Codebook for Behavioral Characteristics of Internet Gamblers Who Trigger Corporate Responsible Gambling Interventions

This codebook provides information for both the raw and analytic datasets used to generate a comparison of the actual internet gambling behavior of subscribers who experienced responsible gambling events (please see more detail, below) and controls (Gray, LaPlante, & Shaffer, 2010). These datasets come from the collaborative Internet gambling research project between the Division on Addiction (Division) and bwin.party digital entertainment (**bwin.party**), an Internet betting service provider headquartered in Vienna, Austria. These datasets are based on electronic records of the entire **bwin.party** betting history of 2,068 subscribers who triggered a responsible gambling intervention between November 2008 and November 2009 (i.e. RG cases) and 2,066 individuals who made an initial **bwin.party** deposit on the same day as an RG case, but did not trigger a responsible gambling intervention between November 2008 and November 2009 (i.e. controls). The analytic dataset contains indices of betting behavior for two sportsbetting products (fixed odds and live action) and combination of three casino-type products.

To understand how these data relate to other publications arising from the Division on Addiction/**bwin.party** collaboration, please see the master codebook.

Source(s): Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School

PI(s): Dr. Howard J. Shaffer

Sponsor(s): bwin.party, digital entertainment

Related publication(s): Gray, H. M., LaPlante, D. A., & Shaffer, H. J. (2012). Behavioral characteristics of Internet gamblers who trigger corporate responsible gambling interventions. *Psychology of Addictive Behaviors, 26* (3), 527–535

Raw Dataset I – Demographics (n = 4,134)

Raw Dataset I Demographics includes the following demographic information: User ID, a variable indicating group (i.e. case versus control), country of residence, preferred language for interacting with *bwin.party*, gender, year of birth, *bwin.party* registration date, and *bwin.party* first deposit date. (We have changed date of birth to year of birth to protect participant privacy and comply with institutional review board (IRB) requirements.)

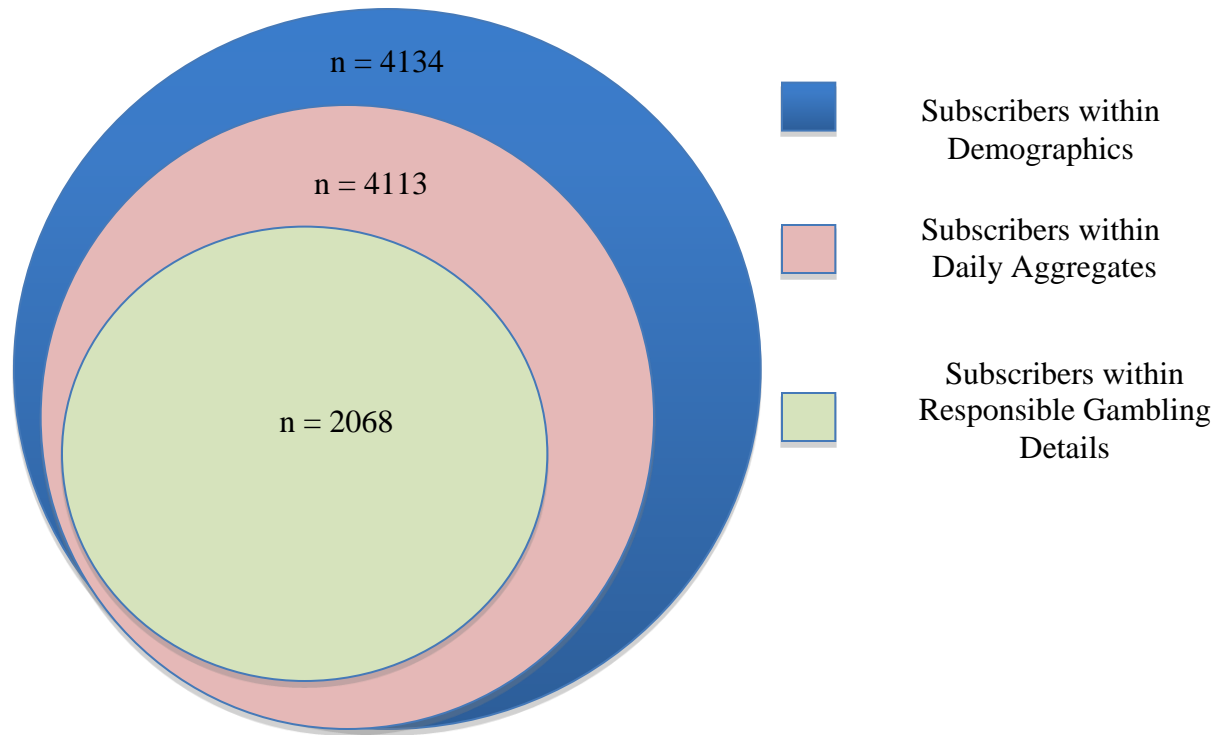## Raw Dataset II – Daily Aggregates (n = 981,782)

