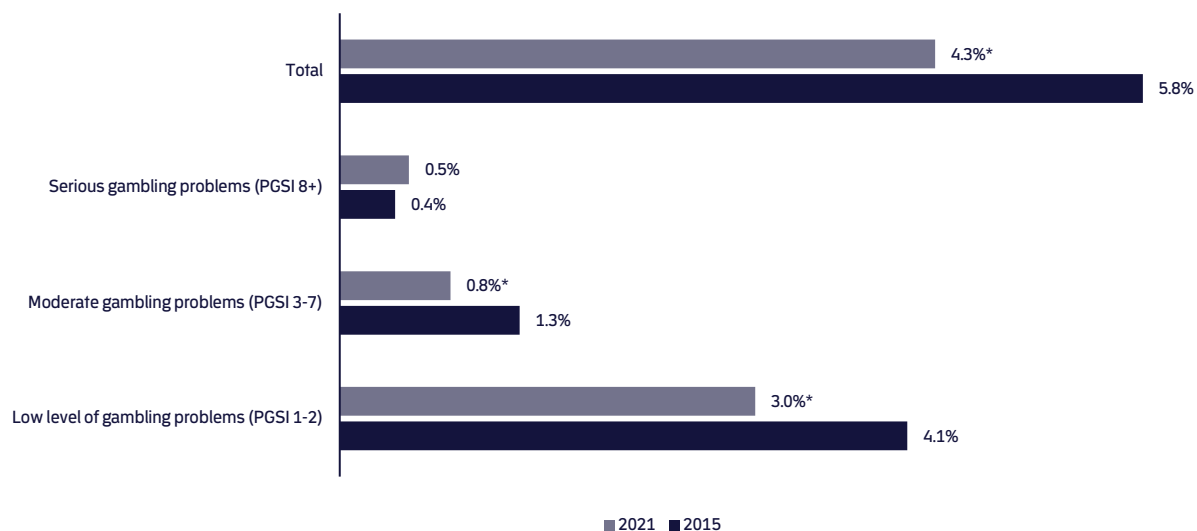


Note: Denmark 2016, N=6,180, 2021, N=3,844. Significant differences in a country's development for a given group of gambling addicts are marked with *.

¹⁶ Bonke & Borregaard, 2006.

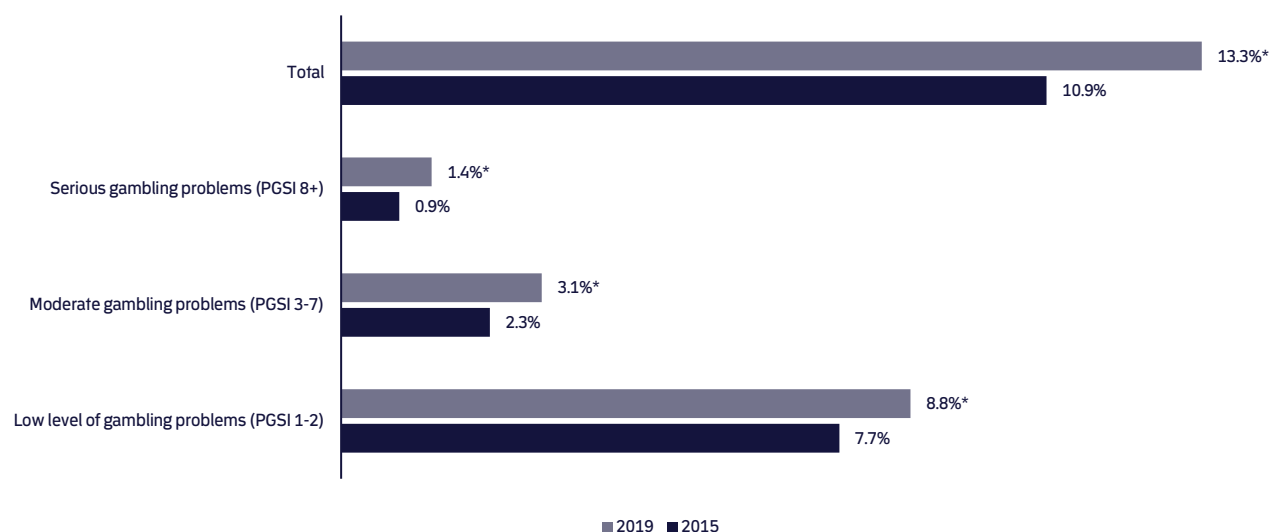
¹⁷ Fridberg & Jesper, 2016.

Figure 5-3. Gambling problems in Sweden compiled for the adult population



Note: Sweden 2015, N= 9,420, 2021, N=7,343. Significant differences in a country's development for a given group of gambling addicts are marked with *.

Figure 5-4. Gambling problems in Norway compiled for the adult population



Note: Norway 2015, N=5,450, 2019 N=9,248. Significant differences in a country's development for a given group of gambling addicts are marked with *.

5.4 Sub-conclusion

Based on the chapter's analyses, it can be inferred that 10.9% of adult Danes have at least a low level of gambling problems, which is a doubling since 2016. An increase can be noted in particular for the proportion of adult Danes with a low level of gambling problems and moderate gambling problems. There is no significant increase in the proportion of adults with serious gambling problems.

For children and young people, the proportion with at least a low level of gambling problems is 6%, which is significantly lower than the prevalence among adults. It is not possible to compare the development in the prevalence of gambling problems among children and young people over time.

Finally, the chapter shows that the prevalence of gambling problems in Denmark is statistically significantly greater than in Sweden and substantially lower than in Norway.

**Who has problems with
gambling addiction?**

6

This chapter analyses which elements of the population have problems with gambling addiction. The chapter is divided into four sections. The first two sections examine background characteristics and gambling behaviour among adult Danes (18 to 79-year-olds) and young people (12 to 17-year-olds) who have gambling problems. The sections specifically illustrate how these groups differ from people who do not have gambling problems. The third section of the chapter presents the underlying mechanisms that are of significance to the problematic nature of the gambling that takes place. The final section presents the impact of gambling ads and commercials on people with and without gambling problems.

The PGSI screening tool is used to investigate who has a problematic gambling behaviour. As previously described, the PGSI tool distinguishes between 1) a low level of gambling problems, 2) moderate gambling problems and 3) serious gambling problems. In the following analyses, however, the 'Moderate gambling problems' and 'Serious gambling problems' categories have been condensed into the collective term of gambling problems. This is because the proportion with serious gambling problems is small, so that without condensation it would be difficult to identify differences between the respondent groups.

The chapter is based on the full range of data sources, i.e., survey data, qualitative interviews, a survey experiment and physical tests, see the description in Chapter 2. The individual data sources are elaborated for each subsection. It should be noted that both the background characteristics and the nature of gambling behaviour are based on self-reported data. For this reason, adult Danes' reported spending on gambling, for example, does not match the register-based calculations undertaken by the Danish Gambling Authority.

6.1 Adults with gambling problems

This section examines what characterises adults who have problems with gambling addiction. The section compares adults with and without gambling problems so as to identify what differentiates the groups from each other. In the first instance, differences in demographic and socioeconomic characteristics are highlighted. Then differences in self-assessed health and consumption of intoxicants are stated.

Some of the demographic and socioeconomic characteristics are correlated with each other. For example, it will typically be the case that young people have both lower incomes and higher alcohol consumption. The description of the demographic and socioeconomic characteristics therefore concludes with a description of the results of regression analyses in which the significance of the individual demographic and socioeconomic characteristics to the probability of gambling problems is estimated.

The subsection concludes with descriptions of differences in age on first gambling and gambling behaviour between people with and without gambling problems.

The subsection solely reports statistically significant findings. Appendix 6 presents a comprehensive list of tables with comparisons between adults with gambling problems and adults without gambling problems. The section is based on survey data. The box below states the main findings of the subsection.

MAIN FINDINGS: ADULTS WITH GAMBLING PROBLEMS

- Demographic and socioeconomic characteristics: People with gambling problems differ from the rest of the population in that they are more likely to 1) be men, 2) be younger (overrepresentation in the 18-24 and 25-39 age categories), 3) have a lower level of education and (4) be single. Data also shows that people with gambling problems are more likely to have family members who also have or have had gambling problems.

- Health, consumption of intoxicants and crime: People with gambling problems typically assess their physical and mental health to be poorer, compared to people who do not have gambling problems. They have a higher consumption of intoxicants (alcohol and drugs) compared to people without gambling problems. There is also a higher incidence of crime among people with gambling problems.
- Regression model: On estimating a model of the probability of gambling problems, with simultaneous adjustment for demographic and socioeconomic characteristics, it can be seen that the probability of gambling problems is higher for 1) men, 2) younger people (18 to 24-year-olds and 25 to 39-year-olds), 3) people in work, 4) people in poor physical health and 5) people with higher alcohol consumption.
- Age on first gambling: There is no difference in the respondents' age on first gambling. Adults with gambling problems are most likely to begin with physical and online betting, while for adults without gambling problems this is more likely to be lotteries/scratch cards purchased from a physical retailer. Adults with gambling problems have typically been introduced to gambling by a friend and are more likely to have a social circle that engages in gambling.
- Gambling behaviour: 95% of adults with gambling problems and 41% without gambling problems have gambled within the last year. The preferred type of gambling is online betting and online casinos. The majority gamble via their mobile phone or tablet and use a licensed gambling operator. Compared to adults without gambling problems, adults with gambling problems spend more time and money on gambling. Adults both with and without gambling problems typically gamble alone.

6.1.1 Demographic and socioeconomic characteristics

The table below states the demographic and socioeconomic characteristics of adults with gambling problems, as well as adults without gambling problems.

Table 6-1. Demographic and socioeconomic characteristics of adults with and without gambling problems

	No gambling problems (N=3,427)	Low level of gambling problems (N=251)	Gambling problems (N=166)
Gender (N=3,844)			
Woman	51%	27%*	23%*
Man	49%	73%*	77%*
Age (N=3,844)			
18-24 years	10%	22%*	22%*
25-39 years	24%	33%*	38%*
40-59 years	36%	32%	31%
60-79 years	30%	14%*	9%*
Education (N=3844)			
I have not completed any education	1%	2%	2%
Lower secondary school leaving certificate	21%	22%	35%*
Vocational training	31%	33%	29%
Upper secondary school	10%	16%*	12%
Short-cycle higher education	5%	5%	4%
Medium-cycle higher education	19%	13%*	14%
Long-cycle higher education	11%	9%*	5%*
PhD research programme	1%	0%	0%
Income (N=3,567)			
0-119,999	14%	15%	9%
120,000-239,999	25%	26%	31%
240,000-359,999	23%	24%	16%
360,000-479,999	20%	20%	31%*
480,000-599,999	9%	7%	10%
600,000-719,999	4%	4%	2%
720,000 +	5%	4%	1%*
Civil status (N=3,747)			
Married	52%	38%*	30%*
Cohabiting	19%	24%	34%*
Single	21%	33%*	30%*
Divorced/widow/widower	9%	5%	6%
Family members who have/have had gambling problems (N=3,844)	6%	10%	29%

Note: The figures in the table are based on weighted figures. For civil status and income, the response categories 'Do not know' and 'Do not wish to state' are not included in the table. Significant differences between the 'no gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

The first aspect distinguishing adults with gambling problems from adults without gambling problems is that they are more likely to be men. Among adults with gambling problems, 77% are men. For comparison, men account for 49% of people without gambling problems. Similarly, there is an overrepresentation of people with gambling problems in the 18 to 24-year-old (22% compared to 10% in the group of adults without gambling problems) and 25 to 39-year-old (38% versus 24% in the group of adults without gambling problems) categories.

The groups also differ in terms of level of education. Data shows that there is an overrepresentation of adults with gambling problems whose highest completed course of education is lower secondary school (35% versus 21% in the group of adults without gambling problems). Similarly, a smaller proportion of adults with gambling problems have completed long-cycle higher education compared to the group of adults without gambling problems

(5% versus 11% in the group of adults without gambling problems). It can therefore be inferred that adults with gambling problems typically have a lower level of education than adults without gambling problems.

In addition to the above, the proportion earning more than DKK 720,000 per year is lower among people with gambling problems compared with people who do not have gambling problems.

Data also shows that a higher proportion of adults with gambling problems are single (30% versus 21% in the group of adults without gambling problems), just as fewer are married (30% versus 52% of people without gambling problems). Finally, data shows that people with gambling problems are more likely to have family members who have or have had gambling problems, compared to adults who do not have gambling problems (29% versus 6%).

