Online gambling patterns in Germany

Basic findings of a web survey

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Context

Conflict of interest:
In the last five years, Tobias Hayer has received financial support as principal investigator from the German Federal Ministry of Health, various Federal States, the Joint Gambling Authority of the Federal States and the legal committee of the German Lotto and Totoblock.

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Further reading in German (Research Report):
Brosowski, T., von Meduna, M., Hayer, T., Buth, S. & Kalke, J. (2024). *Online-Glücksspiele: Muster des Glücksspielverhaltens vor und nach Einführung des Glücksspielstaatsvertrages 2021 - Abschlussbericht*. Universität Bremen.

Background – Online gambling (Germany)

Online / Internet-based gambling:

→ Wide range of gambling activities offered via internet-enabled devices such as computers, smartphones, tablets or interactive television

→ Growing popularity due to high convenience and availability

Regulation in Germany:

After years of controversial discussion, a new State Treaty on Gambling came into force on July 1, 2021. All forms of online gambling were legalized nationwide (i.e. virtual gaming machines, online poker, online casinos). The sports betting market was already opened to private companies in 2020.

Background – White List

https://www.gluecksspiel-behoerde.de/de/erlaubnisfaehigesgluecksspiel/whitelist (06/08/2024)

Sports betting: 30 permissions
Betway, Bwin, Ladbrokes, Tipico, Tipwin, WINAMAX etc.

Virtual gaming machines: 39 permissions
Bwin, Deutsche Gesellschaft für Glücksspiel (jackpotpiraten.de), Lotto Hessen, Löwen Play, Novo Interactive, Sächsische Spielbanken, Tipico etc.

Online poker: 5 permissions
888 Germany, Bwin, Ladbrokes etc.

Online casinos: 1 permission
Staatliche Lotterie- und Spielbankenverwaltung (Bayern)

Background – Market Volume (GGL, 2023)

Gross gaming revenue (= stakes minus winnings) in 2023: EUR 13.7 billion
(→ total legal German gambling market)

Sports betting: EUR 1.8 billion or 13% market share

Virtual gaming machines / online poker: EUR 0.4 billion or 3% market share

Offline to online ratio in terms of gross gaming revenues: 78% vs. 22%
(→ total legal German gambling market)

About 761 German-language websites of 205 providers who offer their products without a national permission (→ illegal / offshore gambling)

Background – Selected Scientific Findings

Latest population gambling survey in Germany (Buth et al., 2024):
Gambling Disorder (4+ DSM-5-criteria): 2.4% of individuals aged 18 to 70 (≈ 1.4 million people)
At-risk gambling (1-3 DSM-5 criteria): 6.1% (≈ 3.5 million people)

Only a minority of respondents had participated in online gambling:
→ 3.8% in relation to so-called “risky forms of gambling” such as machine gambling, casino games, and sports betting (12-month prevalence rates; males: 6.2%, females: 1.4%)

Clinical data from Lower Saxony (Brosowski & Hayer, 2024):
→ 41.9% of clients seeking outpatient counselling cite an internet-based form of gambling as the cause of their problem. Compared to other subgroups, this clientele tends to be younger and well educated.

Research Rationale / Aim

In Germany, there is currently no reliable data on gambling behavior on the Internet based on larger samples and with reference to all forms of gambling!

The overarching aim of this article is to present the first comprehensive explorative analysis of self-reported data on online gambling behavior for Germany (before the implementation of a new legislative framework)!

Method – Overview (1)

Self-reported data from members of an online access panel ("PayBack panel") with a total of over 160,000 active panelists.

Part of a larger-scale research project that examines typical patterns of (online) gambling activities before and after the implementation of the Gambling State Treaty 2021 on a longitudinal basis.
In the following, reference is made exclusively to data from the first measurement point (i.e. a cross-sectional data).

Respondents were selected according to their place of residence: Individuals should primarily come from federal states with the most diverse (restrictive vs. permissive) gambling law frameworks.

All potential respondents received a request from the PayBack panel administration asking whether they would be willing to take part in a survey on "leisure activities in the past year" in return for an expense allowance ("PayBack points").

Method – Overview (2)

Data collection took place online in June and July 2021 for 1 month using "LimeSurvey" software. The average time taken to complete the questionnaire was 36 minutes.

The overall target group was defined as individuals who had participated in any gambling form during the past 12 months (→ "active gamblers")

Inclusion criteria: N = 2,704 individuals (after data cleaning) who reported that they had taken part in online gambling at least once in the past 12 months (solely on the Internet: n = 2,157; both online and offline: n = 547).

Method – Questionnaire

Person-centered information
Age, gender, migration background, relationship status, net household income, reduced mobility due to physical or psychological limitations etc.

Gambling patterns
Participation online (10 forms) and offline (12 forms), stakes, winnings and losses, time spent gambling, participation in non-monetary gambling, for online gambling: number of online providers, payment methods, end devices, motives etc.