Raw Dataset II Daily Aggregates includes the betting information associated with each product (please see Appendix 1) for 4,113 participants for their entire betting history with *bwin.party*. This dataset contains the following information: User ID, date of transaction, product type, turnover (i.e. amount staked) for given day/product, hold (i.e. total amount lost for given day/product), and number of bets for given day/product. All transactions are in Euros. Data are missing for 21 subscribers (all controls) who had no daily aggregates of betting behavior.

Raw Dataset III –Responsible Gambling Details (n = 2,068)

Raw Dataset III Responsible Gambling Details includes details about the responsible gambling triggers and interventions used by *bwin.party* customer service for the 2,068 RG cases included in this study. This dataset contains the following information: User ID, number of RG events experienced, First RG date, Last RG date, First RG Event type (we used the first RG event to classify subscribers), and Intervention type.

Figure 1 explains the interrelationships among the raw datasets. The total cohort includes 4,134 unique subscriber IDs. *bwin.party* provided daily aggregates for 4,113 of those subscribers. Two thousand sixty eight subscribers had triggered Responsible Gambling (RG) interventions at least once.

Figure 1. The interrelationship between raw datasets within the entire betting history of Responsible Gambling triggered (RG) and control individuals.

n = 4134

n = 4113

n = 2068

■ Subscribers within Demographics

□ Subscribers within Daily Aggregates

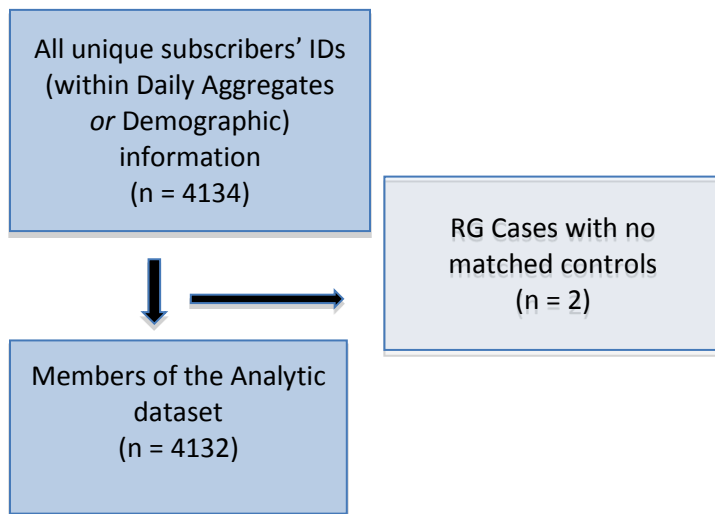□ Subscribers within Responsible Gambling Details

Analytic Dataset (n = 4132)

This Analytic dataset contains information regarding each participant included in the Demographics raw dataset including, where possible, actual betting behavior data for fixed odds, live-action and casino-type betting aggregated over the entire history of betting. As Figure 2 shows, the Analytic dataset does not include two subscribers (RG cases: 5975827 and 2975944) who had no matched controls.