6.1.2 Health, consumption of intoxicants and crime

The table below indicates differences in health, consumption of intoxicants and crime among adults with and without gambling problems.

Table 6-2. Health, consumption of intoxicants and crime among adults with and without gambling problems

	No gambling problems (N=3,427)	Low level of gambling problems (N=251)	Gambling problems (N=166)
Physical health (N=3,844)			
Very good/good	78%	72%	64%*
Fair	18%	21%	24%
Poor/very poor	4%	7%	12%*
Mental health (N=3,844)			
Very good/good	84%	73%*	65%*
Fair	12%	21%*	22%*
Poor/very poor	4%	6%	13%*
Crime (N=3,830)			
Crime within the last year	0.5%	0.0%	3.1%*
Alcohol (N=3,809)			
0 units, do not drink alcohol	14%	12%	10%
0 units, do drink alcohol	26%	22%	15%*
1-7 units	44%	46%	42%
8-14 units	11%	9%	18%
15-21 units	4%	7%	16%*
+22 units	1%	4%*	0%
Drugs (N=3,825)			
Have taken drugs within the last month	2.3%	5.7%*	11.5%*

Note: The figures in the table are based on weighted figures. For questions relating to crime, alcohol and drugs, the response categories 'Do not know' and 'Do not wish to state' are not included in the table. Significant differences between the 'No gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

As the table shows, there are differences in the health status of adults with and without gambling problems. More specifically, adults with gambling problems assess both their physical and mental health to be poorer, compared to people who do not have gambling problems. For example, 12 and 13%, respectively, of people with gambling problems state

that their physical and mental health is poor/very poor, while this only applies to 4% of people who do not have gambling problems.

Data also shows that adults with gambling problems have a higher consumption of intoxicants (alcohol as well as drugs) compared to people who do not have gambling problems. For example, 34% of adults who have gambling problems drink more than eight units of alcohol a week, while this is only the case for 16% of adults who do not have gambling problems.

Finally, there is a higher incidence of crime among adults with gambling problems. Thus, 3% of adults who have gambling problems and 0.5% of adults who do not have gambling problems indicate that they have committed crime(s) within the past year.

6.1.3 Regression analysis of the probability of having gambling problems

As some of the demographic and socioeconomic characteristics are correlated with each other, a regression analysis was performed in which the significance of the individual characteristics to the probability of gambling problems is estimated. The regression analysis is adjusted for gender, age, civil status, education, labour market affiliation, income, physical health, mental health, alcohol consumption, drug consumption and crime. The regression analysis shows that the probability of having gambling problems (adjusted for the aforementioned factors) is higher for 1) men, 2) younger people (18 to 24-year-olds and 25 to 39-year-olds), 3) people in work, 4) people in poor physical health and 5) people with higher alcohol consumption (8-14 units or 15-21 units a week). It can thereby be derived from the regression analysis that higher alcohol consumption among people with gambling problems cannot be explained solely by the fact that gambling problems are more prevalent among young people, who typically also have a high alcohol consumption. The regression analysis is adjusted for age, so that alcohol consumption has an independent correlation with the probability of gambling problems. The overall regression analysis is presented in Appendix 6.

6.1.4 Age on first gambling

The table below indicates differences in age on first gambling among adults with and without gambling problems.

Table 6-3. Age on first gambling of adults with and without gambling problems

	No gambling problems (N=3,427)	Low level of gambling problems (N=251)	Gambling problems (N=166)
Age when gambling for the first time (N=1,065)			
<i>Only people who have stated an age at which they first gambled</i>			
0-8 years	1%	0%	0%
9-14 years	17%	20%	21%
15-17 years	19%	22%	20%
18-24 years	37%	40%	42%
24-39 years	17%	12%	14%
40-59 years	6%	3%	2%
60-79 years	2%	2%	0%

Type of gambling when gambling for the first time (N=1,064)

Only people who have stated an age at which they first gambled

Online betting	6%	19%*	21%*
Betting at a physical retailer, such as a newsagent's or supermarket (including betting on horse racing at a racecourse)	15%	27%*	26%*
Online casinos (including online bingo and online slot machines)	2%	2%	7%*
Physical casinos (including physical slot machines at the casino)	4%	4%	2%
Physical slot machines in a restaurant, bar or gambling arcade	6%	11%	9%
Online poker	2%	2%	0%
Poker at a physical location (such as a physical casino or poker club)	2%	4%	1%
Online lotteries (including scratch cards)	6%	7%	7%
Lotteries (including scratch cards) at a physical retailer (for example a newsagent's or supermarket) or bingo at a physical location	41%	11%*	12%*
Other, please state:	13%	11%	14%
Do not know	3%	1%	0%

Introduced to gambling (N=1,064)

Only people who have stated an age at which they first gambled

A family member	33%	20%*	24%
A friend	26%	51%*	42%*
A colleague	3%	3%	5%
An influencer	0%	2%	4%*
Media/ads/commercials	14%	10%	13%
Other	5%	4%	5%
Do not know	19%	10%	8%

Gambling among friends and family members (N=3,844)

Friends	13%	27%*	31%*
Family members	14%	7%*	6%*
Both friends and family members	17%	33%*	44%*
Neither friends nor family members	26%	15%*	5%*
Do not know	30%	19%*	15%*

Note: The figures in the table are based on weighted data. Significant differences between the 'No gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

As the table shows, there are no significant differences in the respondent groups' age on first gambling. Common to adults both with and without gambling problems is that the majority started gambling when they were aged between 18 and 24. Adults without gambling problems typically begin with lotteries/scratch cards purchased from a physical retailer, while for adults with gambling problems this is more likely to be physical and online betting.

Data also shows that adults with gambling problems are most likely to have been introduced to gambling by a friend (42%), while adults without gambling problems have typically been introduced to gambling by a family member (33%).

People with gambling problems are more likely to have a social circle that engages in gambling, compared to people without gambling problems. 44% and 31%, respectively, of adults

with gambling problems thus have family members and/or friends who gamble. For comparison, 17% and 13%, respectively, of adults without gambling problems have family members and/or friends who gamble.

6.1.5 Gambling behaviour

The table below indicates differences in gambling behaviour among adults with and without gambling problems.

Table 6-4. Gambling behaviour among adults with and without gambling problems

	No gambling problems (N=3,427)	Low level of gambling problems (N=251)	Gambling problems (N=166)
Gambling during the past year (N=3,844)	41%	90%*	95%*
Type of gambling during the past year (N=3,844)			
Online betting	6%	41%*	45%*
Betting at a physical retailer, such as a newsagent's or supermarket (including betting on horse races at a racecourse)	2%	8%*	21%*
Online casinos (including online bingo and online slot machines)	2%	17%*	49%*
Physical casinos (including physical slot machines at the casino)	1%	4%*	12%*
Physical slot machines in a restaurant, bar or gambling arcade	1%	7%*	13%*
Online poker	1%	6%*	19%*
Poker at a physical location (such as a physical casino or poker club)	0%	3%*	8%*
Online lotteries (including scratch cards)	9%	25%*	25%*
Lotteries (including scratch cards) at a physical retailer (for example a newsagent's or supermarket) or bingo at a physical location	20%	31%*	24%
Other	9%	13%	5%
Device used for online gambling (N=689)			
<i>Only people who have gambled online during the past year</i>			
Computer	27.2%	27.3%	30.0%
Mobile/tablet	63.9%	65.3%	57.3%
Use a computer and mobile/tablet equally often	8.9%	7.5%	12.7%
Location for physical gambling (N=829)			
<i>Only people who have gambled online during the past year</i>			
Newsagent's/petrol station/supermarket	93.3%	86.9%	55.6%
Casino	2.4%	5.2%	17.6%*
Gambling hall (arcade)	0.3%	0.0%	7.4%*
Pub or restaurant	1.6%	7.9%	12.7%*
Community centre	1.3%	0.0%	3.2%
Racecourse	1.2%	0.0%	3.6%
Time spent on gambling (N=902)			
<i>Only people who have spent money on gambling during the past month</i>			

0-1 hours	92%	78%*	49%*
1-7 hours	2%	14%*	33%*
8-14 hours	0%	2%	10%*
15-21 hours	0%	1%	6%*
22-28 hours	0%	0%	0%
29-35 hours	0%	0%	2%
More than 35+ hours	0%	0%	0%
Do not know	5%	4%	0%
Gamble alone or together with others? (N=902)			
<i>Only people who have spent money on gambling during the past month</i>			
Yes, I primarily gamble together with friends	7%	17%*	28%*
Yes, I primarily gamble together with family members	9%	7%	1%*
Yes, I am part of a gambling club that I primarily gamble with	1%	2%	2%
Yes, I primarily gamble with others who are not described above; please specify	1%	0%	0%
No, I primarily gamble alone	81%	73%	69%
Money spent on gambling during the past month (N=901)			
<i>Only people who have spent money on gambling during the past month</i>			
Average amount	DKK 304	DKK 943*	DKK 3,096*
Median	200	200	500
Winnings/losses on gambling during the past month (N=821)			
<i>Only people who have spent money on gambling during the past month</i>			
Average amount	-DKK 85	DKK 448	DKK 2,154*
Median	-100	-93	-150
Knowledge of licensing of operators (N=1,020)			
<i>Only persons who have gambled online during the past year</i>			
	68%	76%	73%
Yes, the companies I have used <u>are licensed</u> to offer gambling			
Yes, the companies I have used <u>are not licensed</u> to offer gambling	0%	0%	3%*
Yes, I use companies that are licensed to offer gambling, and companies that are not	1%	1%	5%
No, I do not know	31%	23%	19%*

Note: The figures in the table are based on weighted data. For type of gambling during the past year, the 'Do not know' response category is not included in the table. Significant differences between the 'No gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

In total, 46% have gambled within the last year. However, comparison of the figure with the PGSI score shows that 95% of the adults with gambling problems and 41% of the adults without gambling problems have gambled within the last year.

The preferred types of gambling among adults with gambling problems are online betting and online casinos. Around half (45% and 49%, respectively) have engaged in one of the aforementioned types of gambling within the last year. However, data shows that adults

with gambling problems are more likely to engage in all types of gambling, compared to adults without gambling problems (except for scratch cards purchased from a physical retailer, which is the preferred type of gambling among adults without gambling problems).

In the same way, physical gambling is most likely to take place in a newsagent's, at a petrol tank or in a supermarket (56% for adults with gambling problems and 93% for adults without gambling problems).

However, adults with gambling problems are more likely to also use casinos, gambling arcades and pubs when they engage in physical gambling.

The majority of adults with and without gambling problems use a gambling operator licensed by the Danish Gambling Authority. However, a smaller proportion of adults with gambling problems indicate that they also use unlicensed operators (5% use both licensed and unlicensed operators, while 3% only use operators that are not officially licensed to provide gambling).

Unsurprisingly, adults with gambling problems spend more time on gambling per week compared to people who do not have gambling problems. A third of adults who have gambling problems spend between one and seven hours a week on gambling, while 18% spend more than seven hours a week. For comparison, between 1 and 2% of adults without gambling problems spend one to seven hours a week or more. However, people with and without gambling problems share in common that they are most likely to gamble alone.

Data also shows that adults with gambling problems spend more per month on gambling than people who do not have gambling problems. People with gambling problems have on average staked around DKK 3,000 on gambling during the past month, while adults without gambling problems have on average staked around DKK 300 on gambling during the past month.

In the questionnaire, respondents indicated both their gambling stakes and winnings during the past month. The difference between stakes and winnings indicates overall gambling winnings/losses. Among people with gambling problems, the average overall winnings during the past month are around DKK 2,100. However, the average conceals great variation and in terms of the median winnings, the respondents have a loss of DKK 150. People without gambling problems have an average loss of DKK 85 per month. Comparing these figures with the actual figures from the Danish Gambling Authority's registers indicates that people in Denmark do not have a realistic picture of their own gambling winnings/losses. The Danish Gambling Authority's figures for the gambling industry's gross gaming revenue show that in 2020, every adult Dane had an average loss of DKK 1,973 for the full year, corresponding to around DKK 164 per month¹⁸. This is calculated for all adults, irrespective of whether they actually gamble.