Gambling Motives Questionnaire (GMQ; Stewart & Zack, 2008)
3 subscales (with 3 item each): enhancement, social, coping

DSM-5 criteria for Gambling Disorder (9 items; Falkai & Wittchen, 2018)

Short Gambling Harm Screen with 10 items (SGHS; Browne et al., 2018)

Gamblers‘ Beliefs Questionnaire (GBQ; Steenbergh et al., 2002)
Total value (21 items) and 2 subscales: Luck/Perseverance and Illusion of Control

Mental Health Inventory (5 items; MHI-5; Berwick et al., 1991)

Findings – Sample and Gambling Behavior

Male gender	62.7%
Age	M = 45,5 years
Migration background	14.0%
Gambling offline (past 12 months)	(1) Number lotteries: 18.7% (2) Scratchcards: 13.9% (3) State sponsored sports betting: 7.6%
Gambling online (past 12 months)	(1) Number lotteries: 82.8% (2) Scratchcards: 38.2% (3) Fixed-odds sports betting: 25.7%

Findings – Gambling Behavior

Characteristic		% (n/N valid)
Number of forms of gambling used offline in the last 12 months	none	79.8% (2,157/2,704)
	1 gambling form	3.2% (87/2,704)
	2 gambling forms	5.5% (148/2,704)
	≥ 3 gambling forms	11.5% (312/2,704)
Number of forms of gambling used online in the last 12 months	1 gambling form	43.6% (1,179/2,704)
	2 gambling forms	28.8% (779/2,704)
	≥ 3 gambling forms	27.6% (746/2,704)
Number of forms of gambling used offline and online in the last Gambling 12 months	1 gambling form	36.8% (995/2,704)
	2 gambling forms	25.7% (696/2,704)
	≥ 3 gambling forms	37.5% (1,013/2,704)
Number of different online gambling providers played with in the last 12 months?	1	58.3% (1,558/2,672)
	2	28.6% (764/2,672)
	3	9.0% (241/2,672)
	4	2.1% (56/2,672)
	5	0.5% (13/2,672)
	≥ 6	1.5% (40/2,672)

Findings – Online Gambling Behavior (1)

Characteristic		% (n/N valid)
Payment method	Debit card	35.5% (961/2,704)
	Credit card	32.6% (882/2,704)
	E-wallet (e.g., PayPal. Skrill. Neteller)	22.6% (612/2,704)
	Prepaid card (e.g., Paysafecard)	4.6% (125/2,704)
	Cryptocurrency	0.6% (15/2,704)
	Other	17.6% (477/2,704)
Devices	Smartphone	58.0% (1.567/2,704)
	Laptop	36.8% (995/2,704)
	PC	25.4% (686/2,704)
	Tablet	17.7% (479/2,704)
Typical time	Between 18:00 in the evening and midnight	65.2% (1.762/2,704)
	Between 12:00 at noon and 18:00 in the evening	35.3% (955/2,704)
	Between 06:00 in the morning and 12:00 at noon	8.1% (220/2,704)
	Between midnight and 06:00 in the morning	4.4% (120/2,704)
Alcohol consumption while gambling online	Never	69.0% (1844/2,689)
	Rarely	18.0% (491/2,689)
	Sometimes	9.5% (254/2,689)
	Often	2.7% (72/2,689)
	Always	1.0% (28/2,689)
Smoking while gambling online	Never	77.1% (2071/2,688)
	Rarely	6.1% (165/2,688)
	Sometimes	5.8% (156/2,688)
	Often	5.6% (151/2,688)
	Always	5.4% (145/2,688)

Findings – Online Gambling Behavior (2)

Characteristic		% (n/N valid)
Have you ever played a game of chance on the Internet only for points, i.e. not for real money?	No	60.5% (1.623/2,681)
	Yes	39.5% (1.058/2,681)
Did you first play for points or first for real money? (Basis: people who have ever gambled for points)	For points	79.3% (838/1,057)
	For real money	20.7% (219/1,057)
Reasons for gambling online for points	Because it‘s fun	61.0% (645/1,058)
	Out of curiosity	41.0% (433/1,058)
	As a precautionary measure to avoid losing money	32.0% (336/1,058)
	To practice for later participation in real gambling	19.0% (204/1,058)
	Because there was no more money available for real gambling	6.8% (72/1,058)
What contributed most to you first becoming aware of gambling on the Internet?	Own research (targeted or random)	40.9% (1.103/2,694)
	Advertising via TV	16.4% (442/2,694)
	Friends and acquaintanes	15.8% (426/2,694)
	Advertising via social media channels	12.7% (342/2,694)
	Family members	8.0% (216/2,694)
	Other	6.1% (165/2,694)