Using the raw dataset Daily Aggregates, the Division computed the following nine betting activity indices each for fixed-odds sportsbetting, live-action sportsbetting, and casino-type betting: sum of stakes, sum of bets, sum of active betting days, duration of betting days, frequency, bets per betting day, euros per bet, net loss, and percent lost. (These indicators of betting activity are described in more detail below, in the table "Variables in the Analytic Dataset.") The Analytic dataset includes these derived values as well as values that have been square root transformed. (For the variables net loss and percent lost, we added a constant to eliminate negative values before applying the square root transformation; these intermediate values also are included.) The first Discriminant Function Analysis (DFA) described in the paper uses the full set of participants. For participants with missing values due to lack of play, we used values of zero for appropriate betting activity indices. For example, participant 1570289 did not engage in casino betting during the window of observation. His values for the nine casino betting activity indices were set to zero. (We did not include subscribers for whom we had no daily aggregates data in this analysis.) The second DFA described in the paper uses the square root transformed values for the group of participants (n = 1,300) who have data for all 27 variables.

The Division transferred the following variables for each participant from the raw dataset Demographics to the Analytic dataset: A variable indicating group (i.e. case versus control), first deposit date, bwin.party registration date, and demographic information (i.e. country name, language name, gender, year of birth, and age at registration). The Division also added a variable indicating whether the daily betting transactions are missing for each subscriber.

Figure 2. CONSORT diagram for development of the Analytic dataset.

All unique subscribers' IDs (within Daily Aggregates *or* Demographic) information (n = 4134)

RG Cases with no matched controls (n = 2)

Members of the Analytic dataset (n = 4132)

Variables in Raw Dataset I - Demographics

Variable	Data Type	Description	N	Min	Max	Note
USERID	Numeric	User id	4134	31965	9859152	User ID was assigned to each participant by bwin.party at time of registration.
RG_case	Numeric	Subscriber's group	4134	0	1	0 = control; 1 = RG case.
CountryName	String	Subscriber's country of residence	3967			Country name is missing for 167 subscribers (all controls).
LanguageName	String	Subscriber's preferred language	3967			Language name is missing for 167 subscribers (all controls).
Gender	String	Subscriber's gender	4134			M: male; F: female.
YearofBirth	Numeric	Subscriber's year of Birth	3967	1918	1991	Year of birth is missing for 167 subscribers (all controls).
Registration_date	Date	Subscriber's bwin.party registration date	3967	1999/09/17	2009/11/27	Registration date is missing for 167 subscribers (all controls).
First_Deposit_Date	Date	Subscriber's bwin.party first deposit date	4134	2000/05/08	2009/11/27	

Variables in Raw Dataset II – Daily Aggregates

Variable	Data Type	Description	N	Min	Max	Note
UserID	Numeric	User id	981782	31965	9859152	User ID was assigned to each participant by bwin.party at time of registration.
Date	Date	Date of transaction	981782	2000/05/01	2010/11/10	
ProductType	Numeric	Product type	981782	1	25	Please see Appendix 1.
Turnover	Numeric	Amount staked	790242	0	1311342	Total betting stakes on a given day (Euro), for a given product. Missing data are explained at the bottom of Appendix 1.
Hold	Numeric	Amount lost	790242	-49701.5	34695	Total amount lost on a given day (Euro), for a given product. Negative values indicate money won. Missing data are explained at the bottom of Appendix 1.
NumberofBets	Numeric	Number of bets	981753	0	20587	Total number of bets on a given day, for a given product.

Variables in Raw Dataset III –Responsible Gambling Details

Variable	Data Type	Description	N	Min	Max	Note
UserID	Numeric	User ID	2068	31965	9858876	User ID was assigned to each participant by bwin.party at time of registration.
RGsumevents	Numeric	Number of RG events	2068	1.00	8.00	Sum of RG events experienced by the subscriber.
RGFirst_Date	Date	First RG event date	2065	2008/11/02	2009/11/30	Date of first RG event. Data are missing for 3 subscribers.
RGLast_date	Date	Last RG event date	2067	2008/11/02	2009/11/30	Date of last RG event. Data missing for 1 subscriber.
Event_type_first	Numeric	Type of first RG event	2066	1	13	Type of RG event (for first RG event). Please see Appendix 2.
Interventiontype_first	Numeric	Type of first customer service intervention	2062	1	18	Type of intervention for first RG event. Data are missing for 6 subscribers. Please see Appendix 3.