6.2 Children and young people with gambling problems

Even though the age limit for most types of gambling is 18, the survey's quantitative material indicates that many children and young people (12 to 17-year-olds) have gambling problems. This section examines what characterises children and young people who have gambling problems. The section adheres to the same structure as the previous section 'Adults with gambling problems'. This means that the section initially presents differences in the demographic and socioeconomic characteristics of children and young people, depending on whether they are children and young people with or without gambling problems, after which their health and consumption of intoxicants are investigated.

¹⁸ Compiled in 2020 prices for Danes aged over 18.

The description of the demographic and socioeconomic characteristics concludes with a presentation of the results of regression analyses, where the significance of the individual demographic and socioeconomic characteristics for the probability of gambling problems is estimated.

The subsection concludes with descriptions of differences in age on first gambling and gambling behaviour of children and young people with and without gambling problems.

The subsection solely reports statistically significant findings. Appendix 6 presents a comprehensive list of tables with comparisons between children and young people with gambling problems and children and young people without gambling problems. The section is based on survey data. The box below states the main findings of the subsection.

MAIN FINDINGS: CHILDREN AND YOUNG PEOPLE WITH GAMBLING PROBLEMS

- **Demographic and socioeconomic characteristics:** Children and young people with gambling problems differ from children and young people without gambling problems in that they are more likely to 1) be boys, 2) live alone, 3) not be in employment, 4) have parents with no labour market affiliation, 5) earn more money from after-school jobs and 6) receive more pocket money. Data also shows that children and young people with gambling problems are more likely to have family members who also have or have had problems with gambling.
- **Health, consumption of intoxicants and crime:** Children and young people with gambling problems typically assess their physical health to be poorer, compared to children and young people who do not have gambling problems. They have a higher consumption of intoxicants (alcohol and drugs) compared to children and young people without gambling problems. However, no differences are seen in the incidence of crime.
- **Regression model:** On estimating a model of the probability of having gambling problems, with simultaneous adjustment for demographic and socioeconomic characteristics, it can be seen that the probability of gambling problems is greater for boys, while none of the other demographic and socioeconomic characteristics are of independent significance.
- **Age on first gambling:** There is no difference in the respondents' age on first gambling. Children and young people with gambling problems usually begin with online betting, while for children and young people without gambling problems this is more likely to be lottery tickets, such as scratch cards, purchased from a physical retailer. Children and young people with gambling problems have typically been introduced to gambling by a friend and are more likely to have a social circle that engages in gambling.
- **Gambling behaviour:** 84% of children and young people with gambling problems and 14% of children and young people without gambling problems have gambled within the last year. Among children and young people with gambling problems, the preferred type of gambling is online betting and online casinos, while for children and young people without gambling problems, it is lottery tickets (such as scratch cards) purchased from a physical retailer. Children and young people with and without gambling problems have limited knowledge of whether the gambling operator is licensed. The respondent groups share in common that the physical gambling often takes place at a newsagent's or petrol station, or in a supermarket. The groups differ, however, in that children and young people with gambling

problems are more likely to gamble in pubs/restaurants. Similarly, children and young people with gambling problems spend more time and money on gambling.

There are thus a number of common trends for children/young people and adults who have gambling problems. However, children and young people differ from the adult population with gambling problems in terms of the following parameters: 1) They do not assess their mental health to be poorer, and 2) they are not more likely to have committed a crime.

6.2.1 Demographic and socioeconomic characteristics

The table below illustrates demographic and socioeconomic characteristics of children and young people with and without gambling problems.

Table 6-5. Demographic and socioeconomic characteristics of children and young people with and without gambling problems

	No gambling problems (N=1,607)	Low level of gambling problems (N=57)	Gambling problems problems (N=45)
Gender (N=1,705)			
Girl	52%	22%*	13%*
Boy	48%	78%*	87%*
Age (N=1,709)			
12-14 years	50%	32%*	37%
15-17 years	50%	68%*	63%
Who does the young person live with? (N=1,705)			
Both my parents	74%	65%	71%
One of my parents	26%	33%	23%
A guardian who is not my parent	0%	0%	0%
I live alone	1%	2%	7%*
Which of the young person's parents has a job? (N=1,705)			
Both my parents	86%	79%	78%
One of my parents	13%	16%	16%
None of my parents	1%	5%*	7%*
Family members who have/have had gambling problems (N=1,709)	3%	7%	11%*
The young person's occupation (1705)			
Lower secondary school	64%	48%*	40%*
10th grade/residential school	8%	15%	14%
Vocational training (technical/agricultural/mercantile vocational training)	4%	3%	7%
Upper secondary school (STX, HTX, HHX, HF)	21%	30%	33%
Full-time work	1%	0%	0%
Part-time work	0%	0%	2%
No occupation	1%	3%	4%*
Have an after-school job (N=1,659)	40%	55%*	42%

Monthly income from after-school job (N=679)*Only young people who have an after-school job*

DKK 0-500	26%	20%	6%
DKK 501-1,000	19%	16%	6%
DKK 1,001-2,000	22%	19%	11%
DKK 2,001-3,000	18%	29%	44%*
DKK 3,001-4,000	7%	10%	6%
DKK 4,001-5,000	4%	3%	6%
More than DKK 5,000	4%	3%	22%*

Gets pocket money (N=1,705)

63%	64%	60%
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How much pocket money per month (N=1,074)*Only young people who get pocket money*

DKK 0-100	19%	14%	8%
DKK 101-300	45%	38%	52%
DKK 301-500	21%	22%	15%
DKK 501-1,000	12%	21%	11%
More than DKK 1,000	3%	5%	15%*

Note: The figures in the table are based on weighted data. For parents in work, the 'Do not know' response category is not included in the table. Significant differences between the 'No gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

The table shows several variations between young people who have gambling problems and young people who do not have gambling problems. For example, it can be seen that boys are overrepresented among young people with gambling problems. This means that 87% of young people with gambling problems are boys. It also means that more boys than girls have gambling problems.

Most of the children and young people with gambling problems are aged 15-17 (63%) and live with their parents (73%). Even though most of them live with their parents, 7% state that they live alone. This differs from children and young people who do not have gambling problems, of whom only 1% state that they live alone. Data also shows that many children and young people with gambling problems have parents who are not in work.

Children and young people with gambling problems are also more likely to have parents who have also had/have experience with gambling problems (11% of children and young people with gambling problems and 3% of children and young people without gambling problems have parents who have also had gambling problems).

Further differences can be observed between the young people's employment and education status. For example, 4% of children and young people with gambling problems are not affiliated with either education or employment, while this only applies to 1% of the children and young people who do not have gambling problems.

However, children and young people with gambling problems earn more money from their after-school jobs than children and young people who do not have gambling problems. The majority of the children and young people with gambling problems (77%) earn more than DKK 2,000 a month from their after-school jobs, while this only applies to a third of the children and young people who do not have gambling problems.

Data also shows that children and young people with gambling problems receive more money per month than children and young people who do not have gambling problems. 15% of the children and young people with gambling problems receive more than DKK 1,000 a month in pocket money, while the same applies to 3% of children and young people without gambling problems.

6.2.2 Health, consumption of intoxicants and crime

The table below shows differences in health, consumption of intoxicants and crime among children and young people with and without gambling problems.

Table 6-6. Health, consumption of intoxicants and crime among children and young people with and without gambling problems

	No gambling problems (N=1,607)	Low level of gambling problems (N=57)	Gambling problems (N=45)
Physical health (N=1,709)			
Very good/good	91%	86%	83%
Fair	8%	14%	9%
Poor/very poor	1%	0%	9%*
Mental health (N=1,709)			
Very good/good	85%	81%	87%
Fair	12%	12%	8%
Poor/very poor	3%	7%	4%
Crime within the last year (N=1,700)	1%	11%*	4%
Have drunk alcohol (N=1,705)	60%	87%*	67%
Alcohol (N=1,030)			
<i>Only young people who have indicated that they have drunk alcohol</i>			
0 units, do not drink alcohol	23%	15%	17%
0 units, do drink alcohol	38%	32%	27%
1-7 units	27%	20%	20%
8-14 units	8%	24%*	16%
15-21 units	2%	8%*	10%*
+22 units	1%	2%	10%*
Have taken drugs within the last year (N=1,699)	1%	3%	10%*

Note: The figures in the table are based on weighted data. For crime and alcohol, the response category 'Do not wish to state' is not included in the table. Significant differences between the 'no gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

The table shows that there are differences in the groups' self-assessed physical health. Children and young people with gambling problems thus assess their physical health to be poorer compared to children and young people without gambling problems. However, the groups do not differ in terms of the assessment of their own mental health.

Children and young people with gambling problems on average have a higher consumption of intoxicants (alcohol as well as drugs) compared to children and young people without gambling problems.

6.2.3 Regression analysis of the probability of having gambling problems

As some of the demographic and socioeconomic characteristics are correlated with each other, a regression analysis was performed in which the significance of the individual characteristics to the probability of gambling problems is estimated. In the regression analysis, there is adjustment for gender, age, who the young person lives with, the young person's parents' affiliation to the labour market, the young person's employment, whether the young person has an after-school job and whether the young person receives pocket money, as

well as physical health, mental health, and whether the young person has drunk alcohol, taken drugs or committed crime.

The regression analysis shows that the probability of having gambling problems (adjusted for the aforementioned factors) is higher for boys. None of the other factors are of independent significance to the probability of gambling problems in the regression analysis. The overall regression analysis is presented in Appendix 6.

6.2.4 Age on first gambling

The table below illustrates differences in age on first gambling among children and young people with and without gambling problems.

Table 6-7. Age on first gambling of children and young people with and without gambling problems

	No gambling problems (N=1,607)	Low level of gambling problems (N=57)	Gambling problems (N=45)
Age when gambling for the first time (N=174)			
<i>Only young people who have indicated an age at which they gambled for the first time</i>			
0-8	9%	6%	0%
9-14	65%	52%	66%
15-17 years	26%	42%	34%
Type of gambling when gambling for the first time (N=187)			
<i>Only young people who have indicated an age at which they gambled for the first time</i>			
Online betting	21%	31%	36%
Betting at a physical retailer, such as a newsagent's or supermarket (including betting on horse racing at a racecourse)	2%	0%	14%*
Online casinos (including online bingo and online slot machines)	5%	13%	7%
Physical casinos (including physical slot machines at the casino)	0%	3%	0%
Physical slot machines in a restaurant, bar or gambling arcade	3%	8%	0%
Online poker	0%	0%	11%
Poker at a physical location (such as a physical casino or poker club)	5%	5%	4%
Online lotteries (including scratch cards)	2%	3%	0%
Lotteries (including scratch cards) at a physical retailer (For example, a newsagent's or supermarket) or bingo at a physical location	35%	16%*	4%*
Other, please state:	21%	13%	16%
Who introduced the young person to gambling (N=187)			
<i>Only young people who have indicated the age at which they gambled for the first time</i>			
A family member	43%	35%	12%*

A friend	30%	39%	54%*
An influencer	2%	5%	7%
Media/ads/commercials	6%	13%	11%
Other	8%	0%	8%

Friends or family members who gamble (N=1,709)

Friends	9%	30%*	34%*
Family members	26%	21%	18%
Both friends and family members	11%	29%*	17%
Neither friends nor family members	33%	7%*	15%*

Note: The figures in the table are based on weighted data. Significant differences between the 'no gambling problems' category and the given category are marked with *. Concerning the question of age when they first gambled, 13 responses were discarded because the young person stated an age higher than the same person's current age. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories.

Common to children and young people both with and without gambling problems is that the majority started to gamble when they were aged between 9 and 14. The most frequent first type of gambling for children and young people with gambling problems is online betting, while for children and young people without gambling problems it is lottery tickets (such as scratch cards) purchased from a physical retailer.

There are differences in who introduced children and young people with and without gambling problems to gambling. Children and young people with gambling problems have typically been introduced to gambling by their friends (54%). On the other hand, children and young people who do not have gambling problems are most likely to have been introduced to gambling by family members (43%). The above pattern is closely repeated with regard to the respondent group's social circle.

Here, 34% of children and young people with gambling problems and 9% of children and young people without gambling problems state that their friends also gamble.

6.2.5 Gambling behaviour

The table below indicates differences in gambling behaviour among children and young people with and without gambling problems.