Findings – Motives for Online Gambling

Characteristic	M (SD)	Percentile 50 (25; 75)
Easy accessibility	3.71 (1.21)	4.00 (3.00; 5.00)
Possibility to gamble from anywhere	3.62 (1.27)	4.00 (3.00; 5.00)
High user-friendliness	3.42 (1.15)	4.00 (3.00; 4.00)
Constant availability	3.33 (1.37)	4.00 (2.00; 4.00)
Variable play locations (mobility)	3.32 (1.31)	4.00 (3.00; 4.00)
Wide range of gambling products	3.07 (1.36)	3.00 (2.00; 4.00)
Immediate payouts	3.05 (1.33)	3.00 (2.00; 4.00)
Possibility to gamble alone	3.02 (1.38)	3.00 (2.00; 4.00)
More interesting games offered	3.00 (1.31)	3.00 (2.00; 4.00)
Fast game speed	2.94 (1.31)	3.00 (2.00; 4.00)
Possibility to gamble privately or anonymously	2.88 (1.37)	3.00 (1.00; 4.00)
Low costs	2.87 (1.23)	3.00 (2.00; 4.00)
Bonuses and other rewards	2.71 (1.32)	3.00 (1.00; 4.00)
High payout ratios	2.54 (1.19)	3.00 (1.00; 3.00)
Good chances of winning	2.47 (1.14)	3.00 (1.00; 3.00)
1 = disagree at all; 5 = totally agree; N ≥ 2,679		

Findings – Gambling Problems and Harms

Characteristic		% (n/N valid)
Number DSM-5-criteria	0	78.0% (2,108/2,704)
	1-3	15.8% (426/2,704)
	4-5	2.7% (74/2,704)
	6-7	2.5% (68/2,704)
	8-9	1.0% (28/2,704)
Number of harms (SHGS)	0	72.2% (1,951/2,704)
	1-2	18.1% (490/2,704)
	3-5	6.6% (177/2,704)
	6-10	3.2% (86/2,704)

Findings – Prediction Model

(1) The total data set was randomly divided into two equally sized sub-data sets (n = 1,352), with one serving as the training data set and the other as the test data set. (2) In the training data set, exploratory tests with the number of harms as dependent variable was carried out. (3) Characteristics with a statistically significant association and with at least a small effect size were included in a generalized linear model to predict the number of negative consequences in a multivariate model (** p ≤ 0.01; * p ≤ 0.05).

Characteristics	Regression parameters (95%-CI)
Mental health (MHI-5-Score)	-0.001 (-0.001; 0.000)**
Age	0.000 (-0.001; 0.000) ns
General gambling motives (coping)	0.039 (0.026; 0.052)**
Number of online gambling providers	0.008 (0.003; 0.014)**
Motive for online gambling: Possibility to gamble from anywhere	0.006 (0.002; 0.009)**
Total active days gambled/year (online and offline)	0.001 (0.001; 0.001)*
Smoking while gambling online	0.001 (-0.004; 0.005) ns
Alcohol consumption while gambling online	-0.001 (-0.008; 0.006) ns
Number of gambling forms (online and offline)	0.001 (-0.002; 0.003) ns
Payment menhod online gambling: Credit card	0.007 (-0.003; 0.017) ns
Payment method online gambling: Prepaid card	0.019 (-0.001; 0.039) ns
Online gambling during work	0.000 (0.000; 0.000) ns
General gambling motives (enhancement)	0.003 (-0.007; 0.014) ns
Reasons for gambling online for points: Practicing	-0.002 (-0.016; 0.012) ns

Findings – Spotlights

On a global level, gambling behavior of the sample is moderate. A key reason for this is likely to be the dominance of the numbers lottery among all online forms of gambling and thus a gambling form with low addictive potential.

There is a larger number of individuals in Germany who gamble exclusively online. Despite their comparatively high average age of 45.5 years, this also applies to the present sample.

About 40% of respondents played for points and thus took part in a form of simulated internet gambling. According to retrospective data, the majority first gambled for points and then for real money, which can be seen as further empirical evidence for the validity of the "door-opener hypothesis".

A total of five variables predicted the presence of negative gambling consequences. This spectrum includes both individual and gambling-related variables (e.g., increasing number of online gambling providers).

Limitations

Self-reported data
→ susceptible to memory effects and other biases

Selective sample (PayBack panel)
→ members of a single access panel provider (non-representativeness)

Uncontrollable macro factors
→e.g., the Corona pandemic with the corresponding restrictions and the influence on gambling patterns

Implementation of the Gambling State Treaty as a process
→ Licenses for online gambling have been issued in stages since October 2020 starting with the sports betting segment, which makes it impossible to clearly classify the respective legal status of certain platforms

Implications

It would be desirable to **replicate and supplement the findings** presented here with representative / randomly selected samples, for example from other panel operators or by using gambling behavioral data. Such research projects should focus in particular on specific target groups (e.g., young adults or the subgroup of dual users).

The findings serve as a starting point for **follow-up investigations**. A multiple survey of the same group of people over time not only enables the mapping of typical individual developments, but also a more detailed empirical determination of the effects of the Gambling State Treaty.

From a **player protection perspective**, the findings provide valuable implications for an update of the Gambling State Treaty. The focus is on the **breadth of gambling behavior** as an or indicator for the development of gambling-related problems. Consequently, the entirety of individual gambling activities must be taken into account to increase the effectiveness of prevention effects (e.g. by introducing a **personalized player card** or using **cross-platform early detection systems on the Internet**).

Thank you for your attention!

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