Variables in AnalyticDataset

Variable	Data Type	Description	N	Min	Max	Note
UserID	Numeric	User id	4132	31965	9859152	User ID was assigned to each participant by bwin.party at time of registration.
RG_case	Numeric	Group	4132	0	1	0 = control; 1 = RG case
Missing_Daily_Transactions	Numeric	Whether missing daily transactions	4132	0	1	0 = not missing; 1 = missing
First_Deposit_Date	Date	First bwin.party deposit date	4132	2000/05/08	2009/11/27	
Registration_date	Date	Bwin.party registration date	3965	1999/09/17	2009/11/27	Registration date is missing for 167 subscribers (all controls).
CountryName	String	Country of residence	3965			Country name is missing for 167 subscribers (all controls).
LanguageName	String	Preferred language	3965			Language name is missing for 167 subscribers (all controls).
Gender	String	Gender	4132			F = female; M = male
YearofBirth	Numeric	Year of birth	3965	1918	1991	Year of birth is missing for 167 subscribers (all controls).

Variable	Data Type	Description	N	Min	Max	Note
age_at_registration	Numeric	Age at registration	3965	16.00	90.00	Age at registration is missing for 167 subscribers (all controls).
sum_stakes_fixedodds	Numeric	Sum of stakes: fixed odds	3781	.02	669482.67	†
sum_bets_fixedodds	Numeric	Sum of bets: fixed odds	3781	1.00	138866.00	†
bettingdays_fixedodds	Numeric	Sum of active betting days: fixed odds	3781	1.00	2155.00	†
duration_fixedodds	Numeric	Duration of betting days: fixed odds	3781	1.00	3759.00	†
frequency_fixedodds	Numeric	Frequency: fixed odds	3781	.00	1.00	†
bets_per_day_fixedodds	Numeric	Bets per betting day: fixed odds	3781	1.00	474.72	†
euros_per_bet_fixedodds	Numeric	Euros per bet: fixed odds	3781	.02	1004.99	†
net_loss_fixedodds	Numeric	Net loss: fixed odds	3781	-33216.77	64345.20	†
percent_lost_fixedodds	Numeric	Percent lost: fixed odds	3781	-12.58	1.00	†
sum_stakes_liveaction	Numeric	Sum of stakes: live action	3153	.01	2220124.76	†
sum_bets_liveaction	Numeric	Sum of bets: live action	3153	1.00	74901.00	†
bettingdays_liveaction	Numeric	Sum of active betting days: live action	3153	1.00	1620.00	†
duration_liveaction	Numeric	Duration of betting days: live action	3153	1.00	2917.00	†
frequency_liveaction	Numeric	Frequency: live action	3153	.00	1.00	†
bets_per_day_liveaction	Numeric	Bets per betting day: live action	3153	1.00	113.00	†

Variable	Data Type	Description	N	Min	Max	Note
euros_per_bet_liveaction	Numeric	Euros per bet: live action	3153	.01	543.95	†
net_loss_liveaction	Numeric	Net loss: live action	3153	-22062.19	115932.64	†
percent_lost_liveaction	Numeric	Percent lost: live action	3153	-7.00	1.00	†
sum_stakes_casino	Numeric	Sum of stakes: casino	1592	.35	12054848.50	†
sum_bets_casino	Numeric	Sum of bets: casino	1592	1.00	2292042.00	†
bettingdays_casino	Numeric	Sum of active betting days: casino	1592	1.00	970.00	†
duration_casino	Numeric	Duration of betting days: casino	1592	1.00	3168.00	†
frequency_casino	Numeric	Frequency: casino	1592	.00	1.00	†
bets_per_day_casino	Numeric	Bets per betting day: casino	1592	1.00	3883.25	†
euros_per_bet_casino	Numeric	Euros per bet: casino	1592	.01	1705.73	†
net_loss_casino	Numeric	Net loss: casino	1592	-35851.11	175054.35	†
percent_lost_casino	Numeric	Percent lost: casino	1592	-6.60	1.00	†
net_loss_fixedodds_nonzero	Numeric	Net loss fixed odds + constant	3781	1.23	97563.20	†
percent_lost_fixedodds_nonzero	Numeric	Percent lost fixed odds + constant	3781	.42	14.00	†
net_loss_liveaction_nonzero	Numeric	Net loss live action + constant	3153	.81	137995.64	†
percent_lost_liveaction_nonzero	Numeric	Percent lost live action + constant	3153	1.00	9.00	†
net_loss_casino_nonzero	Numeric	Net loss casino + constant	1592	.89	210906.35	†
percent_lost_casino_nonzero	Numeric	Percent lost casino + constant	1592	.40	8.00	†