Table 6-8. Gambling behaviour among children and young people with and without gambling problems

	No gambling problems (N=1,607)	Low level of gambling problems (N=57)	Gambling problems (N=45)
Have gambled during the past year (N=1,709)	14%	84%*	84%*
Type of gambling during the past year (N=1,709)			
Online betting	2%	33%*	49%*
Betting at a physical retailer, such as a newsagent's or supermarket (including betting on horse races at a racecourse)	1%	6%*	11%*
Online casinos (including online bingo and online slot machines)	1%	19%*	19%*
Physical casinos (including physical slot machines at the casino)	0%	0%	0%
Physical slot machines in a restaurant, bar or gambling arcade	1%	9%*	9%*
Online poker	0%	10%*	17%*
Poker at a physical location (such as a physical casino or poker club)	1%	5%*	6%*
Online lotteries (including scratch cards)	0%	2%	13%*

Lotteries (including scratch cards) at a physical retailer (such as a newsagent's or supermarket) or bingo at a physical location	6%	16%*	11%
Other†	5%	29%*	20%*
I have not gambled during the past year	84%	12%*	7%*

Device used for online gambling (N=109)

Only people who have gambled online during the past year

Computer	39%	58%	67%*
Mobile/tablet	55%	29%*	27%*
Use a computer and mobile/tablet equally often	7%	13%	6%

Location for physical gambling (N=69)

Only people who have gambled at a physical location during the past year

Newsagent's/petrol station/supermarket	85%	73%	67%
Casino	2%	0%	0%
Gambling arcade	4%	13%	0%
Pub or restaurant	4%	0%	22%
Community centre	4%	0%	11%
Racecourse	2%	13%	0%

Time spent on gambling (N=67)

Only people who have spent money on gambling during the past month

0-1 hours	93%	77%	53%*
1-7 hours	4%	18%	29%*
8-14 hours	0%	0%	6%
15-21 hours	0%	0%	6%
22-28 hours	0%	0%	6%
29-35 hours	4%	5%	0%
More than 35+ hours	0%	0%	0%

Gamble alone or together with others? (N=67)

Only people who have spent money on gambling during the past month

Yes, I primarily gamble together with friends	49%	63%	64%
Yes, I primarily gamble together with family members	26%	5%	0%
Yes, I am part of a gambling club that I primarily gamble with	0%	0%	0%
Yes, I primarily gamble with others who are not described above, please specify	0%	5%	6%
No, I primarily gamble alone	25%	27%	30%

Gambling stakes during the past month (N=67)

Only people who have spent money on gambling during the past month

Average amount	DKK 184	DKK 190	DKK 809*
Median	100	100	500

Winnings/losses on gambling during the past month (N=67)

Only people who have spent money on gambling during the past month

Average amount	DKK 162	DKK 295	DKK 917
Median	0	0	-35

Knowledge of licensing of operators (N=197)

Only young people who have gambled online during the past year

	30%	42%	42%
Yes, the companies I have used <u>are licensed</u> to offer gambling			
Yes, the companies I have used <u>are not licensed</u> to offer gambling	1%	2%	3%
Yes, I use companies that are licensed to offer gambling, and companies that are not	1%	10%*	0%
No, I do not know	69%	46%*	55%

Note: The figures in the table are based on weighted data. For gambling during the past year, the response category 'Do not know' is not included in the table. Significant differences between the 'No gambling problems' category and the given category are marked with *. Gambling problems include the 'Moderate gambling problems' and 'Serious gambling problems' categories. In the second category, an open response could be given, and descriptions such as Christmas calendar scratch cards, poker at friends, Tivoli Gardens stalls, or that they have never engaged in gambling, are stated.

The table shows that 18% have gambled within the last year. Comparison of the figure with the PGSI score shows, however, that 84% of children and young people with gambling problems and 14% of the children and young people without gambling problems have gambled within the last year.

Children and young people with gambling problems are most likely to bet online (49%) or online casinos (17%), while children and young people without gambling problems are more likely to use physical lottery tickets (e.g., scratch cards) bought from a physical retailer (6%). Data shows, however, that children and young people with gambling problems are more inclined to engage in all types of gambling, compared to children and young people without gambling problems (except for scratch cards purchased from a physical retailer).

The majority of children and young people with gambling problems (67%) gamble online from a computer. Children and young people with gambling problems therefore differ in this respect from adults with gambling problems, who are more likely to use a mobile phone or tablet to gamble online. However, the children and young people in the survey have limited knowledge of whether operators are licensed. Around 60% who have gambled online during the past year state that they do not know whether the operators are licensed.

Children and young people with and without gambling problems share in common that physical gambling is most likely to take place at a newsagent's or petrol station, or in a supermarket (85% for children and young people without gambling problems and 67% for children and young people with gambling problems). However, the groups differ in that 22% of children and young people with gambling problems gamble physically at a pub or restaurant. This only applies to 4% of children and young people who do not have gambling problems.

The majority of children and young people with gambling problems (64%) gamble with their friends. This only applies to 49% of children and young people who do not have gambling problems. However, children and young people without gambling problems are more likely to gamble with their family members. Specifically, 26% of children and young people without gambling problems gamble with their family members. For comparison, no children and young people with gambling problems gamble with their family members.

Children and young people with gambling problems spend more time on gambling than children and young people who do not have gambling problems. 17% spend more than eight hours a week, but most (53%) spend one hour or less. Children and young people with

gambling problems have on average staked around DKK 800 on gambling during the past month, while children and young people without gambling problems have on average staked around DKK 184 on gambling during the past month.

6.3 What mechanisms contribute to problematic gambling behaviour?

Problematic gambling typically evolves over time. Many different circumstances in the individual's life can cause gambling to increase in extent and intensity. This section reveals the factors that lead to problematic gambling. The subsection is based on qualitative interviews with people with serious gambling problems. Appendix 1 describes the method behind this section.

The survey's qualitative empirical evidence indicates that the transition to the problematic gambling phase is gradual. It is thus only when the consequences of gambling are evident that the interviewees become aware of their inappropriate gambling behaviour. Even though the dividing line between the 'normal' and problematic gambling phases is often blurred, the interviewees describe a number of motives which may indicate the reasons that gambling can develop into an addiction. These motives are: 1) sense of self as an expert, 2) difficult conditions in everyday life and 3) changes in reasoning.

In the sections below, the motives are explained one by one.

6.3.1 Sense of self as an expert

The first motive is related to the interviewees' self-esteem and sense of self. The interviewees state that over time they acquire a belief that they can 'control' the outcome of their gambling as a consequence of their knowledge and/or experience. The reasoning is therefore that they win due to their knowledge and skill and not because of luck. These interviewees share in common that they have previous experience of winning big prizes. This gives them a conviction that they either have special abilities that enable them to 'beat' the game, and/or they have specialised knowledge and skills to predict the game. Sense of self as an expert specifically leads to the interviewees gambling more frequently and with higher stakes, as the gambling is perceived as less risky.

STATEMENTS BY INTERVIEWEES WITH SERIOUS GAMBLING PROBLEMS

“After I got to know the machine, I really thought I could figure out when it would pay off. I mean, when I should put in more money. This made me start to spend a lot more money”

– man, aged 39

“So, for the odds, you should be an expert when, like me, you've watched over 600 matches. You should be able to predict a little bit. So, to be honest, I thought I

could control the game in some way or other. I thought I could figure out exactly what was going to happen”

– man, aged 20

6.3.2 Difficult conditions in everyday life

The second motive relates to the interviewees' emotional and everyday lives. For several interviewees, gambling becomes more problematic as they experience increasingly difficult circumstances and negative emotions in their everyday lives (such as loneliness, stress at work or conflicts in their personal relationships).

The interviewees relate in more detail that they turn to gambling when they need 'a sanctuary' or 'to forget' difficult emotions. The interviewees use gambling to achieve a kind of euphoria and happiness that they cannot evoke in any other way. For the interviewees, gambling therefore develops into a kind of strategy to handle challenges in life. This also means that in some cases the interviewees' urge to gamble is not related to a specific type of gambling. Instead, the interviewees are deeply addicted to the function that gambling fulfils in their lives.

STATEMENTS BY INTERVIEWEES WITH SERIOUS GAMBLING PROBLEMS

“If my partner and I fell out, then I would gamble. I didn't really gamble on normal days. I gambled when I was sad or angry. It was like an easy way to get away from it all”

– man, aged 20

“When I'm lonely, feeling down or stressed, gambling is a good way of escaping from reality. You forget the 300 unread emails in your inbox. Gambling becomes my 'sanctuary' and a way for me to feel positive emotions”

– man, aged 58

“It wasn't the gambling that was important. Sometimes I gambled one way, and sometimes another. In a way, gambling was a good diversion from your thoughts. You could relax and get away from it all”

– man, aged 22

6.3.3 Change in reasoning

The last motive relates to the reasoning used by the interviewees to explain their gambling. The interviewees describe how initially gambling was for entertainment, excitement and the prospect of larger or smaller winnings. However, as the interviewees experience winning, there is a change in their motive for gambling. Gambling is not just considered a fun and entertaining leisure activity, but also a direct shortcut to a 'happy' and 'financially independent' life. For the interviewees, gambling therefore signifies 'the good life' – a life that they would not be able to achieve by other means. The dreams the interviewees associate with gambling therefore reinforce the urge to gamble and cause them to continue to gamble.

However, the interviewees' reasoning also means that gambling is increasingly perceived as the only rescue plan available, and also the only way they can win their money back.

STATEMENTS BY INTERVIEWEES WITH SERIOUS GAMBLING PROBLEMS

“I felt compelled to gamble. Just imagine if I won. That would change everything. Then I'd be able to get through the month and maybe even salvage my financial situation”

– man, aged 39

“My gambling was okay at first. I only gambled for small amounts and when I was enjoying some down time. When I watched the game with my mates, for example, I would bet on the matches. But then it all started to escalate. I had a lot of luck, and I had some good winnings. So, I got a taste for it – just imagine if you won a whole shedload of money. Just think of the life you could live. So, you can see that I was really hooked on winning”

– man, aged 30

6.4 Impact of ads and commercials

This section reveals whether ads and commercials affect people with and without gambling problems. Gambling addiction counsellors often name gambling ads and commercials as a factor that maintains or reinforces people's urge to gamble¹⁹.

Questions about gambling ads and commercials were included in the survey of the prevalence of gambling addiction in 2016. The report shows that 81% of respondents who gamble

¹⁹ Jørgel, M. (2003): Ludomani – ikke flere indsatser, tak! (Gambling addiction – no more bets, thanks).

indicate that they are not affected by gambling ads and commercials. However, it can be difficult to describe whether you are affected by ads and commercials or not. This survey therefore uses three methods to discover whether people with and without gambling problems are affected by ads and commercials: 1) a survey experiment, 2) a physical test of the body's reaction to watching gambling ads and commercials and 3) qualitative interviews with people who gamble (read more about the subsection's methods used in Appendix 1).

Even though the aforementioned data sources are of more value in assessing the effect of gambling ads and commercials compared to previous analyses based solely on questionnaire surveys, it is important to note that there are also a number of significant reservations in this survey due to the difficulty of measuring the real effect of ads and commercials. For example, there is a difference between participating in a physical experiment and sitting at home watching a commercial and/or a football match on the TV. Furthermore, it has not been the main aim of this report to investigate the impact of ads and commercials, so that more exhaustive studies of this separate problem would be required in order to draw any firm conclusions about the real effect of ads and commercials.

In section 6.4.4. we summarise the findings of the subsection and elaborate on the weaknesses of the analysis design. First of all, however, we present the main results from the three sub-analyses.

6.4.1 Survey experiment

The purpose of the survey experiment was to map the effect of ads and commercials by considering the difference between two groups' responses to a questionnaire.

A total of 1,510 participants were divided into two groups to respond to a questionnaire regarding attitudes towards and the urge to gamble. One group first watched a gambling commercial, while the other group did not watch anything. The two groups were asked the same questions.

The results of the survey experiment show that for many of the questions there are no significant differences between those who watched the commercial and those who did not. It can therefore be inferred that the commercial was not of overriding significance to the respondents' urge to gamble and expectations of gambling.

EXPERIMENT: COMMERCIAL

The commercial used in the survey experiment is called 'Guess Who'.

The commercial is about a young man who is to visit his parents with 'a secret guest'. The camera films the mother, who clearly does not know what to expect. Various different odds are presented for whom the son brings home with him to meet his mother. Is it a woman his own age, a heavily pregnant woman, another young man, an older lady or a set of twins – at very high odds.

The commercial is thus not about a specific event, but more broadly concerns betting on different outcomes of an event.

In a few aspects, however, a statistically significant difference between the groups can be observed. Specifically, data shows that the respondents are less likely to gamble after watching the commercial, compared to the respondents who did not watch the commercial. The commercial therefore has an immediate negative impact on the participants' urge to gamble. However, the commercial does seem to influence low-frequency gamblers (people who gamble one to four times a month) towards a reduction of delayed gratification, a more positive attitude to gambling and an increased propensity to gamble more.

6.4.2 Physical test

The purpose of the physical test was to examine the body's reaction to watching gambling commercials. The specific test entailed inviting three groups (each of nine to ten people) to watch various gambling commercials, while their eye movements, heart rate and sweat production were monitored. The three groups consisted of 1) people who never gamble, 2) people who gamble once in a while and for entertainment and 3) people with a gambling addiction.

The results of the test show that there are no significant differences between the three groups in terms of their sweat production or heart rate variability. However, measurement of the participants' eye movements via eyetracking shows a clear difference in what the groups are oriented towards in the commercials. In several parts of the commercials, there was text information about the age requirement for gambling, as well as references to the StopSpillet helpline and ROFUS. Common to all people with a gambling addiction (group 3) is that their eyes do not focus on this part of the commercial. The finding is consistent across all the commercials shown.

6.4.3 Qualitative interviews

The purpose of the qualitative interviews was to gain an in-depth understanding of whether and how the interviewees themselves experience that their urge to gamble is affected by ads and commercials. In contrast to the survey experiment, the qualitative data indicates that ads and commercials have an impact on people with both moderate and serious gambling problems. The influence is described as both explicit and implicit. On the other hand, people with a low degree of gambling problems do not describe any impact.

STATEMENTS BY INTERVIEWEES WITH GAMBLING PROBLEMS

“Sometimes I actually thought I didn't want to gamble, but then there's a commercial on the telly and you think, 'OK, I'll put a bit of money on' and you end up spending three thousand kroner”

– man, aged 39, serious gambling problems

“I wouldn't say that commercials have a direct impact. But some commercials have naturally grabbed my attention. For example, if a commercial mentions a welcome bonus, you'll go for that type of gambling. So, of course, they do tempt you”

– man, aged 20, serious gambling problems

“I’ve never thought about whether commercials affect me. But when a commercial pops up with the odds for a match, I’ve put some money in, even though I’d thought beforehand that I wouldn’t bet on that match”

– man, aged 25, moderate gambling problems

The aforementioned citations show that the interviewees themselves experience that, in the cases in question, commercials affect the interviewees’ urge to gamble, just as the commercials give rise to spontaneous and unplanned gambling.

Across the interviews, two reasons can be identified for how the interviewees experience that commercials affect their urge to gamble. First of all, some of the interviewees describe how they identify with the commercials. The interviewees specifically express how they can relate to the people who appear in the commercials, and that they therefore also share in the ‘luck’ or ‘successes’ of these characters. The ads and commercials thereby give a belief that ‘if they can, so can I’. The second reason for the impact of ads and commercials is motivated by economic reasoning. Several interviewees describe how attractive bonuses (such as welcome bonuses and free spins) augment the urge to gamble, because the gambling seems to be ‘free of charge’. The ads and commercials therefore contribute to a perception that the chance of winning is greater than the risk of losing.

STATEMENTS BY INTERVIEWEES WITH GAMBLING PROBLEMS

“The commercials show ordinary people who gamble a little, and then suddenly they have an enormous win. This makes you think that, if they can, I guess I can too”

– man, aged 28, moderate gambling problems

“Some of these people in the commercials are normal people who’ve won. This tempts me”

– man, aged 49, serious gambling problems

“The deposit bonus is clearly what grabs me the most. You feel like you’re getting a ‘new life’, because it’s free”

– man, aged 29, serious gambling problems

6.4.4 Summary of sub-analyses

There is considerable variation across the data sources used, which means that no clear conclusion can be drawn from the above three analyses.

The two experiments (the survey experiment and the physical test) indicate that gambling ads and commercials have a relatively limited effect. Even though people with gambling problems focus on other aspects of the commercial, and low-frequency gamblers are affected by the commercials, no impacts are seen concerning the people's heart rate variability and sweat production (physical tests) or responses to most of the questions in the questionnaire (survey experiment). The qualitative survey, on the other hand – and contrary to the aforementioned findings – suggests that ads and commercials have an impact on people with moderate and serious gambling problems.

The qualitative empirical data does show, however, that these people seldom reflect on the influence the ads commercials have on them. Several people indicate, for example, that they have never thought about whether commercials affect them, just as they do not experience that the commercials have a 'direct impact', even though they describe in the interviews how they have experienced that commercials led them to gamble.

The lack of findings from the survey experiment may therefore be due to the respondents to a lesser extent reflecting on and acknowledging the impact of the commercials on their gambling activity and urge to gamble. Furthermore, the lack of findings may be due to a general weakness in the experimental analysis design. For example, there is a difference between participating in an experiment (and watching a commercial in a controlled setting) rather than watching a commercial at home in safe and familiar surroundings.

Moreover, in this instance the effect of commercials on gambling is measured mainly on the basis of commercials for sports betting operators and, secondarily, online casinos. It is not known, however, whether the survey participants are all addicted to the aforementioned types of gambling. We therefore do not know whether the result would have been different if we had solely exposed participants to gambling commercials that marketed the type of gambling to which they are addicted.

6.5 Sub-conclusion

This chapter has analysed which people in Denmark have problems with gambling addiction. The chapter shows that both adults and children and young people with gambling problems differ from the rest of the population in respect of a number of parameters. For example, men/boys are more likely to have a greater consumption of intoxicants and to have a social circle that also has experience with gambling and gambling problems. In addition, they spend more time and money on gambling.

The survey's qualitative material presents three motives to explain why gambling easily develops into an addiction. The motives are related to 1) the interviewees' self-esteem and sense of selves as experts, 2) difficult emotions and situations in everyday life and 3) the dream of a financially independent and 'good' life.

Finally, the chapter examines whether ads and commercials affect people's urge and motivation to gamble. The results of the subsection are inconclusive. While physical tests and a survey experiment find no correlation between ads and commercials and gambling, the survey's qualitative empirical evidence indicates that commercials contribute to unplanned gambling and reinforce the urge to gamble among people with moderate and serious gambling problems.

Video gaming and gambling addiction

7

Video gaming and gambling are typically deemed to constitute two distinct types of games, of which one concerns gambling, while the other is a collective term for different video and console-based games (gaming). However, a large proportion of the video games played today include opportunities to buy virtual elements that can be related to gambling. The gambling-related elements can appear directly in the games, but the elements can also be used as a form of currency in gambling activities on third-party sites.

The introduction of the gambling-related elements into gaming has blurred the distinction between gaming and gambling. This also entails greater exposure of today's children and young people who are gamers to gambling-related elements, even though, legally, they are not old enough to gamble²⁰.

Several researchers in the field have expressed concern that the gambling-related elements of gaming may lead to dependency on a par with gambling addiction²¹. For example, loot boxes, buying and selling skins and skin-betting are highlighted as problematic grey areas that can lead to actual gambling.

This chapter focuses on the link between gaming and gambling, including how gaming and gambling-related elements can potentially pose a risk for children and young people.

The chapter begins with a brief description of the development of the gaming industry, as well as the shift in business models. The virtual elements loot boxes and skins are also presented. In the following sections, the nature of children and young people's gaming is described, as well as their consumption of loot boxes and skins, respectively. The third section outlines the link between gaming and gambling problems, and how children and young people relate to gambling-related elements of gaming. The chapter concludes with a brief summary outlining the main findings of the analyses.

The chapter is based on survey data and qualitative interviews with children and young people who are online gamers.

7.1 Development in the gaming industry's business models

There is broad agreement among researchers that there has been a shift in how game operators make money from online video games. From 1990 to 2005, game operators primarily made money from selling games as one-off transfers ('boxed games') or monthly transfers (subscriptions).

Game operators therefore generated revenue by developing a new game series, by offering games on multiple platforms or via monthly subscription schemes providing access to the server.

Since 2005, however, the 'Free-to-play' business model has won ground in the gaming industry. The business model refers to how the game itself is often free of charge, but various benefits in the game can be purchased via microtransactions. The benefits might be cosmetic changes in the form of skins, access to more tracks, faster progress in the game etc. 'Free-to-play' therefore differs substantially from the previous business models, since the game operators make more of their money from the gamer staying in the game and using microtransactions.

Today, many game operators have fully or partly incorporated microtransactions into their games. Microtransactions therefore account for a significant share of gambling revenue

²⁰ Under statutory provisions, gambling is subject to an age limit of 18. For traditional lotteries and scratch cards, the age limit is 16.

²¹ See e.g., Kristiansen & Severin, 2020.

related to gaming²². Two common microtransactions are skins and loot boxes. The boxes below describe the nature of skins and loot boxes.

Loot boxes

A loot box is a virtual item which is typically visualized as a closed box or chest. The opening of a loot box results in a random award of virtual goods. For example, skin, faster progress in the game etc. the virtual objects are ranked based on their rarity or value, which is why the chance of winning something valuable is low. Loot boxes are either obtained as a reward for solving tasks in the game or via microtransactions.

Skins and skin betting

A skin is the aesthetics of the in-game avatar/weapon. Skins can vary in value depending on their rarity and popularity. Skins can either be bought, traded or won (for example, through a loot box). However, skins can also be used for gambling. This is called skin betting. Skin betting is all types of traditional games (for example, casino games and lotteries), where the stake and/or the prize is a skin. Skin betting is offered on third party websites.

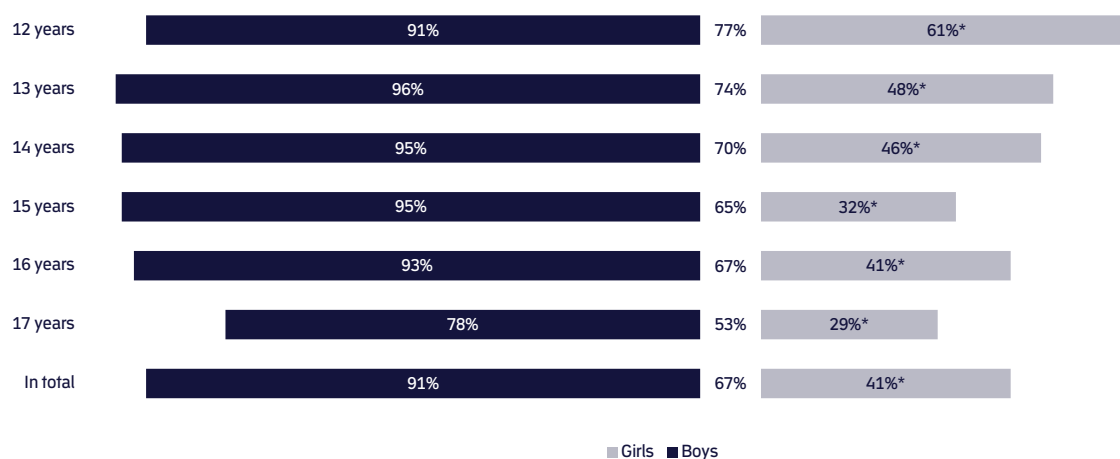
7.2 Nature of gaming by children and young people

This section describes the nature of gaming by children and young people aged 12-17 in Denmark. First of all, the proportion of children and young people who are gamers is presented. Then the time spent on gaming per week by children and young people is described, as well as their assessment of whether the extent of their gaming is problematic. Children and young people’s consumption of skins and loot boxes, respectively, as well as what motivates the purchase of these virtual items, are then illustrated.

7.2.1 Prevalence of gaming among children and young people

The chart below presents the prevalence, the time they spend on and an assessment of the extent of gaming among children and young people aged 12-17. Data is distributed by gender. The blue bars illustrate data from boys, while the grey bars indicate data from girls. The number between the two bars shows averages across genders.