Variable	Data Type	Description	N	Min	Max	Note
sum_stakes_fixedodds_sqrt	Numeric	Sum of stakes: fixed odds: square root transformed	3781	.14	818.22	†
sum_bets_fixedodds_sqrt	Numeric	Sum of bets: fixed odds: square root transformed	3781	1.00	372.65	†
bettingdays_fixedodds_sqrt	Numeric	Sum of active betting days: fixed odds: square root transformed	3781	1.00	46.42	†
duration_fixedodds_sqrt	Numeric	Duration of betting days: fixed odds: square root transformed	3781	1.00	61.31	†
frequency_fixedodds_sqrt	Numeric	Frequency: fixed odds: square root transformed	3781	.05	1.00	†
bets_per_day_fixedodds_sqrt	Numeric	Bets per betting day: fixed odds: square root transformed	3781	1.00	21.79	†
euros_per_bet_fixedodds_sqrt	Numeric	Euros per bet: fixed odds: square root transformed	3781	.14	31.70	†
net_loss_fixedodds_nonzero_sqrt	Numeric	Net loss: fixed odds: square root transformed	3781	1.11	312.35	†
percent_lost_fixedodds_nonzero_sqrt	Numeric	Percent lost: fixed odds: square root transformed	3781	.65	3.74	†
sum_stakes_liveaction_sqrt	Numeric	Sum of stakes: live action: square root transformed	3153	.11	1490.01	†

Variable	Data Type	Description	N	Min	Max	Note
sum_bets_liveaction_sqrt	Numeric	Sum of bets: live action: square root transformed	3153	1.00	273.68	†
bettingdays_liveaction_sqrt	Numeric	Sum of active betting days: live action: square root transformed	3153	1.00	40.25	†
duration_liveaction_sqrt	Numeric	Duration of betting days: live action: square root transformed	3153	1.00	54.01	†
frequency_liveaction_sqrt	Numeric	Frequency: live action: square root transformed	3153	.03	1.00	†
bets_per_day_liveaction_sqrt	Numeric	Bets per betting day: live action: square root transformed	3153	1.00	10.63	†
euros_per_bet_liveaction_sqrt	Numeric	Euros per bet: live action: square root transformed	3153	.11	23.32	†
net_loss_liveaction_nonzero_sqrt	Numeric	Net loss: live action: square root transformed	3153	.90	371.48	†
percent_lost_liveaction_nonzero_sqrt	Numeric	Percent lost: live action: square root transformed	3153	1.00	3.00	†
sum_stakes_casino_sqrt	Numeric	Sum of stakes: casino: square root transformed	1592	.59	3472.01	†
sum_bets_casino_sqrt	Numeric	Sum of bets: casino: square root transformed	1592	1.00	1513.95	†

Variable	Data Type	Description	N	Min	Max	Note
bettingdays_casino_sqrt	Numeric	Sum of active betting days: casino: square root transformed	1592	1.00	31.14	†
duration_casino_sqrt	Numeric	Duration of betting days: casino: square root transformed	1592	1.00	56.28	†
frequency_casino_sqrt	Numeric	Frequency: casino: square root transformed	1592	.04	1.00	†
bets_per_day_casino_sqrt	Numeric	Bets per betting day: casino: square root transformed	1592	1.00	62.32	†
euros_per_bet_casino_sqrt	Numeric	Euros per bet: casino: square root transformed	1592	.10	41.30	†
net_loss_casino_nonzero_sqrt	Numeric	Net loss: casino: square root transformed	1592	.94	459.25	†
percent_lost_casino_nonzero_sqrt	Numeric	Percent lost: casino: square root transformed	1592	.63	2.83	†
sum_stakes_fixedodds_sqrt_zeros	Numeric	Sum of stakes: fixed odds: square root transformed, with zeros imputed when appropriate (i.e., for participants who did not engage in this product)	4111	0.00	818.22	††
sum_bets_fixedodds_sqrt_zeros	Numeric	Sum of bets: fixed odds: square root transformed, with zeros imputed	4111	0.00	372.65	††
bettingdays_fixedodds_sqrt_zeros	Numeric	Sum of active betting days: fixed odds: square root transformed, with zeros imputed	4111	0.00	46.42	††