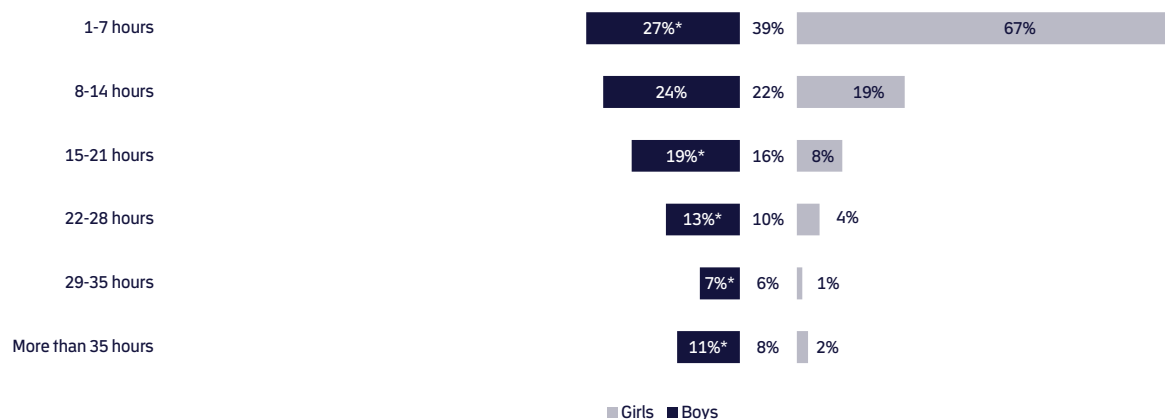
Figure 7-1. Overview of the prevalence of gaming among children and young people aged 12-17, percentage who are gamers by age



²² Kristiansen & Severin, 2020.

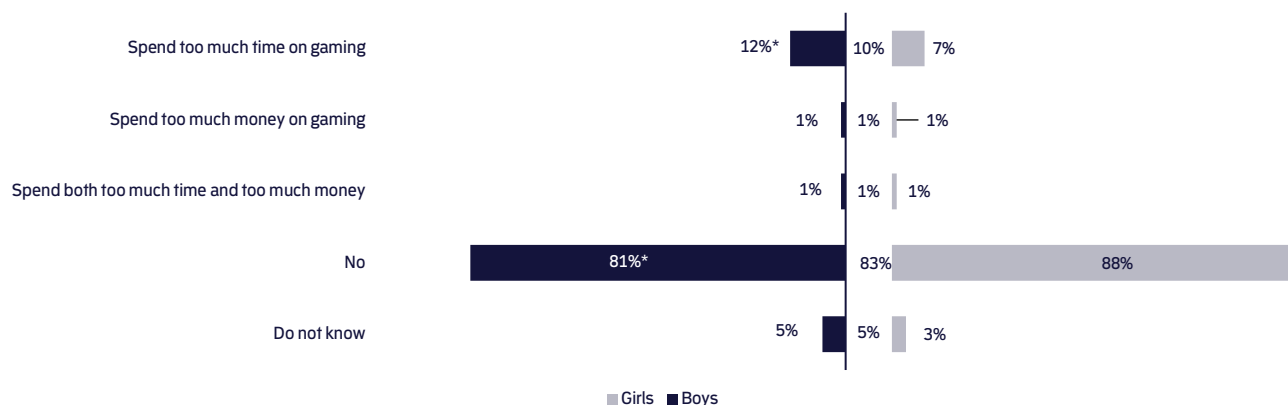
Note: N= 1,779 for percentage who are gamers, by age and gender. Weighted data. Significant differences are marked with *.

Figure 7-2. Overview of the prevalence of gaming among children and young people aged 12-17, time spent on gaming



Note: N=1,145 for time spent on gaming for age and gender. Weighted data. Significant differences are marked with *.

Figure 7-3. Overview of the prevalence of gaming among children and young people aged 12-17, experience own gaming in the following way



Note: N=1,179 for experience of own gaming as problematic for age and gender. Weighted data. Significant differences are marked with *.

The chart shows that among children and young people aged 12-17 gaming is very widespread. Overall, around 70% of children and young people in this age category indicate that they are gamers. Significantly more boys than girls are gamers (around 90% versus around 40%). For both boys and girls, however, the proportion of gamers decreases with increasing age.

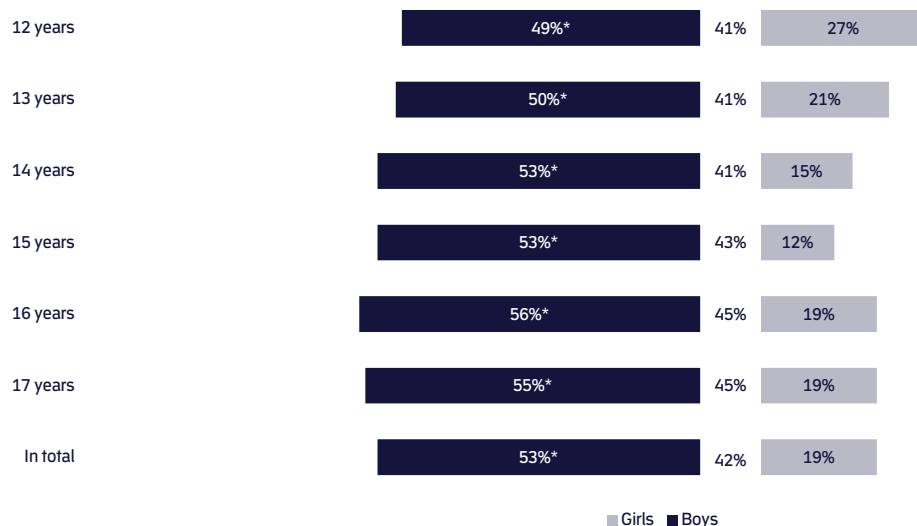
The time spent by those who are gamers varies across genders. The majority of the girls' game between one and seven hours a week (67%), while the same applies to 27% of the boys. On the other hand, around 30% of the boys' game for more than 22 hours a week, while this only applies to 7% of the girls. Boys are therefore generally overrepresented among young people who game a lot. No significant correlation is seen between the time the young person spends on gaming and the labour market affiliation of that young person's parents.

In relation to the aforementioned, the boys are more likely than the girls to consider their time spent on gaming to be problematic. Specifically, 12% of the boys' state that they feel they spend too much time on gaming, while only 7% of the girls state the same. For both boys and girls, particularly the youngest among them feel that they spend too much time on gaming.

7.2.2 Buying skins

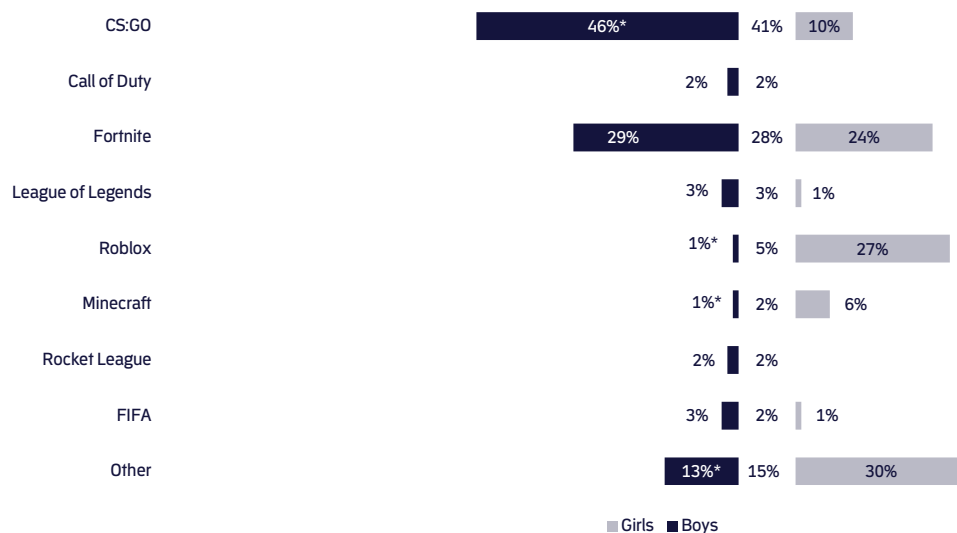
The chart below shows the proportion of young people aged 12-17 who have bought, exchanged, sold or used skins as a means of payment. Data is distributed by gender. The blue bars illustrate data from boys, while the grey bars indicate data from girls. The number between the two bars shows averages across genders.

Figure 7-4. Overview of the prevalence of skins among children and young people aged 12-17, have you ever bought or sold skins?



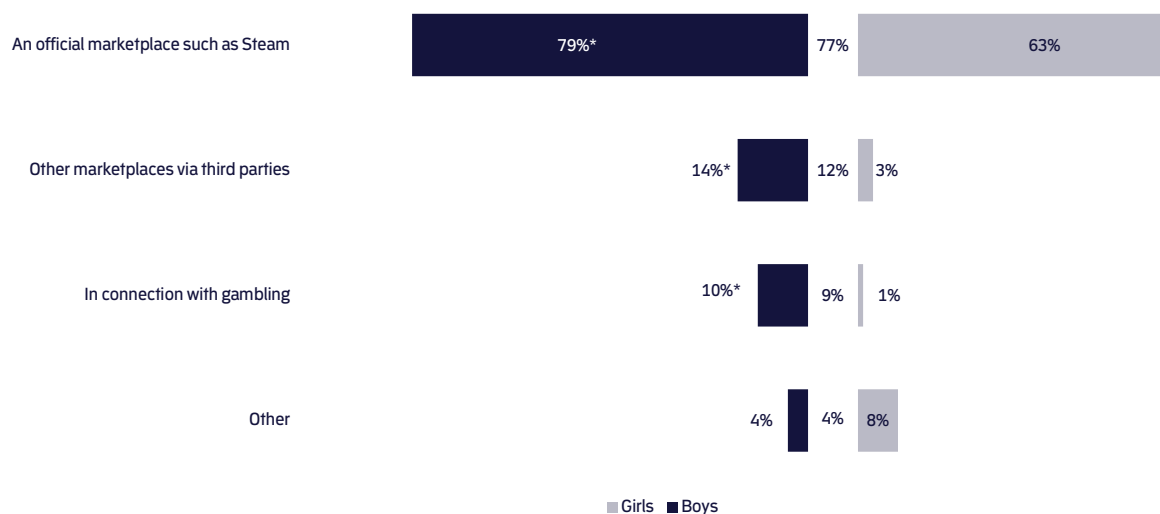
Note: N= 1,179 for percentage who have bought/sold/exchanged or used skins as payment, by age and gender. Weighted data. Significant differences are marked with *.

Figure 7-5. Overview of the prevalence of skins among children and young people aged 12-17, in which game(s) have you traded, bought or sold skins?



Note: N= 501 for percentage who have bought/sold/exchanged or used skins as payment, by the specific games. The respondents were asked to state the full title of the game, after which Ramboll categorised the games. The second category includes more than 50 games named by less than ten respondents. Weighted data. Significant differences are marked with *.

Figure 7-6. Overview of the prevalence of skins among children and young people aged 12-17, where have you traded, bought or sold skin or used them as payment?



Note: N=501 for percentage stating where they exchanged, bought or sold skins or used them as payment. Weighted data. Significant differences are marked with *.

The chart shows that around half of the boys (between 49 and 56%) and one fifth of the girls (12-27%) have bought, exchanged, sold or used skins as a means of payment.

A skin is linked to a specific game. The chart shows the titles of the games in which the respondents bought, exchanged or sold skins. The chart shows that children and young people primarily buy, exchange and sell skins in the CS:GO and Fortnite games. However, the use of skins differs between genders. While the boys typically use skins in CS:GO, the girls are more likely to buy skins through Roblox.

The difference between the genders is significant. Appendix 2 presents a description of what the individual games concern and which skins are linked to the games.

Finally, the chart shows where the respondents have exchanged, bought or sold skins. Here, it can be seen that the majority have used an official marketplace (79% of the boys and 63% of the girls), while only 14% of the boys and 3% of the girls have used third-party sites. In addition, 10% of the boys and 1% of the girls who have used skins have done so in connection with gambling. This means that among the 91% of boys who are gamers, 53% have used skins. Among the 53% of boys who have used skins, 10% have used skins as gambling stakes. Overall, this corresponds to around 5% of all boys aged between 12 and 17 using skins to gamble.

Across the survey's qualitative material, three motives for buying skins can be identified: 1) aesthetics, 2) prestige and social recognition as well as 3) resale and investment.

The first motive concerns the cosmetic and aesthetic value of the skin. Several interviewees state that they buy skins to enjoy the game and the look of their characters/weapons. They find that skins help to give the characters/weapons a personal expression, which makes them 'cooler'. The interviewees also state that by buying skins, they can stand out from the crowd and show themselves off. The interviewees therefore also compare buying skins with other consumer goods (such as clothes and cars), as these objects also help to emphasise one's personal style and identity.