Variable	Data Type	Description	N	Min	Max	Note
duration_fixedodds_sqrt_zeros	Numeric	Duration of betting days: fixed odds: square root transformed, with zeros imputed	4111	0.00	61.31	††
frequency_fixedodds_sqrt_zeros	Numeric	Frequency: fixed odds: square root transformed, with zeros imputed	4111	0.00	1.00	††
bets_per_day_fixedodds_sqrt_zeros	Numeric	Bets per betting day: fixed odds: square root transformed, with zeros imputed	4111	0.00	21.79	††
euros_per_bet_fixedodds_sqrt_zeros	Numeric	Euros per bet: fixed odds: square root transformed, with zeros imputed	4111	0.00	31.70	††
net_loss_fixedodds_sqrt_zeros	Numeric	Net loss: fixed odds: square root transformed, with zeros imputed	4111	1.11	312.35	††
percent_lost_fixedodds_sqrt_zeros	Numeric	Percent lost: fixed odds: square root transformed, with zeros imputed	4111	0.00	3.74	††
sum_stakes_liveaction_sqrt_zeros	Numeric	Sum of stakes: live action: square root transformed, with zeros imputed	4111	0.00	1490.01	††

Variable	Data Type	Description	N	Min	Max	Note
percent_lost_fixedodds_sqrt_zeros	Numeric	Percent lost: fixed odds: square root transformed, with zeros imputed	4111	0.00	3.74	††
sum_stakes_liveaction_sqrt_zeros	Numeric	Sum of stakes: live action: square root transformed, with zeros imputed	4111	0.00	1490.01	††
sum_bets_liveaction_sqrt_zeros	Numeric	Sum of bets: live action: square root transformed, with zeros imputed	4111	0.00	273.68	††
bettingdays_liveaction_sqrt_zeros	Numeric	Sum of active betting days: live action: square root transformed, with zeros imputed	4111	0.00	40.25	††
duration_liveaction_sqrt_zeros	Numeric	Duration of betting days: live action: square root transformed, with zeros imputed	4111	0.00	54.01	††
frequency_liveaction_sqrt_zeros	Numeric	Frequency: live action: square root transformed, with zeros imputed	4111	0.00	1.00	††
bets_per_day_liveaction_sqrt_zeros	Numeric	Bets per betting day: live action: square root transformed, with zeros imputed	4111	0.00	10.63	††

Variable	Data Type	Description	N	Min	Max	Note
euros_per_bet_liveaction_sqrt_zeros	Numeric	Euros per bet: live action: square root transformed, with zeros imputed	4111	0.00	23.32	††
net_loss_liveaction_sqrt_zeros	Numeric	Net loss: live action: square root transformed, with zeros imputed	4111	0.00	371.48	††
percent_lost_liveaction_sqrt_zeros	Numeric	Percent lost: live action: square root transformed, with zeros imputed	4111	0.00	3.00	††
sum_stakes_casino_sqrt_zeros	Numeric	Sum of stakes: casino: square root transformed, with zeros imputed	4111	0.00	3472.01	††
sum_bets_casino_sqrt_zeros	Numeric	Sum of bets: casino: square root transformed, with zeros imputed	4111	0.00	1513.95	††
bettingdays_casino_sqrt_zeros	Numeric	Sum of active betting days: casino: square root transformed, with zeros imputed	4111	0.00	31.14	††
duration_casino_sqrt_zeros	Numeric	Duration of betting days: casino: square root transformed, with zeros imputed	4111	0.00	56.28	††

Variable	Data Type	Description	N	Min	Max	Note
frequency_casino_sqrt_zeros	Numeric	Frequency: casino: square root transformed, with zeros imputed	4111	0.00	1.00	††
bets_per_day_casino_sqrt_zeros	Numeric	Bets per betting day: casino: square root transformed, with zeros imputed	4111	0.00	62.32	††
euros_per_bet_casino_sqrt_zeros	Numeric	Euros per bet: casino: square root transformed, with zeros imputed	4111	0.00	41.30	††
net_loss_casino_sqrt_zeros	Numeric	Net loss: casino: square root transformed, with zeros imputed	4111	0.00	459.25	††
percent_lost_casino_sqrt_zeros	Numeric	Percent lost: casino: square root transformed, with zeros imputed	4111	0.00	2.83	††

† Data are missing for the subscribers who did not engage in this product during the window of observation.
†† Data are missing for the 21 subscribers (all controls) who have no daily aggregates of betting behavior.