STATEMENTS BY YOUNG PEOPLE: SKINS – AESTHETICS

“I buy skins solely to make sure I look good. A skin makes me feel like it’s my character. I want to put a personal stamp on my character so that the people I play with can see that it’s a character I particularly like”

– boy, aged 17

“It gives the game cosmetic value. When you use a weapon a lot, for example, it’s cool that it stands out from the crowd. If you have a car you drive every day, you want to have a cool car”

– boy, aged 16

“Skins look cool. They make your character look cooler. It’s like you give the character a more personal look”

– boy, aged 17

The second motive relates to prestige and social recognition. Several interviewees highlight that they buy skins to impress their friends or other people they game with or against. The interviewees therefore do not buy a skin due to its intrinsic personal and cosmetic value, but because it lends a prestigious appearance that ensures social recognition from other gamers. For them, a skin therefore entails a social value that ascribes social status to them. In addition, several interviewees indicate that they can use a skin to show the other gamers that they have a lot of money.

STATEMENTS BY YOUNG PEOPLE: SKINS – PRESTIGE

“It’s coolest to have the most expensive skin among your friends. It’s coolest to have a cool knife rather than a weapon that costs nothing. This kind of shows that you have some cash”

– boy, aged 15

“It’s great to have something that others would like to get hold of, but can’t because they don’t have any money. You feel really powerful and that the others look up to you”

– boy, aged 14

The last motive concerns investing and reselling. As described, skins can either be won, bought or exchanged. However, skins can also be resold on Facebook pages or through third-party sites, and thus turned into ready money. A number of interviewees state that they buy skins because they can be resold. The specific aim is to invest in and sell skins in order to achieve actual income. These interviewees share in common that they position themselves as financially savvy and knowledgeable about investing in skins. They experience that they have specific knowledge about a skin’s value and potential, and also a belief that over time their investment in skins can be good business.

STATEMENTS BY YOUNG PEOPLE: SKINS – RESALE

“Skins can become exclusive and worth a lot in the long run. This is also why I’ve bought some very special skins. They may not be worth that much now, but I’m sure they will soon”

– boy, aged 17

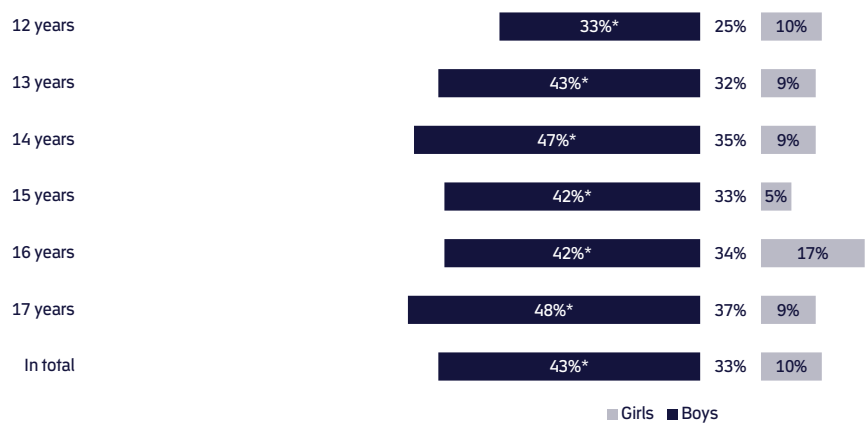
“If you buy a skin that is a little newer, then you just have to wait four to five years, and then you can sell them for twice the price, or more. That way, you can end up with a million dollars. My biggest sale so far is 50 dollars. I waited a couple of years to sell a skin. And I made a pretty big profit on it”

– boy, aged 14

7.2.3 Buying loot boxes

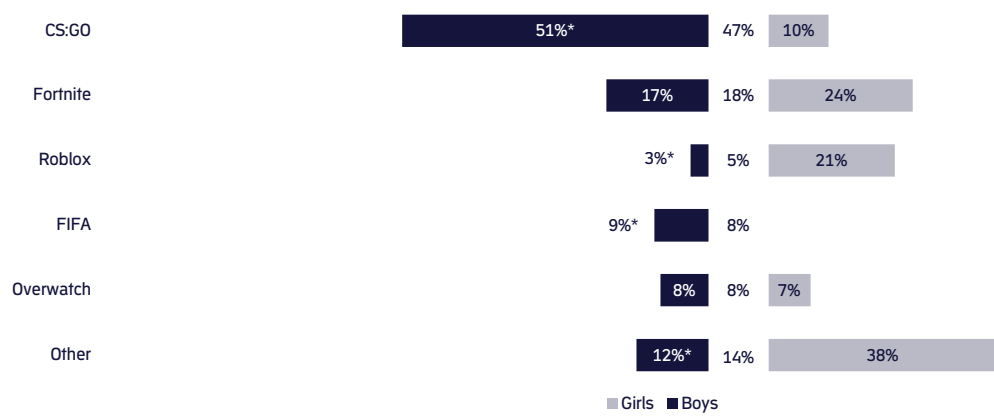
The chart below shows the proportion of children and young people who have bought loot boxes. Data is distributed by gender. The blue bars illustrate data from boys, while the grey bars indicate data from girls. The number between the two bars shows averages across genders.

Figure 7-7. Overview of the prevalence of loot boxes among children and young people aged 12-17, percentage that has spent money on loot boxes



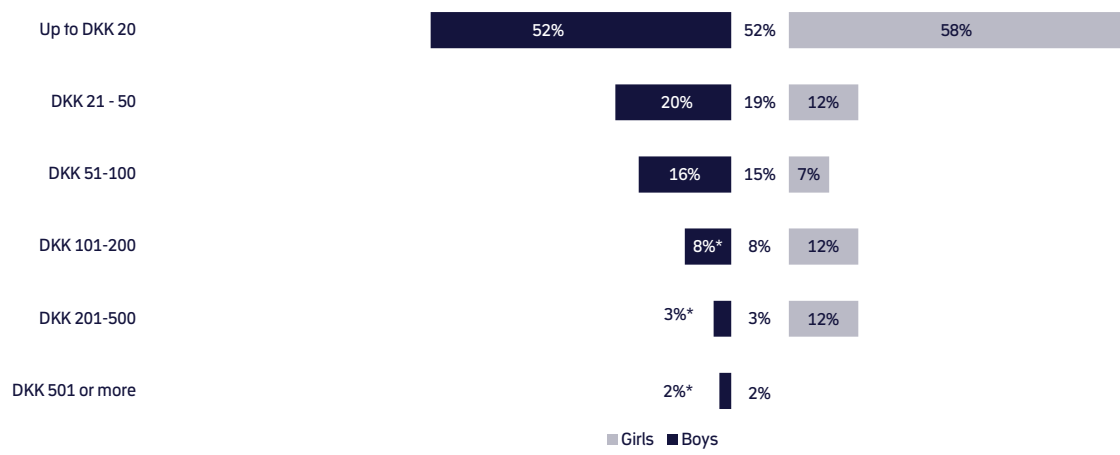
Note: N= 1,179 for percentage that have spent money on loot boxes, by age and gender. Weighted data. Significant differences are marked with *.

Figure 7-8. Overview of the prevalence of loot boxes among children and young people aged 12-17, in which game(s) have you spent money on loot boxes?



Note: N=365 for percentage that have spent money on skins, by the specific games. The respondents were asked to state the full title of the game, after which Ramboll categorised the games. The second category includes more than 50 games named by less than ten respondents. Weighted data. Significant differences are marked with *.

Figure 7-9. Overview of the prevalence of loot boxes among children and young people aged 12-17, around how much money have you spent on loot boxes during the past month?



Note: N=243 for percentage who stated much they had spent on loot boxes during the past month. Weighted data. Significant differences are marked with *.

The chart shows that 33% of the respondents who are gamers have bought loot boxes in a game. Across genders it can be seen, however, that boys are more likely than girls to buy loot boxes. 43% of the boys had bought a loot box, while the same applies to around 10% of the girls. The chart also shows that the older the boys are, the more likely they are to have bought a loot box. This trend does not apply to the girls who buy loot boxes.

As for the respondents' spending on loot boxes, the boys spend an average of DKK 83 on loot boxes per month, while the girls spend DKK 74.

In the survey's qualitative material, the interviewees state that buying loot boxes is motivated by the dream of winning a virtual benefit that has a high value. Several of the interviewees also state that the random element of loot boxes gives a sense of excitement, which enhances the game's entertainment value.

STATEMENTS BY YOUNG PEOPLE: LOOT BOXES

“I bought loot boxes because I want to have the expensive and rare stuff. I hoped I'd get something worth a lot of money. It's definitely making a profit that matters most”

– boy, aged 17

“I buy loot boxes because it's very exciting to see what you get. You get an adrenaline rush when you sit there and are about to open it. You hope you'll get something the others don't have”

– boy, aged 17

“You don't know what you're buying. You buy the mystery of it. And probably also the excitement. You can win something cool that's worth a lot. You forget that you can also win something bad. The glass is only half-full”

– boy, aged 16

The interviewees also state that buying loot boxes is also influenced by YouTubers and streamers. This is because YouTubers and streamers are role models that interviewees look up to, and YouTubers and streamers mainly show videos in which they win valuable virtual items (such as rare and more costly skins). For the interviewees, YouTubers and streamers are therefore solid evidence that it is possible to win and achieve success, which reinforces their desire to buy the above items.

STATEMENTS BY YOUNG PEOPLE: YOUTUBERS AND STREAMERS

“I bought loot boxes because a YouTuber got an amazing knife when he opened one. So, I thought ‘ok, it only costs 2 euros, so I’ll have a go’. The people I’ve seen on YouTube have always got something really amazing – it looks so easy”

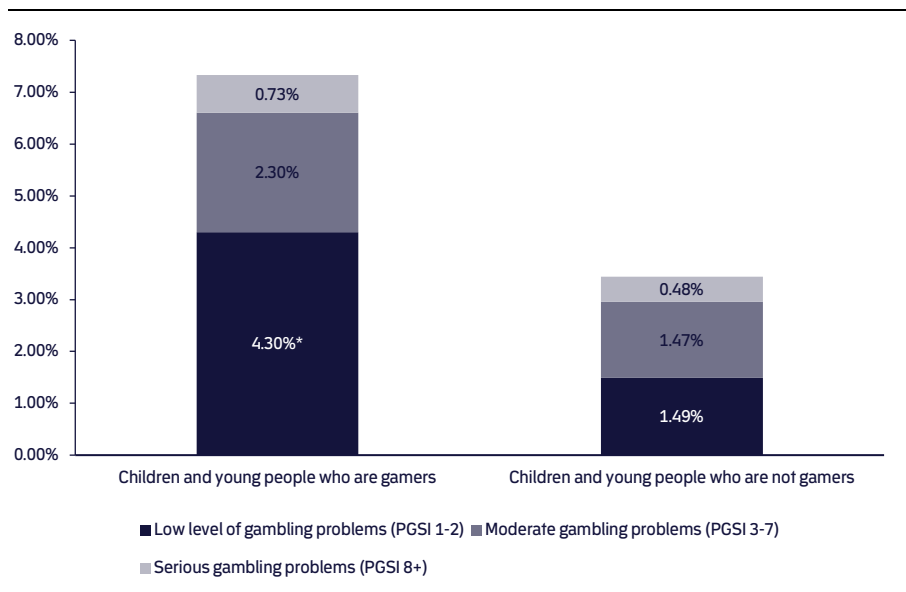
– boy, aged 13

Regarding the above findings, surveys in this area reveal that YouTubers and streamers may contribute to distorting the picture of the chances of winning, because followers are only exposed to ‘the good stories’²³. The indirect advertising of gambling-related microtransactions provided by streamers and YouTubers therefore affects how children and young people orient themselves towards gambling-related elements.

7.3 Link between gaming and gambling

The survey’s quantitative data shows that children and young people who are gamers are significantly more likely to have gambling problems than children and young people who are not gamers. Specifically, 3% of the children and young people who are not gamers have low to moderate gambling problems, while 0.5% have serious gambling problems. For comparison, 7% of children and young people who are gamers have either low (4%), moderate (2%) or serious (1%) gambling problems. The total proportion of children and young people with at least a low level of gambling problems is significantly higher for children and young people who are gamers, compared to children and young people who are not gamers.

Figure 7-10. PGSI categories divided into children and young people who are gamers and not gamers



Note: (N=1,709) Weighted data. Significant differences are marked with *.

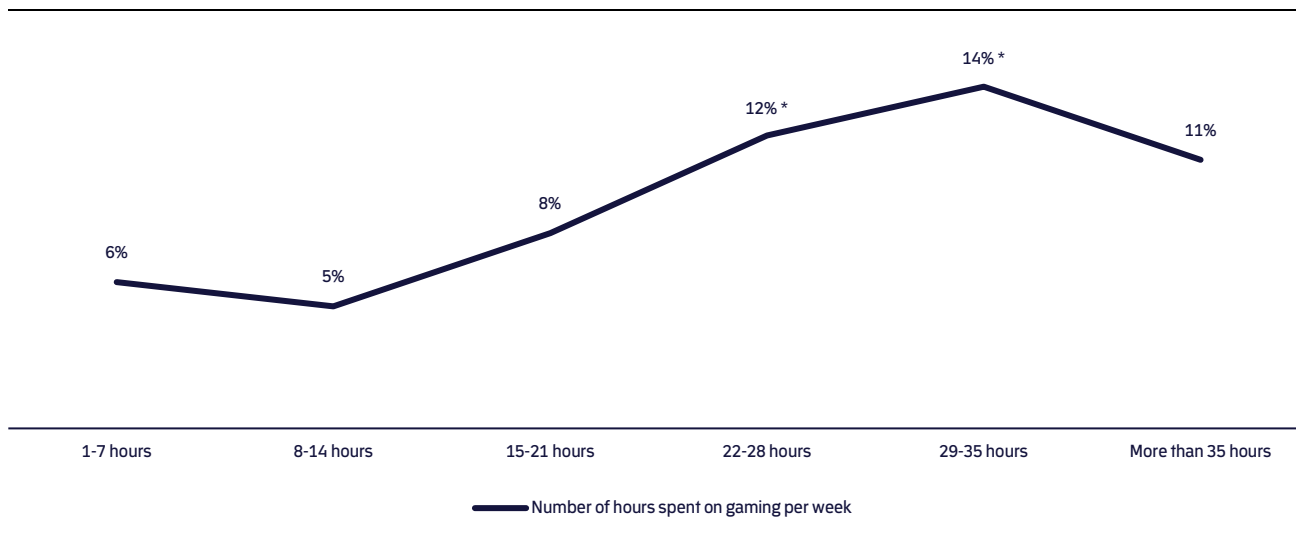
²³ Fynbo et al, 2020.

In this section, we outline the correlation between gaming and gambling. Initially, the correlation between PGSI score and time spent on gaming is highlighted. Then the correlation between PGSI score and the purchase of skins and loot boxes is presented. Finally, the section elaborates on how children and young people relate to gaming-related elements in online gambling.

7.3.1 Correlation between PGSI score and time spent on gaming

The chart below illustrates the correlation between time spent on gaming and gambling problems.

Figure 7-11. Proportion of children and young people who are gamers and have at least a low level of gambling problems, broken down by time spent on gaming per week



Note: N= 1,083. Weighted data. 'Do not know' answers are not included in the analysis. Significant differences between 1-7 hours and the individual categories are marked with*.

The chart shows that children and young people are more likely to have gambling problems (calculated via PGSI) if they spend many hours gaming each week. For example, 6% of the children and young people who game 1-7 hours a week have at least a low level of gambling problems. Conversely, 12% and 14%, respectively, of the children and young people who game between 22-28 hours and 29-35 hours per week have at least a low level of gambling problems.

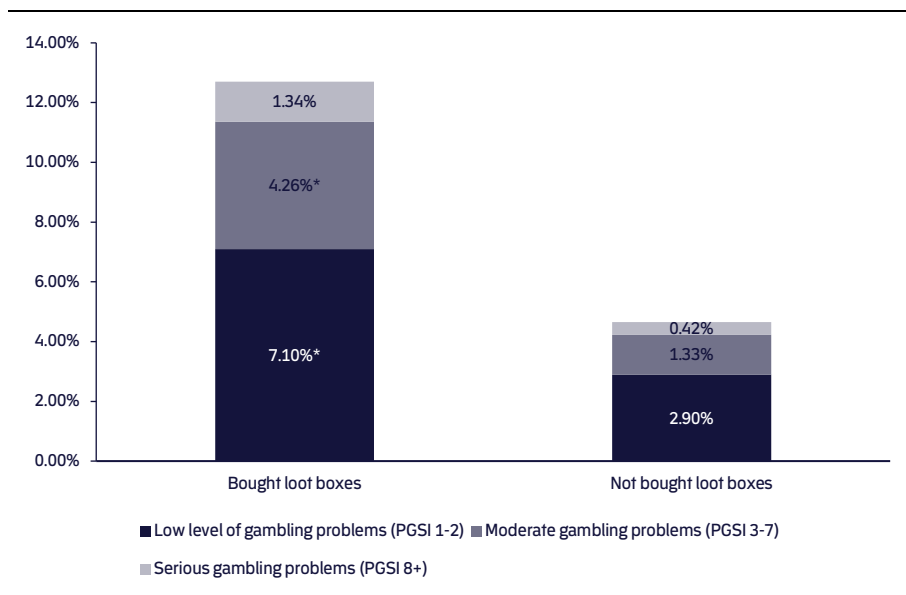
This shows a significantly higher incidence of gambling problems among the children and young people who game for the highest number of hours per week compared to the children and young people who game for the lowest number of hours per week.

Data also reveals whether children and young people who are gamers assess that they spend too much time and money on gaming. 87% assess that they do not spend too much money and time on gaming. On the other hand, 11% assess that they spend too much time on gaming, while 1% assess that they spend too much money. Finally, 1% state that they spend both too much money and too much time on gaming. On comparing the assessment with the respondents' PGSI scores, however, a trend can be seen for children and young people to be more likely to have gambling problems if they feel that they spend too much time and/or money on gaming (see the chart in Appendix 6).

7.3.2 Correlation between PGSI score and purchase of loot boxes and skins

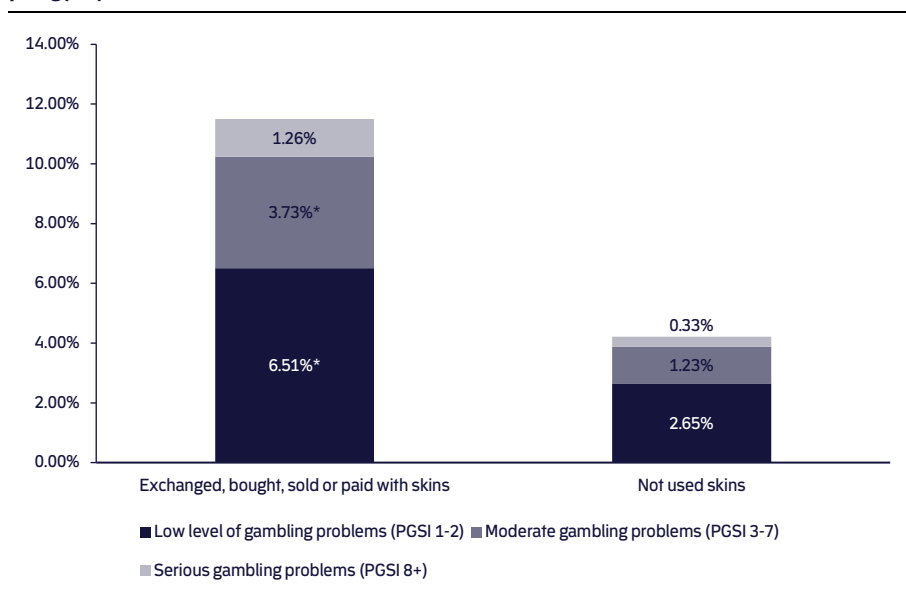
The chart below illustrates the correlation between the use of skins and loot boxes, and gambling problems.

Figure 7-112: PGSI categories by children and young people who have bought loot boxes, and children and young people who have not bought loot boxes



Note: N= 1,115. Weighted data. Significant differences are marked with*.

Figure 7-13: PGSI categories by young people who have bought, exchanged, sold or paid with skins, and young people who have not used skins



Note: N= 1,115. Weighted data. Significant differences are marked with*.

As the chart shows, there is a correlation between buying skins and loot boxes, and gambling problems. Specifically, data shows that 13% of the children and young people who have bought loot boxes have gambling problems. For comparison, only 5% of the children and young people who do not use loot boxes have gambling problems. The difference between the groups is significant.

In addition to the aforementioned, data shows that 11% of the children and young people who have exchanged, bought, sold or used skins as stakes in a game have gambling problems. On the other hand, 4% of the children and young people who have not used skins have gambling problems. There is thus a significantly greater prevalence of gambling problems among the children and young people who have used skins, compared to the children and young people who have not used skins. It should be noted, however, that only a small proportion of the total population use skins when gambling. Specifically, 4% of the children and young people who are gamers have used skins as gambling stakes.

It is also important to point out that the pattern seen in Chart 7-6 is not only due to, for example, the higher incidence of gambling problems among boys, and that more boys buy loot boxes and use skins. A regression analysis shows that even when adjusted for demographic and socioeconomic conditions affecting the young people, using skins and buying loot boxes is still of independent significance to the probability of having gambling problems. The results of the regression analysis are set out in Appendix 6.

In the qualitative material, individual interviewees similarly indicate that they engage in skin-betting. The empirical evidence shows that the motivation to gamble with skins is highly comparable with the reason for buying loot boxes and gambling. The interviewees specifically state that they engage in skin-betting because they are keen about winning, and also because they enjoy the excitement that skin-betting gives them.

7.3.3 Experience of gambling-related elements in games

In the survey's qualitative material, the interviewees compare both loot boxes and skin-betting with traditional gambling and call them, among other things, 'gambling in disguise' or 'hidden gambling'. The comparison is based on how the outcome of both skin-betting and loot boxes is unknown and governed by chance, and on how loot boxes and skin-betting give the same adrenaline rush as traditional gambling (such as slot machines or online casinos). In this regard, several of the interviewees describe how they continue to buy loot boxes because they enjoy the 'butterflies in my stomach' as they open the virtual element.

A few interviewees point out that both skin-betting and buying loot boxes are habit-forming and addictive. This is because the random element of the game is associated with enjoyment and excitement, and the hope of winning overshadows any thought of losses. The research supports the survey's findings. Research indicates that the gambling-related elements of loot boxes may cause cognitive distortions that stimulate persistent behaviour driven by the hope of receiving a valuable reward²⁴.

STATEMENTS BY YOUNG PEOPLE: ADDICTION

“You can get a little voice in your head saying that if I throw two euros at a loot box and get a skin for a thousand euros, I’ll be set for life. So, the idea is that by staking a little, you can win a whole lot. That’s clearly what got me hooked. I had to go to a psychologist to get out of it again”

– boy, aged 18

²⁴ Kristiansen & Severin, 2020.

“I’ve spent loads of money on loot boxes. I have a problem. I’m directly addicted to buying loot boxes. Before now, I’ve spent five hundred dollars a day. It wasn’t my money. It was my dad’s. I really regret it. But I didn’t think about what I was doing”

– boy, aged 17

Several interviewees mention that due to the microtransactions’ design they are not aware of how much they are spending until it is experienced as an actual loss of control that has negative consequences (such as angry parents and punishment). This is because game operators have designed the microtransactions in such a way that account details are registered in the payment system after the first purchase, so that gamers only need to click a few times to make new purchases. For the interviewees, this means that they reflect less on how much they spend.

7.4 Sub-conclusion

Based on the chapter’s analyses, it can be inferred that there is a higher incidence of gambling problems among children and young people who are gamers. Data furthermore shows that respondents are more likely to have gambling problems if they 1) spend a lot of time gaming, 2) assess the extent of their gaming as problematic and 3) buy skins and/or loot boxes.

There are thus a number of indications of a correlation between high gaming activity and gambling problems. However, it is not possible to conclude whether gaming as such leads to gambling problems. However, the qualitative data shows that the random elements of online gaming (such as loot boxes) are a direct extension of gambling, and that children and young people often find buying gambling-related elements in games and skin-betting to be exciting, giving an adrenaline rush.

The gambling-related mechanisms of the games are therefore comparable to the elements found in classical gambling. In the same way, the motivation to buy the gambling-related elements is closely related to the motivation to gamble; namely, excitement and the dream of winning. In addition, a few interviewees indicate that skin-betting and loot boxes as such are habit-forming and addictive – just as gambling can be. The chapter’s analyses therefore indicate that gambling-related elements within and outside the game can be a slippery slope if children and young people are not aware of how much, and on what, they are spending.

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8

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