Appendix 1: Product Type IDs, Names, and Types

Product ID†	Product Name	Product Type
1	sportsbook fixed odds	Fixed odds
2	sportsbook live action	Live action
3	poker boss media 4*	Poker
4	casino boss media 2	Casino
5	Supertoto*	Games
6	games VS*	Games
7	games bwin*	Games
8	casino chartwell	Casino
9	race book*	Games
10	poker bwin*	Poker
14	games football*	Games
15	Minigames*	Games
16	mobile games*	Games
17	mobile casino	Casino
19	gamArena*	Games
20	Gratta e Vinci*	Games
21	Fantasy Sports*	Games
22	Paradice*	Games
23	Backgammon*	Games
24	Sidegames*	Games
25	Bingo*	Games

* For these third-party (vendor) products, we consider turnover and hold information included in the daily aggregates file sent from bwin.party invalid due data storage procedures. In **Raw Datset II.Daily aggregates_RG**, we have set to "missing" the turnover and hold values for these products. For these products, we urge caution in interpretation of the variable "number of bets." In Gray, LaPlante and Shaffer (2012), we use data only from Products 1, 2, 4, 8, and 17.

† Four additional products (identified by bwin.party as "poker B2B," "casino B2B," "casino B2C," and "poker B2C") are not represented in the daily aggregates dataset because none of the participants engaged in these products during the window of observation.

Appendix 2: Responsible Gambling Event IDs, Labels, and Descriptions

RG event ID	RG event label	RG event description
1	3rd person contact	A 3rd party (e.g., a relative) contacts bwin.party customer service (CS) to get the account blocked due to RG reasons.
2	account closure/reopening	The subscriber CS to have his account closed due to problem gambling or reopened after a closure due to problem gambling
3	cancel outpayment	The subscriber issues an out-payment from the *bwin.party* account but then calls CS to cancel the out-payment
4	change of limit: manual change	The user requested a change in the personal deposit limit and was advised by CS to make the limit change in the interface
6	fair play - heavy complainer	The subscriber complains heavily about fair play
7	inpayment block request	The subscriber requests to block one method of in-payment to the *bwin.party* account (e.g., payment from *bwin.party* to the subscriber's credit card)
8	minor case	The subscriber or someone else identifies the subscriber is identified as a minor
9	partial block	The subscriber requests *bwin.party*; CS to block one or more (but not all) products due to problem gambling
10	problem reported	The subscriber reports a problem, which may or may not be justified
11	user request higher limit	The subscriber requests a personal deposit limit which is above the standard permitted deposit limit
12	two events on the same day	Subscriber experienced two RG events on the same day
13	not reported by bwin	Event type not reported by bwin.party

Appendix 3: Customer Service Intervention Codes and Descriptions

Intervention Code	Intervention Description
1	bwin.party gives additional RG advice to subscriber
2	Subscriber's account is re-opened upon customer request after closure or self-exclusion period had elapsed
3	The customer's request was technically not possible.
4	Account blocking for investigation and asking the customer for a detailed statement about his situation
5	Change of personal deposit limit from 'VIP' subscriber accepted.
6	Request for partially blocked account block could not be conducted completely.
7	The third party who has made a request is advised about privacy regulation; the customer is contacted and asked for a statement; the customer account remains open until further evidence indicates confirms suspicions.
8	Request for partially blocked account block could be conducted completely.
9	Inpayment method not blocked as requested.
10	Inpayment method blocked
11	Request for higher personal deposit limit denied.
12	Request for higher personal deposit limit accepted.
13	Daily/weekly personal deposit limit is changed.
14	Imposed account block by bwin.
15	Betting limit changed.
16	Account remains closed.
17	Account is blocked and reimbursement is given.
18	Partial block of products requested by subscriber is not possible.